

COMMUNITY HEALTH INVESTMENT

Health Services Research
in Belgium, France,
Federal German Republic
and the Netherlands

JAN BLANPAIN AND
LUK DELESIE

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Published for the
Nuffield Provincial Hospitals Trust
by the Oxford University Press

1976

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Preface

GORDON McLACHLAN

Secretary of the Nuffield Provincial Hospitals Trust

The production and particularly the editing of this book has been a voyage of discovery for me in hitherto uncharted waters. Indeed it has been an extension course in my own education about the settings, status, and direction of health services research policies furth of Britain.

The commissioning of the study was no more than a logical step in the policy of the Trust to distinguish what is happening in health services research and development in any relevant setting which might have a bearing on the Trust's purposes. We were receiving requests for permission to translate certain of our publications and the fact that Britain was drawing nearer to Europe with the likelihood of joining the Community, made it desirable to find out what was happening in those countries which had originally subscribed to the Treaty of Rome with all its implications for the harmonization of arrangements in the future.

The subsequent history invests the commission with prescience and in the event, this analysis of the four countries surveyed is an admirable reconnaissance of the institutions mainly concerned, the research strategies adopted in each country and sketches of projects of relevant interest. A comparison of the latter shows the universality of a variety of problems. Straining to hit all of a group of targets in the first salvo can often prejudice accuracy and intensity of achievement, and although this first attempt is not completely comprehensive, its faults are insignificant against what has been achieved in a sensible time-frame; and the trail blazed holds out exciting promises for those prepared to note the flora and fauna, to follow the path cut, to understand where it leads, and

to develop the model approach in whatever direction is deemed desirable.

At the same time with its critical approach to the comparison of actions and attitudes in the countries concerned the book enriches the growing literature of health services research. Taken together with what is known already about research in the UK and in North America this study is of fundamental importance to an understanding of the problems perceived in health services in an important group of Western countries, where there is common ground. The fact that a great deal of the research being carried out has a universal application but is relatively unknown outside its indigenous setting is noteworthy and suggests the need for the design of mechanisms for communicating the results of local research to audiences beyond the countries of origin, to parallel what happens already in the clinical field.

It is no part of this book to suggest the detailed next steps to the summit of universal knowledge and understanding of all the constituents' services and problems, but it is permissible to claim that the lesson from this book is that co-operation at first voluntary, perhaps on an international scale to ensure a wide dissemination of the results of research of universal application is desirable. Any mechanism would obviously have to be based on an appropriate international agency interacting with suitable focusing organizations in each country participating, using and developing as necessary, common criteria and definitions. The end result seems inevitable, and it would be a great contribution to knowledge and a gateway to understanding. It is hoped a reconnaissance of the logistics will soon be mounted perhaps even before the publication of the book itself.

London, October 1975

Foreword

Professor S. HALTER, MD

*Secretary General of the Ministry of Health
and Family, Belgium*

President of the Twenty-Eighth World Health Assembly

It is with great pleasure I have accepted the honour of writing a Foreword to this detailed review of some of the major health services research efforts in Europe, by a team of authors particularly apt to present such a review.

Recent events, in particular the discussions within the European Economic Community regarding the freedom of establishment and the free circulation of physicians have shown to what extent health services, in the member countries of the EEC, are disparate and difficult to understand and to interpret.

The existing differences which present the possibility of serious hindrance to fruitful co-operation, in essence arise from the different history of each of the societies now constituting the European entity. It is not too optimistic to believe that health services research however, can contribute substantially to promote not only mutual understanding among nations but also to further the health status of the populations of Europe.

In 1958 with the encouragement of the Regional Office of the World Health Organization, Schools of Public Health were established and developed in continental Europe with the double mission of assuring on the one hand the education of competent public health specialists and on the other hand to develop research into the multiple aspects of health care delivery.

Professor Blanpain has, from the very beginning, been involved in the development of these research efforts and from 1960 onwards, within the School of Public Health at Leuven University, Belgium, he formed a research team which has since been very active in analysing health care problems and in promoting alternative ways to

health care delivery. The research efforts of Blanpain and his colleagues, Delesie and others, are greatly appreciated in Belgium by all those who are responsible for health and for health care policy.

Many of us are deeply aware of the gaps existing in health policies in the European countries and of the efforts being sincerely made to refine and develop health care policies in our respective countries. There was however a new dimension to development of Europe and because empirical solutions were quite often used, the gaps in health matters are possibly even more evident.

In analysing the socio-economic problems, the impact, and the consequences of health problems on defined populations are now being understood better than ever. Health services, during the last fifty years, have witnessed substantial developments consequent to the changes in social conditions of the European populations. Generalized social insurance, in one form or another, and the readier access for all European citizens to health care services have resulted in considerable expenditure for the communities. The empiricism and improvization of the last century can hardly continue in view of the rapid development in the medical sciences and the evolution of the health sciences as a whole. Planning for health has become an imperative for all governments, and a scientific approach to the existing situations and the projected needs for the future is an essential feature.

Biomedical research; increasing concern for the safety aspects of environmental factors; the need for appropriate answers to the problems being identified and thus becoming more numerous and more complex constitute the reasons for justifying the considerable efforts currently being developed in all domains of health research. In addition to clinical research, epidemiological studies are being developed and as a corollary, research on the organization of health services, operations research, data-processing studies and investigations in the managerial aspects of health care delivery are being conducted more intensively than ever before. The initial hesitation and the timidity of the first steps have been replaced by well-structured research efforts and those mainly responsible for health at national and international level have become convinced of the importance and relevance of all that is included in the general term health services research.

A European viewpoint is clearly developing and is reflected in the recent creation of the European Science Foundation following the

established meetings over a number of years, of the European Medical Research Councils. The European Economic Community itself, perceiving the need for research in the different domains of health, has already created a Committee on Medical Research and Public Health within its Scientific and Technical Research Committee.

All these structures with the principal objective of promoting research in public health, epidemiology, health technology, etc., are geared also to encourage and foster concerted international activities. Yet we have to rely on the hard work of researchers at the unit level. The Institute for European Health Services Research is an important instrument for exploring new ideas in health care policy and its studies will undoubtedly have an impact on health care in Europe and in the world as well.

The efforts of Blanpain and Delesie relate remarkably to the decisions taken by the World Health Assembly and by the Regional Committee of the World Health Organization which are conscious of an increased awareness and conviction of the determinant and indispensable nature of research at all levels of health promotion, bio-medical research, environmental research, operations research, health manpower studies, health education research and also research regarding the organization and management of health services. This volume by Blanpain and Delesie clearly demonstrates the importance accorded to health services research in Europe. It reveals also the vast areas still to be explored and for which substantial efforts will have to be marshalled for the community of European nations to accomplish its mission for the benefit of its member-states.

This book will be a helpful guide to all those who for many reasons are committed to health, its policies and its improvement.

Brussels, July 1975

PART I

**Conclusions and
Recommendations**

A comparison of health services research in the four countries under investigation

THE SHARING OF HEALTH SERVICES RESEARCH

There is no doubt but that the governmental agencies are the main health services research sponsoring agencies in each of the four countries under investigation. The main reason for this is that traditionally health services research is primarily conducted in university settings which, in all the countries reviewed, are heavily subsidized by government. By the same token most health services research is non-mission-oriented and hence left to the initiative of the individual university professor or researcher. During the 1950s and 1960s, however, each country in its own way experienced a reaction against this non-mission-oriented research which has resulted in a gradual shift in the role and influence of the supporting agencies. Although this shift was differently experienced in each country, in each case the result was a diminishing role of the non-mission-oriented university research and concurrently of the Ministry of Education which is responsible for these universities.

Two trends can be identified in the structure of supporting agencies by which this shift towards mission-oriented research became possible.

The emergence of special purpose governmental supporting agencies

In Belgium and France specific governmental agencies assumed this new supporting role. In both countries for instance a Ministry was created specifically geared towards matters of science and research: in Belgium the Secretariat of State for Science Policy and Pro-

gramming, in France the Ministry of Industrial and Technical Development.

In each country this new Ministry assures a policy role by re-orienting other ministries' support, as well as an executive role by launching its own research programme. This policy role, however, is limited in Belgium to the formulation of research objectives, while in France the particular Ministry has a much stronger grip on research policy as it centralizes all research budgets submitted to governmental agencies.

In the Netherlands the shift towards governmental supporting agencies other than the Ministry of Education is not so obvious. Although the Organization for Applied Scientific Research could possibly be looked at as the prime candidate to foster mission-oriented research, it has not yet taken up this role to the same extent as in the other countries considered.

Two reasons can be identified for this situation in the Netherlands:

1. The need for a special agency to deal with mission-oriented research is not as apparent in the Netherlands as it is in the other countries. In other words university-based research has demonstrated sufficient flexibility in reorienting itself towards problems relevant to society. The special network, existing in the Netherlands, of the many advisory committees and scientific committees which often include the same governmental and non-governmental individuals assured the alertness of university research towards society's problems.
2. Moreover, the Netherlands is unique in that sufficiently strong mission-oriented non-governmental supporting agencies have been created which precludes the need for governmental initiative.

The shift towards mission-oriented research in the Federal German Republic has emanated primarily through the increasingly more important role of the Federal agencies. Indeed university research is state-financed in that country. To counterbalance this state and university influence and concurrently to induce mission-oriented research, the Federal Government created the Science Council which though not a governmental agency in the strict sense of the word, voices the government's interest in mission-oriented research.

The emergence of governmental health services-oriented research settings

When the universities do not respond to particular research interests of the government, the governments can take two courses of action:

1. Induce particular research projects through manipulation of the money flows (p. 3).
2. Take responsibility for particular research projects.

Undoubtedly one can discern an increasingly growing influence with respect to health services research of the Ministries of Health in each of the countries under investigation.

This active support role of the Ministry of Health in sponsoring health services research projects of particular interest to itself is most evident in France. Due primarily to a lack of university interest, the Ministry of Health and Social Security in France started its own research programme. Part of this research is conducted within the governmental administration itself (the Office of Research and Planning of the Ministry of Health and Social Security), but the bulk of it is delegated to a separate Institute which is directly supervised by the Minister of Health and Social Security: the Institute of Public Health and Medical Research. A similar Institute (the Centre of Research and Documentation of Consumption) to deal primarily with the economic aspects of health has been started by another Ministry.

A similar development is evolving in the Federal German Republic though of more recent date. The Institute for Social Medicine and Epidemiology of the Federal Health Bureau though certainly not comparable in size to its French counterpart is slowly developing towards a German Institute of Public Health. At present however, the Federal Ministry does not seem too anxious to conduct all of its own research or to force the issue.

The situation in the Netherlands is very much the same. The existence of a long-established single governmental research institution covering all ministries precluded the creation of a new governmental research institution to deal with health services research. Nevertheless the Ministry of Health and Environmental Hygiene recently reinforced its support role in sponsoring mission-oriented health services research of particular interest to itself and this with-

out falling back on its governmental research institution, ie the Office for Long-Term Planning in the Ministry of Health and Environmental Hygiene.

In Belgium, the Ministry of Health and Family has from the start strongly supported health services research efforts. Due to the financing mechanisms involved, the universities did not have a chance to develop their own health services research programmes against the Ministry's interests. Hence an even balance between mission-oriented and non-mission-oriented health services research has so far been prevalent. The Ministry does not anticipate conducting its own health services research projects.

The three types of health services support agencies already discussed are the main ones in each of the countries considered:

1. The Ministry of Education through the university budgets.
2. Special purpose ministries or governmental agencies sponsoring specifically mission-oriented research.
3. The Ministry of Health conducting HSR either through its own research institutions or through its granting possibilities.

One important addition to this general rule has already been mentioned with respect to the Netherlands: non-governmental supporting agencies. Indeed in that country their impact is sufficiently strong to speak of a fourth separate type of supporting agency.

No other country matches this important type of support to the extent we have found in the Netherlands. Several foundations, professional associations, and labour union organizations can be identified which have supported some research projects. Nevertheless some headway has been made in this same direction in the Federal German Republic. The most important of these support organizations is the German Hospital Association and its associated Hospital Institute, though others are also developing.

In Belgium the role of non-governmental support agencies is even more limited than in the Federal German Republic. The Hospital Association of the Catholic Charities does have some limited experience in this respect.

In France only one single non-governmental health services research supporting agency could be identified: the Royaumont Foundation which dates only from 1973.

The role of industry in supporting health services research is

minimal in each of the four countries under investigation and almost exclusively involves computer firms sponsoring one or two electronic data-processing applications.

HEALTH SERVICES RESEARCH STRATEGIES

A strategy without a means of implementation is useless: this truth holds for health services research strategies in the four countries under investigation.

Hence more effort has been spent in recent years in each country on developing the mechanisms by which a single strategy could be implemented rather than on developing the strategy itself.

The point has been made that the universities constituted the traditional stronghold of health services research. This independence is at the basis of the diluted and scattered health services research efforts, which could be observed up until recently in each of the four countries. Before going ahead with any single strategy it was of absolute necessity to provide the means by which any strategy at all could be induced. The fact that most health services research efforts were sponsored by governmental agencies should in principle have facilitated this task. In this connection it is possible to postulate that the extent to which each country has been able to develop a single health services research strategy is very much a function of the degree to which and the way in which government itself has been able to organize its over-all research efforts in a coherent way. France has undoubtedly moved furthest ahead in this direction. The large extent to which government is historically organized and centralized in that country has of course helped. The active role of the Planning Bureau, attached to the Office of the Prime Minister, works as a catalyst in formulating and implementing a coherent research strategy. The whole apparatus to follow up this strategy, its most important exponent being the Delegation for Scientific and Technical Research, was reorganized in 1970, and is now very well established to actively influence health services research efforts.

In the Federal German Republic the rise of the power of the Federal Government since the beginning of the 1950s runs parallel to the government's efforts in developing a single research strategy.

Although no such high-level institution as the Planning Bureau in

France does exist in the Federal German Republic, the Federal Government has nevertheless found ways to implement a research co-ordinating agency. The Science Council is similar to the one found in France yet not as powerful. On the one hand and most probably as a concession to the traditional research policy powers, in Germany the State governments and the academic world still constitute a majority on the Science Council's top-level governing bodies; on the other hand the Science Council's funds, and therefore financial leverage, come primarily from the Federal Government. Though several safety valves are built into the German Science Council so that it cannot decide against the State governments nor the German Research Society which is the academic stronghold, the Science Council has nevertheless rapidly expanded its sphere of influence in recent years, and now very much influences the health services research strategy in the Federal German Republic.

From a historic point of view the Netherlands would seem to be the country most prepared to formulate a single research strategy. Indeed, the Organization for Applied Scientific Research, in which the academic world, the government, as well as the social partners are represented, has already existed since 1932. In part because of this early start, one does not find a policy agency as strongly developed in the Netherlands, as in the other countries of this study.

Indeed, the government in the Netherlands has through the years fostered the development of a virtual myriad of interlinked advisory boards, research councils, scientific committees to such an extent that the need for a single highly powered body has not actually arisen. Only in 1971 for instance, did the Netherlands appoint a minister to deal with matters of science and research. Moreover this minister without portfolio was charged not so much with developing a national research strategy as with co-ordinating ongoing activities. Also, since 1956, the country has had a Health Council attached as an advisory committee to the Ministry of Health and Environmental Hygiene which includes representatives of all parties interested in health and, though not the only body, since its beginning has attempted to develop a co-ordinated health research strategy.

In Belgium, the structure of the research strategy formulating agencies looks rather similar to its French counterpart. There are, however, reservations to this. The Belgian structure is of more recent origin and is not so high-powered. This was indeed not as necessary as in France because in Belgium the world of academics

has always had sufficient access to government and vice-versa so as to preclude the emergence of divergent power blocs. Indeed, the Interministry Committee for Science Policy of the Council of Ministers in Belgium has operated only since the mid 1960s and has only recently been formalized into an administrative apparatus within the Secretariat of State for Science Policy and Programming. Its role, however, more particularly with respect to health services research, is increasing. Originally only working as a documentation centre with respect to research in Belgium, the Secretariat of State has since started with the formulation of objectives for large-scale research programmes and is actually already approving research grants towards its goals, some of which touch on health services research.

Again with respect to health services research, strategies in the four countries under investigation relate to the particular setting in which mission-oriented health services research is supposed to take off. In the smaller countries (the Netherlands and Belgium) the authorities seem to favour a university-related research setting; in the larger countries (the Federal German Republic and France) specific research institutions take the upper hand.

Indeed both Belgium and the Netherlands are trying to develop health services research settings through reorganization of university research. Both are putting aside special resources for the training and development of particularly gifted students. These can be employed on a temporary basis within the research units of the universities where they will engage in doctoral or post-doctoral work.

Through using these special resources both Belgium and the Netherlands hope to develop some university-based health services research settings of sufficient size to address the research problems in a successful way.

In the Federal German Republic and France the allocation of resources is not directed to such an extent as to effect individual doctoral or post-doctoral students, or openings. The all-encompassing research grant is the mechanism intended to implement mission-oriented health services research. This granting mechanism clearly favours those research settings which can engage full time in health services research projects. In the Federal German Republic, those research institutions which receive these grants still often have a link with one or more universities although this link is primarily limited

to one or more teaching appointments of some of the institutions' most illustrious researchers. In France, this process is furthest developed: the all-encompassing grants are even frequently institutionalized and can often be looked at as yearly research budgets. Moreover, university links are almost nonexistent.

Although this discussion could easily give the impression either that Belgium and the Netherlands do not at all apply the all-in-research grant mechanism or that in the Federal German Republic and France individual doctoral health services research work never gets sponsored, this is not the case. Indeed some all-encompassing research grants have been allocated recently in the Netherlands and Belgium and individual doctoral students still can look for support in the Federal German Republic and France. The difference between the two approaches sketched is only one of emphasis.

Another matter of interest on health services research strategies concerns the research topics addressed in each country. This particular problem is discussed later (p. 19). A final aspect of health services research strategy is the extent to which particular research projects have been implemented. Three broadly defined outcomes of health services research can be anticipated:

1. One level of project, often basic, developmental, descriptive, and analytical is primarily conducted to satisfy the researcher's curiosity and only marginally influences thinking about health care policy.
2. Another level often developmental, comparative, and prospective is concerned with real or perceived problem areas when they get to the headlines. The researchers usually do not solve the problem as such, but touch on particular aspects of it which they investigate, analyse, and on the basis of which they develop certain recommendations or guidelines. This kind of project does not influence health care policy in a direct way but very often influences people's thinking and as such redirects health care policy.
3. A third level often developmental and applications-oriented, prospective, comparative, and analytical is primarily geared towards the solution of particular problems. This project directly influences health policy, as the project's results though not necessarily all of them, are actively implemented.

The first type of project is apparent in much of the university-based health services research in each of the four countries under investigation.

In some of the national institutes in the Federal German Republic and France, and in some of the commercial agencies in France, this first type is also prevalent. The Netherlands seems the only country where a deliberate effort is being undertaken to delimit this first type of research endeavour and to redirect the resources involved into health services projects more directly geared towards actual health care problems and policy.

The second type of project is most abundant. Most non-university-related research in the Netherlands, the Federal German Republic, and France, with the exception as mentioned above, is of this type.

The third type of project is typically the research project conducted by the national institutes. Indeed few research institutions except the national institutes are geared to undertaking applications-oriented research projects.

This situation with respect to health services research in the four countries under investigation bears out the observation that successful research efforts, from the viewpoint of implementation, are in particular those which are conducted by the organizations directly confronted with the problems defined.

Nevertheless, there are notable exceptions to this general rule. In Belgium for instance nearly all health services research efforts are university-based. Many of these research centres, however, are directed by or call upon individuals who have also an active role in health services operations or health services policy. Hence, the three types of projects coexist in each research centre. The same remark also holds to a large extent in the Netherlands, although the special network of advisory committees and scientific committees which characterizes each research centre and each research project is in the main responsible for health services research being directed into applications-oriented projects.

One additional observation should be recorded with respect to the implementation opportunities of the national institutes. While these institutes side with the health care providers in the Federal German Republic and the Netherlands, they do not do so in France where they are primarily aligned with health care policymakers. Hence a difference in emphasis of research objectives can be discerned. Applications-oriented research projects in the Netherlands and the Federal German Republic are micro-orientated as they deal with the individual institutions, particular types of facilities, singular

organizational set-ups. On the other hand, applications-oriented research projects in France are geared towards the macro-level and should involve any one single type of institution or organization.

A recent trend towards this type of applications-oriented research project on the macro-level can also be identified in the Netherlands through a partnership between health care provider organizations and health care policymakers.

The actual number of experimental designs or pilot settings in the framework of applications-oriented health services research projects is rather limited and is primarily concentrated in the Netherlands where these are more than in the other countries taken together. This point will be further developed when the specific research topics will be dealt with (p. 19).

HEALTH SERVICES RESEARCH EXPENDITURE

A true comparison of health services research costs is hampered for several reasons:

1. Exchange rates in fact fluctuate continuously. The 'exchange' rates used in this report are the ones of the month of April 1974. Firstly, rates were not continuously the same during the period under investigation, for example exchange rates of December 1968 differ from those of the month of April 1974. Nevertheless, and in a first approximation, the expenditures on health services research have been estimated by country without taking into account any time dependent averaging factor to reflect fluctuating exchange rates. Again, the exchange rates have also fluctuated since the initial compilation of data for this report up to the time of publication.
2. Exchange rates are not, however, sufficient to broad comparisons in research efforts among particular countries. Indeed the wage levels paid to health services researchers are not the same among the different countries. Hence, the same money resources do not necessarily imply the same effort. This has been partially offset by varying ratios with respect to GNP or health-related expenditures.
3. Even if the actual costs could have been rigorously compiled one would not be able to arrive at an exact comparison of health services research expenditure. Indeed accounting and bookkeeping pro-

cedures show significant variability among the different countries. Each country expresses health-related expenditure for instance in its own peculiar way. This is most dramatically exemplified in the Netherlands where national accounting procedures have drastically changed during the period of investigation. This is taken into account as much as possible though no foolproof system could possibly be developed.

Many of the figures put forward are estimates. This was absolutely unavoidable as even the national figures, with the notable exception of France, developed by national agencies differed among themselves. Hence this discussion on health services research expenditures should be interpreted as the development of a frame of reference rather than as an accountant's report.

Table 1 gives a survey of the different estimates. Much effort has been spent on checking different budget items which are covered by such terms as 'health-related expenditure', 'expenditure on research and development', and 'health services research expenditure'. For the purposes of the survey private as well as public research expenditure on health-related drugs and tooling of health-related equipment have been included in research and development expenditure related to health. Although this survey is not foolproof, for example, biological research in the medical faculties of universities is classified as health-related research while biological research in the biology departments of some universities are excluded from health-related research independent of the individual project's objectives, it provides for a comparative view on health care and health services research expenditure among the four countries.

This limits absolute comparisons and a direct comparison of the different ratios does not reflect real effort spent. For instance while it may be completely sensible to look at the expenditure on research and development as a fixed proportion of all health-related expenditure, this same reasoning does not hold if health services research expenditure more specifically is compared with all health-related expenditure. Indeed each country has a wide range of programmes and facilities. However, most problems in the field of health services research are not dependent so much on the size of the programmes or facilities but on the organizational deficiencies and the economical interlinkage of the different programmes and are to a large extent independent of the size of these. Thus, the investigation into the

TABLE I
*Health care and health services research expenditure in the
 countries under investigation (1970: estimated)*

	<i>Netherlands</i>	<i>Belgium</i>	<i>France</i>	<i>FGR</i>
1. GNP ¹ (£ million)	18,000	14,900	73,300	107,000
2. Population ² (£000s)	13,039	9,676	50,768	61,560 ³
3. GNP per inhabitant (£s)	1,380	1,540	1,444	1,738
4. Health-related expenditure ⁴ (£ million)	1,154 ⁵	970 ⁶	4,618 ⁷	6,600 ⁸
5. Health-related expenditure as percentage of GNP	6.4	6.5	6.3	6.2
6. Health-related expenditure per inhabitant (£s)	89	100	91	107
7. Expenditure on research and development related to health (£ million)	25 ⁹	19 ¹⁰	92 ¹¹	139 ¹²
8. Expenditure on research and development related to health as percentage of health-related expenditure	2.2	2.0	2.0	2.1
9. Health services research expenditure (£000s)	1,622 ¹³	315 ¹⁴	2,190 ¹⁵	2,000 ¹⁶
10. Health services research as percentage of expen- diture on research and development related to health	6.5	1.7	2.4	1.4
11. Health services research as percentage of health- related expenditure	0.14	0.03	0.05	0.03

1. Based on OECD statistics, exchange rates as indicated, no time-dependent weighting.

2. United Nations statistics.

3. Includes West Berlin.

4. Health-related expenditure includes public and private expenditure for curative care, preventive care, industrial medicine, the education of health professionals, research expenditure, and general administrative support.

Research expenditure includes public as well as private expenditure on health care research, microbiological research if related to health, and expenditure on research and development of drugs and tooling. This estimate excludes industrial production loss because of sickness, the extra costs of early invalidity pensions, sickness pay or any other wage compensation as a consequence of sickness, expenditure on the improvement of the environment, ecological (water purification plants), as well as housing environment (such as sewer development, housing improvement grants, etc.).

factors of medical consumption will be equally expensive whether the population covered consists of ten million individuals or if it consists of fifty million individuals.

The research methodology is very much the same, only the research techniques such as sampling procedures, computer compilations, etc., will be different. Under this hypothesis each country should probably spend the same amount of effort on health services research as any other country irrespective of size.

If looked at from this viewpoint, Belgium appears clearly as the exception to the group of countries investigated. The Netherlands on the other hand seems to conform to the thesis, despite the inevitably limited resources of research manpower which is very much related to the size of the country. It is interesting to see this comes out too in looking at the several countries, their research settings, and their research projects.

5. Centrale Raad voor de Volksgezondheid, *Benadering van de ontwikkeling van de kosten van de Nederlandse Gezondheidszorg, in de periode 1950-1980*, Rijswijk, 18 januari 1974.

6. Based on an independent estimate developed for the year 1973 by an official of the Ministry of Health and Family discounted by use of the growth-rates of health care expenditure calculated by the National Institute of Statistics for the years 1971, 1972, and 1973.

7. Based on an estimate developed by the Centre of Research and Documentation of Consumption (CREDOC) for the year 1967. The extrapolation for the year 1970 uses 1967 ratios.

8. Based on an estimate developed for the year 1968 by Professor Dr Szameitat. The extrapolation is based on a weighted average of GNP growth-rates for the years 1969 and 1970 and social security curative care expenditure growth-rates for the same period.

9. See (5).

10. Based on the same source as (6) and on the Belgian national budget and discounted for the year 1970. The extrapolation to include private expenditure: primarily research expenditure by the pharmaceutical industry is the most likely estimate on the basis of similar ratios in other countries and independently developed estimates of research expenditure by the pharmaceutical and chemical industry.

11. Based on an estimate developed by the Delegation Generale à la Recherche Scientifique et Technique for the year 1967 and extrapolated on the basis of observed growth trends towards the year 1970.

12. Based on an estimate developed in the Forschungsbericht der Bundesminister für Bildung und Wissenschaft (April 1972) and extended on the basis of independent estimates to include pharmaceutical research related to health.

13. See the chapter on expenditure on health services research in the Netherlands.

14. See the chapter on expenditure on health services research in Belgium. The proportion discounted is based upon available growth-rate for the year 1970.

15. See the chapter on expenditure on health services research in France. The extrapolation is based on the growth-rates of some of the major institutions.

16. See the chapter on expenditure on health services research in the Federal German Republic. Most likely estimate based upon available information.

HEALTH SERVICES RESEARCH SETTINGS

One hundred and fifty-two health services research centres are identified in this analysis. Although concentrations in a minor way can be observed in the Federal German Republic, nevertheless on the whole they are equally spread over the four countries under investigation. The range of size is, however, very great. Indeed one finds as many small centres manned by two to three professionals as large centres with a professional staff of thirty to forty people. The size of the centres is undoubtedly correlated to the particular set-up of the particular centre. Although over-all some 60 per cent of all centres are university-based research centres, such centres are usually also the smallest. The proportion of university-based centres also differs from country to country: from a high of 86 per cent in Belgium to a low of 30 per cent in France. Both yardsticks provide together a crude measure of the impact of the health service research centres in the four countries under investigation. The particular distribution by size and by set-up is a direct result of the different supporting mechanisms which are prevalent in each country (p. 3).

In Belgium, university-based research is about the only type of health services research which can be identified. The same situation is also still very much prevalent in the Netherlands although here three national institutes have lately emerged to counterbalance the preponderance of university-based research.

Hence both countries still depend very much on the traditional university research mechanism to sponsor and develop health services research. It can be hypothesized that the dependence is also the result of the relatively small size of the two particular countries (both have a population of about ten million inhabitants) which prevents the emergence of health services research institutes of sufficient size independent of the traditional sphere of influence of government with respect to educational policy, and the academic world in general.

The difficulty of the commercial agencies in the Netherlands of making themselves acceptable as independent think-tanks to all partners in the health services community must be combined from the same perspective.

Against this background of primarily university-based health services research, the Federal German Republic and France indicate a development in two separate directions.

In the FGR, the over-all situation with respect to the size and type of health services research institutes is very much similar to the situation in the Netherlands. However, as the universities in the FGR were traditionally within the sphere of influence of the local state governments, as against the national government (p. 269), the emergence of national, independent, and commercial agencies has been less inhibited and more evident than in the Netherlands.

As a result, some of the national institutes and some of the commercial agencies are by now very well established within the health services research community and of sufficient size to sustain a long-term research effort.

None of them, however, has attained the size or scope of their French counterparts. Indeed, in France, the national government itself has been the prime driving force behind the establishment of health services research settings outside the academic world.

As such, two national institutes and one independent research setting have been founded which really dominate health services research in that particular country. Each is supreme in its particular domain. Each is also primarily funded by government money.

A third dimension, after size and set-up, in the analysis of the health services research settings is their area of research. Few centres could be identified which really cover the whole range of health services applications or disciplines. The most common pattern seems to be the health services research centre which bears upon the application of a given traditional academic discipline, such as sociology, economy, social security, econometrics, psychology, to particular problems identified in health services applications.

Hence, the comprehensive health services research centre rarely formally exists but usually consists of a group of people from the traditional university department, who concentrate their research efforts, sometimes occasionally, sometimes in a more consistent way to the problems of health services.

The other type of centre, the centre which is founded specifically to deal with health services problems and out of this perspective

calls upon the particular contributions of any scientific discipline solely in response to particular needs, is numerically in the minority. This second type of centre, however, is usually larger in size and deals more consistently with health services research. The hospital problem area has been the most frequent launching pad for this type of centre.

The university-based Centrum voor Ziekenhuiswetenschap in Belgium (p. 87), the hospital-based Nationaal Ziekenhuisinstituut (p. 401), and the university-based Instituut voor Ziekenhuiswetenschappen (p. 394) in the Netherlands, the hospital-based Deutsche Krankenhausgesellschaft (p. 289) and hospital-based Deutsches Krankenhausinstitut (p. 290) in the FGR are the exponents of this group. France has not generated its counterpart in this respect as the national institutes which we find in that country each deal with the hospital problems from its own point of view and as such preclude the emergence of a separate centre.

No particular general trend could be observed with respect to the generation of particular centres in response to particular specialized problems. Thus, only in the Netherlands does one find a cluster of research centres dealing with the problem areas of family practitioners and primary care medicine.

An analysis of the health services research centres also involves the question of viability. As has been indicated above many centres only have a very small professional staff of two to three full-time professionals which hardly allows for a continuing and coherent research effort. On the other hand, however, many of these small centres are able to fall back upon well-established university departments or upon some other line of activity. This means that sometimes research activities tend to be fitful but it would be a mistake to dismiss the potentiality of such centres or the professionals working in them. The merging of such centres is not the answer, the disciplines involved usually being too disparate. The only possibility would seem to be along the routes of the organization of inter-centre research projects based on *ad-hoc* arrangements.

Such a strategy would require a small coherent health and/or research policy which would indeed be beneficial to keep the researchers within the health services field and might even deliver a better research product. This approach can already be observed in France where the central government tries to interrelate the health services research activities of the researchers associated with dif-

ferent centres. Some initiative in the same direction can also be observed in the Netherlands and to a lesser extent in Belgium. In the FGR no such type of co-operation could yet be formally observed though it is likely to be forthcoming in the future.

HEALTH SERVICES RESEARCH PROJECTS

The range of problems and the scope of investigation of the 324 projects identified in this document is quite divergent. A survey by problem area contains insufficient information as it has not been possible to plumb the depth of investigation to any extent. In the same way as the centres are organized either by traditional university discipline or by general problem area, so do the projects themselves relate to either the application of particular disciplines to health service topics or to particular health services problems covered by a range of disciplines. A third dimension which is relevant to the present analysis of health services projects is the methodology applied. The fact that many research centres are university based is indicative of the high educational content of several projects: some of them are based on term papers or classroom seminars, some others are the result of organized research endeavours with a view to course development, some of them are products of theses on the graduate and doctoral level.

The paradigm presented in Fig. 1 (p. 51) attempts to structure the problems according to a set of interrelated subsystems.

Although it is undoubtedly very difficult and highly subjective to weigh the projects by depth of analysis and methodology applied, the following list attempts to do so. All projects identified in this investigation are classified up to three times by problem area. If there are no remarks the implication is that it is a reasonably straightforward methodology with average depth of analysis. Deviations in both directions and from both points of view are indicated.

Population

Although most population-related health services research projects are done with a view to planning or organization, several projects deal with the analysis of population characteristics as such. Each

country has tried to come to grips with the development of indicators to monitor particular population group.

Health indicators (p. 123). Primarily a literature survey.

Social indicators of health (p. 131). Primarily a methodological development.

Toward social planning in developing countries; indicators of social justice; method of health sector analysis (p. 315). A methodological approach and implementation for two South American countries.

Housing conditions and well-being (p. 348). A search for surrogate indicators.

Research on public health indicators and their trends (p. 214). Primarily methodological and developmental.

Population health care need indicators: health interview survey (p. 434). Primarily an implementation test.

While the Belgian and French projects are more theoretical, the German and especially the Dutch projects are more concerned with implementation and results.

Also several specific population groups have been considered such as:

Handicapped

Handicapped persons in society—a sociological approach (p. 117).

The development and implementation of an automated record for handicapped persons and their health care needs (p. 220).

Migrant population

Health and health care of migrant workers in selected EEC countries (p. 127). Primarily exploratory.

Health care problems of migrant workers in an urban area (p. 219). Implementation oriented.

Most projects stumble over the enormous implementation problems involved with the continuous monitoring of large population groups.

Health care consumers

When particular health care consumer groups are looked at, success has been more pronounced. Numerous consumer-oriented projects are identified.

Morbidity surveys in general or restricted

Hospital discharge abstract analysis: a tool for professional activities survey (p. 112). Survey of clinical morbidity.

Health survey of the Leyden student population (p. 428).

Continuous morbidity statistics (p. 437).

Preventive health care: consequences with respect to the structure, the management, the organization and the information requirements of a health care system (p. 324). Theoretical treatise to deal with the management of consumer groups' needs.

A medico-statistical study on medical care problem areas based upon the experience of a medical care research centre in Cologne (p. 327). Survey of care centre morbidity.

The morbidity of hospital-emergency care patients (p. 214).

Psychiatric morbidity survey in a general practitioners' practice by use of a two-year continuous activity survey (p. 424).

Disease and illness behaviour: an exploratory study into the morbidity pattern of a rural general practice (p. 444).

The one hundred nuclear families study (p. 444). The evolution of family morbidity.

Identification, detection, treatment, and prevention of high-risk families in general practice (p. 445).

Family and health care in Dorp by Stad (p. 424).

A survey of the health problems of a fast-changing urban population (p. 225).

Sociological study of health care needs (p. 226).

Survey of institutionalized visually handicapped children (p. 448).

Housing conditions and wellbeing (p. 348).

Mental health needs of in-patients in general hospitals (p. 125).

Need for emergency mental health care in metropolitan Brussels (p. 125). Operational solutions are also looked at.

Multifactorial prevention of coronary heart disease (p. 115). An experiment to survey all coronary disease problems.

An inquiry into mental retardation (p. 453).

Development of psycho-social diagnostic instruments (p. 428).

Includes a survey of stress problems in a suburban population group.

All projects are rigorous surveys of one type or another. Many have led to additional projects to test particular hypotheses or to improve the deployment of particular facilities. Dutch and French efforts in this direction are furthest developed.

Sociological analysis of health care consumer groups and their behaviour with respect to health care provisions

French and Belgian studies in this respect are primarily developmental and theoretical, Dutch studies are more pragmatic and implementation-oriented.

Medical sociology in Europe (p. 118).

Medicine, illness, and society (p. 224).

Health and illness: an analysis of a socially based model (p. 225).

Socio-cultural determinants of illness and health behaviour (p. 119).

Attitudes and behaviour regarding health and disease (p. 126).

Geel family care research project (p. 127). Which contains an important patient study and foster family study component (p. 128).

Motives determining use and abuse of alcohol, tobacco, and drugs among high school students (p. 131).

The real world of medical care demand (p. 227). A short sociological analysis.

Popular concepts and practices relating to health (p. 232).

Popular practices on hygiene and the prevention of illness (p. 232).

The consumption of drugs: a psycho-socio-economical analysis (p. 229).

Family and illness (p. 422).

An attempt to evaluate the transition from a solo general practitioner into a health care centre or group practice as seen by the patient (p. 423). This study is not only sociological but also anticipates a cost evaluation.

Investigation into role problems of chronic patients (p. 434).

Investigation into problems of families of psychiatric patients (p. 435).

Maximal medical care (p. 436). An investigation of the patient behaviour *vis-à-vis* non-organic or incurable illnesses.

Ageing, social relations, and health (p. 449). A very rigorous investigation covering many dimensions.

Veenendael project (p. 457). An investigation into the patient's decision to select a particular general practitioner.

Social aspect of health and illness (p. 433). A thorough, well-documented analysis.

Socio-cultural variables in the aetiology of health disturbances (p. 429). Links morbidity surveys to sociological variables on a sample of patients.

Determinants of the use of medical care (p. 105). A survey of possible factors of influence and their feasibility with a view to experimenting.

German studies are all related to particular types of health care provisions and will be referred to below.

Health manpower

Problems related to physicians, specialists as well as general practitioners, and nurses have been extensively investigated. Four viewpoints emerge:

1. Supply and demand of manpower.
2. Time and work studies and organizational arrangements including projects to induce co-operation among different professionals.
3. Sociological studies to investigate role and/or functional behaviour.
4. Training and education.

The depth of analysis found back in these projects is rather disparate and there seems to be a tendency for each country to concentrate on some topics to the exclusion of others.

Medical specialists

Supply and demand

A survey and forecast of the number and specialty of Dutch specialists (p. 416). A data reference work.

The physician facing the Common Market (p. 101). Includes specialists as well as general practitioners and investigates some sociological aspects.

The growth of medical manpower (p. 103).

Structural shifts in the medical profession in France (1963-8) (p. 230).

Medical demography in France and in the Federal German Republic (p. 231).

A tentative approach at planning for health professionals (p. 223). Primarily a short theoretical treatise.

Women in private practice: some demographic hypotheses (p. 230). Primarily a short theoretical treatise.

Time and work studies and organizational arrangements

Structure and organization of medical and nursing care (p. 333). Primarily a theoretical treatise.

Medical staff organization in hospitals (p. 111). Primarily a comparative evaluation.

The position of the hospital physician in the countries of the EEC (p. 112).

Medical control in social security (p. 115). Covers both types of physicians and investigates the impact of physicians upon health insurance policy and strategy.

An inquiry into the professional relationships among physicians involved with myocardial infarction patients (p. 435).

Consultation in mental health care (p. 436).

Medical practice and the hospital system (p. 224). Investigation of the feasibility of hyperspecialization.

Economic analysis of the medical profession's activities (p. 200). A very thorough and well-documented analysis, includes both types of physicians.

Time budget of Belgian physicians (p. 102). A straightforward work study.

Sociological studies to investigate role and/or functional behaviour

An inquiry into attitudes of three categories of medical specialists (p. 446).

The Belgian physician: self-evaluation of role components (p. 121).

Sociological problems of the medical profession (p. 350). A collection of short studies.

Professional expectations and professional motivation of Ger-

man physicians (p. 352). A thorough, well-documented analysis.

Conflict between physicians and the social security agency (p. 228).
An analysis of the physicians' arguments.

Training and education

Career choices at Nijmegen: university medical students (p. 447).

The sociology of decisionmaking (p. 227). An analysis of the process of reorganizing the medical curriculum.

Medical school curriculum and regional patient care: a model for Osnabrück (p. 339).

The formulation of a medical school curriculum based upon the patients' expectations and the image of the medical profession (p. 340).

General practitioners

Many aspects of general practitioners are dealt with in the studies on medical specialists. Special attention has been paid in Belgium and the Netherlands to this class of professional.

Supply and demand (p. 23)

Time and/or work studies and organizational arrangements

Group practices are extensively dealt with in the Netherlands and will be discussed separately (p. 35).

Time budget of Belgian physicians (p. 102).

Influence of physician payment systems on the utilization of medical care (p. 104). A thorough economic analysis of physician activity patterns.

Survey of work patterns of general practitioners (p. 200).

Medical practice and medical referral with respect to cancer patients (p. 429).

A typology of the general practitioner's practice (p. 425).

Sociological studies to investigate role and/or functional behaviour

The patient-physician relation has received much attention especially in the Netherlands.

Communication patterns of health professionals (p. 446). Covers as well home care nurses and social workers.

The general practitioner-patient relationship (p. 455).

The situation of the general practitioner in Belgium (p. 117). A sociological investigation.

Patient's evaluation of general practice (p. 119).

Attitudes of the medical profession towards home care (p. 121).

General practice and mental health care (p. 131). How physicians react to mental health problems.

Stability and trends in the level of physician authority: a sociological exercise in physician-patient relationship analysis (p. 351).

Women in private practice: some demographic hypotheses (p. 230). Investigates role problems of women physicians as well.

Training and education

Changing the education of the general practitioner (p. 424).

Nurses

Nursing management and/or planning can either look at the creation of stimulating working conditions or at the solution of problems emanating from supply and demand of the labour force from a national, regional, or institutional point of view. In both cases the first stage involves the identification of problem areas. As such the labour market for hospital nurses has been extensively mapped in the Federal German Republic, the Netherlands, and Belgium.

It is interesting to note that the four countries are actually running experiments with a view to alleviating the nursing problem. The German experiment concentrates on influencing the labour market external to the hospital, for example, by organizing supply and demand, by actively campaigning to attract more nursing candidates, while the Belgian, French, and Dutch experiments try to solve the problem by an internal reorganization of the nursing work patterns.

Supply and demand

The supply of nursing personnel (p. 120).

A survey of supply and demand of hospital personnel (p. 335).

The nurse shortage in the German hospitals (p. 336).

The Dutch survey is done yearly on a continuing basis (p. 401).

Time and/or work studies and organizational arrangements

Work study in the nursing department in hospitals (p. 414).

Job analysis in hospitals (p. 441). Includes a reorganization model.
Job analysis and optimal manpower deployment in hospitals (p. 338).

Career profiles of nursing personnel (p. 119).

Senior positions in nursing (p. 439).

The role of the head nurse in the opening of a new hospital (p. 334). A short treatise.

An analysis, development, and quantification of alternative nursing unit policies (p. 334).

Organizational structure and physical layout of nursing units (p. 335).

Shift work in patient care (p. 336).

A planning model for nursing activities (p. 426). Includes the implementation aspects.

The health care professions, factors relating to their organization and their job content (p. 222). Includes a basis for a health manpower planning model.

Changing nursing care (p. 425). Description of the Dutch experiment.

Systems analysis of the nursing unit (p. 113). Description of the Belgian experiment.

A campaign strategy to attract nursing personnel (p. 337).

A concept of a nursing recruitment technique (p. 354). Descriptions of the German experiments.

The institutionalization of a collective work force (the case of a psychiatric clinic) (p. 223). Description of a French experiment.

Sociological studies to investigate role and/or functional behaviour

Research into the objectives and the activities of the nursing profession (p. 337).

The nursing profession in the hospital (p. 231).

The analysis of change in the hospital nurse's profession (p. 231). A thorough sociological analysis of working conditions.

Attitudes and opinions about the nursing profession in Germany (p. 353). An opinion survey.

Training and/or education

Nursing education (p. 339).

Other health professionals

The studies and/or projects are quite limited and primarily restricted to the Netherlands.

Evaluation of an experiment introducing nursing aides in home care (p. 438).

Geel family care research project (p. 127). Several sections cover the foster families involved.

Function and role of the home care nurse (p. 451).

The role of the psychologist in primary care (p. 456).

Preproject study on the co-operation between home care nurses and mental health service (p. 459).

Social work in the health service (p. 347).

Organizational arrangements

Hospitals, general and psychiatric, still draw undoubtedly most attention. The Netherlands and to some extent Belgium also investigate the general practitioners. Out-patient clinics and nursing homes are only looked at in the Netherlands. Other programmes are sketchily covered.

Organizational arrangements in general

Few projects take an over-all view but concentrate rather on particular types of facilities.

Supply and demand

Numerous projects deal with the problem, national, regional, or local, of supply and demand of facilities. These are not considered to be planning projects as no objectives or alternatives are looked at but only the distribution or redistribution of facilities is investigated.

The planning of intramural health care in the Gouda district (p. 409).

Regional analysis of medical consumption, need, and supply in Belgium (p. 103).

Analysis of supply and demand of medical care (p. 104).

Spatial analysis of health care provisions in economically depressed areas (p. 100). A documented analysis concentrating on one region.

Cure and care organizations for the aged in the Eeklo region (p. 116). A documented analysis concentrating on one population group in one area.

A prognosis of medical production and medical utilization during the Sixth Plan 1971-5 (p. 197).

A comparative analysis of projections made and actual figures of medical care utilization (p. 197). A linear programming formulation of a projective approach and its evaluation.

Medical utilization (p. 194).

The impact of demographic factors upon the evolution of medical utilization (p. 195). Both projects are the best documented ones with respect to demand of health care in the countries under investigation.

Analysis of public health facilities needed in a regional principal town (p. 219).

Analysis of regional differences in the health care system (p. 199). A thorough and well-documented investigation of the impact of availability upon consumption.

Time and/or work studies and organizational arrangements including projects to induce co-operation among different types of organizational arrangements

All analysis of referral patterns among different organizational arrangements is reported here.

Analysis of health insurance patient referrals by 122 Dutch general practitioners (p. 437).

An inquiry into referral patterns (p. 456). An investigation of general practitioners' referrals into all other types of care in function of availability.

Medical referral patterns for socio-economic classes in view of medical care availability (p. 216).

Improved quality through prognostic-epidemiological research (p. 429). This unique project tries to evaluate the outcome of alternative courses of action in medical practice.

The Swedish regional health care system (p. 322).

Organizational metamorphosis of the health services in England since the beginning of this century (p. 323).

Sociological studies to investigate role and/or functional behaviour

Some of the referral studies touch on sociological determinants.

Introducing change in health care: a proposal of methodology (p. 213). An investigation of why and how referral patterns may be influenced.

Hospitals

Hospitals are still very much a popular issue among health services researchers due not the least to the fact that they are undoubtedly the best organized health care arrangements. Two countries have developed specific research institutes to deal, although not exclusively, with hospital problems: the Netherlands (p. 401) and the Federal German Republic (p. 290). Many ongoing, continuing services offered by these two research institutes are not specifically covered in this report although these always depend on a certain research effort.

Supply and demand

Determining need for paediatric beds for 1980 in metropolitan Brussels (p. 122).

Hospital planning for the Province of Brabant (p. 123).

Rationalization of the Catholic hospitals in metropolitan Brussels (p. 124).

Planning health care facilities in the Province of Luxemburg (p. 124). Only hospital supply and demand is investigated.

Criteria for the rationalization of hospital care (p. 122). A theoretical treatise which highlights the factors of influence.

Criteria for national hospital planning (p. 122). Two experiments are included in this still primarily theoretical analysis.

Determining the hierarchy of urban centres in terms of social economic level, accessibility, and availability of health care (p. 126). Utilization rates and flow data are looked at to regionalize hospital facilities.

Structural changes in the North Limburg hospitals (p. 416). Shifts in population statistics and facility statistics are analysed to restructure availability of beds.

Health care regionalization (p. 420). A programming method is developed.

Evaluation of provisional provincial plans (p. 430). An analysis of the programming criteria applied in these plans.

Study of the regional hospital facilities in north-west Weluwe (p. 442).

Regional hospital planning (p. 312). A dissertation covering different programming techniques for regionalization of hospital facilities.

Hospital planning in the north-western region of the Dusseldorf-Mettmann district (p. 313).

A projection of hospital bed shortage up until 1985 (p. 313).

A hospital plan for 1972 (p. 314). A crude inventory of supply and demand discrepancies.

Organizational arrangements including its legal aspects and any efforts to induce co-operation

Management and operational improvement studies. *Note.* Typical cost studies will be referred to below (see p. 40).

Organizational studies

Comparative study of hospital legislation in the EEC (p. 110).

Need for emergency services in metropolitan Brussels (p. 125). The organization of emergency services is surveyed.

Planning and financing of hospital facilities (p. 113). An analysis of the official regulations regarding hospital construction.

Criteria for regionalization of specialized hospital services (p. 123).

Hospital development programmes for different regions (p. 123). An organizational analysis of two hospitals.

Research on health care and hospital organization (p. 326). The impact of organization upon recovery from illness.

Hospital co-operation: organizational and juridical opportunities (p. 332).

The single class hospital (p. 330). An organizational evaluation.

The hospital organization and its hierarchy (p. 210). A theoretical treatise which develops a mode of reference to characterize hospital organizations, staff, and patients.

Technical, economical and social differences between public and private hospitals (p. 212).

Analysis of the organization of a peripheral hospital (p. 410). In-

investigates also the organizational prerequisites for co-operation between this hospital and the university hospital.

Coronary care units in the Dutch hospitals (p. 414).

Low care units in hospitals (p. 419).

Innovating legal structures of hospitals (p. 421).

Management studies

International study on hospital utilization (p. 124). Primarily length of stay and admission frequencies are looked at in eight regions in eight countries.

Hospital management by objectives (p. 303). A theoretical treatise.

Hospital management caught between medical and managerial objectives (p. 303).

Hospital management: theory and applications (p. 304). Numerous examples illustrate the notions put forward.

The implementation of a management by objectives for hospitals, based upon the criterion of urgency of medical treatment (p. 305). Primarily theoretical.

Management principles of hospital admission procedures (p. 332).

Length of stay analysis in acute care hospitals (p. 333).

Inter-hospital comparison of hospital management statistics (p. 341). Also includes cost data.

A methodology towards the development of a German hospital index (p. 341).

Comparative study of average length of stays in public and private hospitals (p. 215).

Availability and use of hospital facilities: an orientation study as to the use made of hospital beds (p. 430).

Annual report on medical activities in general hospitals (p. 443).

Physical improvement

Hospital building for developing countries: a systems approach (p. 115). Concerns itself with physical layout.

Development of hospital facilities under conditions of limited resources (p. 111). Expands upon previous project.

Tall or low structures for general hospitals (p. 418).

Analysis of hospital construction costs (p. 432).

Analysis of the floor space utilization of acute care general hospitals (p. 432).

Hospital morphology (p. 344).

Operational improvement

Computerized medical record (p. 109).

Computer application for managerial purposes in hospitals (p. 109).

A survey of EDP applications in German hospitals (p. 342).

EDP in medicine, state of the art, future developments (p. 342).

A report on the feasibility of data processing in medicine (p. 343).

The development of an automated standardized medical information system for hospital admission purposes (p. 221).

Applicability of computers in the clinical chemistry laboratory (p. 431).

Hospital fire prevention (p. 431).

Only two projects deal with the evaluation and the operational improvement of the hospital care process:

The development of a method to determine the effectiveness of medical care processes (p. 427).

Measurement of hospital care processes (p. 420).

Sociological studies to investigate role and/or functional behaviour

The sociological framework surrounding in-patients with special reference to conflicts (p. 126).

A socio-demographic analysis of hospital provisions in the 'Het Gooi' region (p. 452). Investigates the prerequisites for hospital co-operation.

The modern hospital on a human scale (p. 457). Includes as well a very heavy planning dimension: how to bring about different alternatives.

The single class hospital (p. 331). A sociological evaluation.

Hospital communication (p. 348). A communication patterns analysis.

Hospital patients: limits of medico-technical hospital care; a new approach (p. 349). An experiment to formulate guidelines to humanize the hospital.

The image of the German hospital (p. 346).

Opinions about hospitals (p. 347). Both are opinion surveys.

Changes in the public hospital and hospital policy (p. 211). An analysis of the driving forces behind hospital development.

The hospital system; evolution and structural changes (p. 213). An analysis of the sociological driving forces.

A psycho-social analysis of the relationship between hospitals and patients (p. 228).

Hospital references in the popular press (p. 233). A content analysis of thirteen periodicals.

The Dutch hospital projects are application-oriented, they usually include an implementation phase.

Other institutional arrangements

While one can state that hospitals are a popular topic, other types of health care institutions hardly receive any attention at all. Only one project could be identified with respect to out-patient clinics.

Scheduling in out-patient departments (p. 427).

Although psychiatric care hospitals are often taken together with acute care hospitals, three projects could be identified which research these specifically:

An exploratory research of three mental hospitals (p. 118). An analysis of in-patient load *vis-à-vis* organization, primarily a survey of opinions.

A report on psychiatric care in Bayern, including the education of personnel (p. 329).

People's opinions about psychiatric and medical facts or problems (p. 347). An opinion survey of attitudes towards psychiatric care patterns.

One project deals very extensively with family psychiatric care:

Geel family care research project (p. 127). It studies patients, the foster families, as well as the community's and outsiders' opinions.

Extended care facilities, rehabilitation centres, post-hospital care, health care centres, etc., are very sporadically investigated:

Rehabilitation centres

Community rehabilitation of medium-term care hospital patients (p. 419). The evaluation of an experiment.

Analysis of a rehabilitation programme (p. 330).

Extended care facilities (p. 326).

Post-hospital care centres

Pre-project study on the evaluation of the functioning and organization of post-hospital care in Amsterdam (p. 450).

Health care centres

The evaluation of health care centres (p. 443).

Nursing homes

Adjustment in nursing homes (p. 448).

Assimilation of elderly persons in nursing homes (p. 448).

Nursing homes in the Netherlands (p. 440). A survey of patients and problems.

Institutes for the mentally retarded

Organization and technology in institutes for mentally retarded: an empirical and comparative analysis (p. 451).

Non-institutional organizational arrangements

Non-institutional organizational arrangements are seldom investigated with the exception of general practice in the Netherlands. The main reasons seem to be: methodological difficulties; lack of data and/or access to data.

General practice (see also p. 25)

The family, the patient, the hospital, and the general practitioner (p. 421). Based upon a sample, the author discusses many problems and puts forward several controversial suggestions.

Can the general practitioner prevent myocardial infarction (p. 423)?

Medical utilization and the patient's perception of his general practitioner (p. 425).

The general practitioner's instrument bag related to his professional activities (p. 425).

Selecting a new physician (p. 435).

Factors influencing the development of group practices and health care centres (p. 437). Both projects investigate the population's choice *vis-à-vis* physicians, group practices, and health care centres.

The evaluation of co-operation between general practitioners, social workers, and home care nurses (p. 442).

Family therapy in general practice (p. 445).

Evaluation of a pseudo-group practice (p. 447).

Caring together (p. 454). Investigates role problems in a co-operation of family practitioners and home care nurses.

Measuring the degree of functional disability: a stepping stone for the family practitioner's care for old-age patients (p. 454).

The effects of multidisciplinary co-operation (p. 455). Investigates the criteria for group practices.

A medical decision model (p. 455). Investigates what patient selects what physician.

The general practitioner's professional activities (p. 456). A survey of several efficiency improvement oriented projects.

Preventive medicine and preventive programmes

The conceptualization, the organization, and the management of an automated vaccination record file (p. 222).

Systematic and periodic medical examination: critical and analytical study of the available systems proposed (p. 220). Concentrates on the medical action programmes rather than on the epidemiological situations.

The development of an information system for preventive care purposes (p. 221).

Analysis of alternative programmes to prevent suicides, a PPBS approach (p. 209).

School and child care

Evaluation of the effectiveness of school health programmes (p. 116).

Health protection of schoolchildren (p. 210). A PPBS approach.

The public health and social impact of different types of child care centres (p. 208). A PPBS approach.

Home care organizations

Functioning and structure of the White-Yellow Cross Organization (p. 440).

Opinions about and use made of Cross associations (p. 450).

Pharmaceuticals and/or prescriptions (for example, lenses)

The provision of medical care, drugs, and other therapies, especially these provided by opticians and paid for by public health insurance (p. 329). A survey of legal restraints.

The pharmaceutical market and prescription drugs in the Federal German Republic, Cross national comparisons (p. 314). Includes cost data, distribution patterns, quality control differences and utilization rates.

The drugs and prescriptions market in the Federal German Republic (p. 316). An analysis of supply and demand markets.

The impact of socio-economic factors upon medical drug consumption in 1970 (p. 196). A very thorough investigation which also includes cost data.

Emergency services

Analysis of a mobile emergency care system (p. 218).

Specific therapies

Psycho-social consequences of a supervised vacation for rheumatic patients (p. 428).

Epidemiological serological research concerning the effectiveness of two anti-influenza vaccines (p. 216).

Leisure-time medicine, sociology, and psychology (p. 355).

An operations research analysis of perinatal care (p. 205). The development and implementation of an evaluation model.

Financing

The analysis of the economic aspects of health services research is most developed in France. All types of health services have been looked at from this angle: hospital care, psychiatric care, medical specialist's care, general practitioner's care, and this from a macro- as well as from a micro-economic point of view. Cost studies are also frequently conducted in view of planning of health services.

A similar interest is also developing in the Netherlands although yet primarily restricted to hospital care and this from a micro-economic point of view. A recent macro-effort, however, seems promising. In the Federal German Republic the cost and/or economic studies concentrate not so much on the expenditure aspects of health care provisions but rather on the income aspects of some health care provisions and on social security schemes, hospital costs, remuneration schemes, and physician payment schemes. In Belgium, the economic or cost studies are rather restricted in scope and only touch as of yet on limited aspects of hospital costs or health care costs as such.

Over-all, a rising interest in cost studies could be established. Major efforts have been started in the Netherlands and in France to collect the data necessary to support these extensive cost studies. Both efforts are sponsored by governmental agencies.

Health care coverage and health insurance oriented studies

Health insurance studies look at the redistribution aspects of health coverage costs and its economics.

Macro

Income and expenditure of Belgian social security 1976-80 (p. 106).
The development of a predictive model.

Reflecting on social security policy (p. 100). An analysis of several perceived shortcomings.

Health insurance in the EEC (p. 114). A comparative analysis of coverage patterns.

Medical background of handicapped persons and its effect on the poverty of the family (p. 217).

The effect of health insurance upon the redistribution of disposable income (p. 193).

The health care coverage of the population under the different social security programmes (p. 217).

Physicians and health care in social security systems: a comparison between the Federal German Republic, England, and the USA (p. 319).

Current problems of health insurance: a survey of different viewpoints (p. 319).

The pharmaceutical industry and the future development of social health insurance (p. 328). An analysis of problems in relationships.

Reforms long due: co-operation and cost reimbursement in health insurance (p. 345).

Micro

Alternatives for the implementation of a system of social security (p. 441). A proposal for reorganization of the running of the actual social security network.

Comparison of medical fees in Europe (p. 102).

Physicians' income in Europe: comparison of the level of earnings (p. 108).

Health insurance in the Federal German Republic; important aspects for the general practitioner (p. 320).

Physician payment schemes (p. 321).

Models of physician payment schemes in insurance-based medical care (p. 322). Investigation of alternative contracts.

Health insurance and conventionalized physicians (p. 345). A comparative analysis of conventionalized and non-conventionalized physicians.

Cost and cost accounting studies

Numerous cost studies have been done. Many cost data is also investigated in other projects (see organizational arrangements, p. 28).

Macro-cost studies

Cost of personal health care (p. 105). An identification through literature survey of relevant factors.

Macro-econometric model (p. 411). A very thorough and extremely well-documented health care cost model.

A projection of health care costs for the period 1950-80 (p. 417).

Cost-benefit analysis: an instrument for rationalizing the allocation of funds for educational and health investments (p. 306). A thorough theoretical analysis applied to a programme in a developing country.

Study on the economics of health (p. 190). A very thorough analysis.

Health economics (p. 192). A small-scale effort to relate health to the national economy.

Relationship between health care expenditure and mortality and morbidity (p. 193). A methodological approach.

National health accounts (p. 194). The development as well as the implementation.

Analysis of the medical care system (p. 198). A thorough statistical analysis of regionalized social security cost data.

The development of indicators to measure the economic consequences of public health improvement (p. 200).

Study on the costs to protect human life from a medical point of view (p. 201). A thorough and well-documented analysis.

Economic impact of the health care sector (p. 203). A theoretical treatise of evaluation methods.

Micro-cost studies

HOSPITAL COST STUDIES

Analysis of hospital costs (p. 417). A thorough and well-documented model to track and analyse hospital costs.

Hospital cost model (p. 410). An input-output model to identify hospital costs centres (includes two examples).

Cost evaluation and financing of hospital activities (p. 307). A cash flow management approach.

The development of a uniform hospital accounting reporting scheme (p. 308).

A new medical fee and hospital cost remuneration scheme (p. 311). A proposal to substitute for flat hospital rates.

Recommendations towards a new hospital financing mechanism (p. 317).

Hospital costs and medico-technical progress (p. 317).

The cost of illness in the hospital: a proposal to evaluate hospital costs by two converging methods (p. 202).

Treatment costs of multiple trauma patients at the Raymond Poincaré Hospital (p. 206).

Economic aspects of mental health care (p. 107). Psychiatric hospital care costs are studied.

Psychiatric care hospitalization costs in Bourgogne and Franche-Comté (p. 204).

COST STUDIES ABOUT OTHER ORGANIZATIONAL ARRANGEMENTS, PROGRAMMES, OR THERAPIES

The cost of cardiovascular diseases (p. 101).

The cost of X-ray diagnosis in in-patient and out-patient care (p. 101).

Cost-benefit analysis of a health care programme (p. 306). The case of mother and child care is investigated.

A method to determine the financial needs to implement the new accreditation regulations for medical personnel (p. 309).

Economic analysis of cervical cancer programmes and preventive care (p. 203).

A PPBS approach to perinatal care (p. 204).

Economic analysis of the effects of chronic bronchitis and nicotine addiction upon job absenteeism (p. 209).

The economic and social costs of chronic bronchitis in France (p. 207).

A cost-benefit analysis of mental illness programmes (p. 207).

An economic analysis of a nightly vertebral traction therapy programme against scoliosis (p. 208).

Economic efficiency analysis of the BCG vaccine against tuberculosis (p. 209).

Guidance clusters

Two types of projects are identified in this group: either planning projects which attempt to formulate and investigate alternative actions or programmes or control projects which attempt to formulate control methods and/or techniques to regulate and redirect actions or programmes started in the past.

Specific projects which involve the spatial reallocation or expansion of existing types of health care facilities based upon the analysis of existing utilization trends and developing demographic shifts have been discussed elsewhere (see organizational arrangements p. 28, supply and demand).

These only involve primarily technical programming of particular programmes or organizational arrangements.

Planning projects

Planning projects are either consumer-oriented or provider-oriented.

Consumer-oriented planning projects

Social planning (p. 107). A literature survey on methods and techniques.

Organization of decentralized health services in Latin America (p. 344). Particular attention is paid to popular participation and integration of health policies with nutritional and agricultural policies.

Regional planning and its relation to health care delivery (p. 355). Special attention is paid to the importance of regional planning on the health status of the population. Some comparison approaches are included and a tentative implementation effort is put forward.

Health planning and economic planning (p. 211). A macro-model for decision making in the health care area in view of economic planning is developed. Little attention is paid to the driving forces proper to the health care area.

Provisions-oriented planning projects

A prospective analysis of systems of health care (p. 108). An investigation of the sociological driving forces which influence the development of curative health care.

Integrated medicine: its objectives and effectiveness (p. 109). Investigates possible alternatives to the delivery of medicine based upon some innovative factors of influence such as patient and physician comfort and satisfaction.

Feasibility study of using systems analysis for planning in health care (p. 418). The development of a decision model for planning health care and the testing of the model.

Health care priorities (p. 408). Identifies priorities based upon an incomplete analysis of operations of existing facilities in a particular region.

Patients, hospitals, and health care towards the year 2000 (p. 421). Develops a scenario for health care delivery systems for the year 2000.

Health planning; the development of an information system, a simple case-study in the Departamento del Valle del Cauca, Colom-

bia (p. 315). Reports on the experience gained with one particular planning tool (linear programming formulation).

Analysis of problems and critical areas for reform of the German health care system (p. 323). A government attempt to formulate alternative courses of actions based upon a two-stage delphic approach.

Is modern health care a Utopia (p. 324)? The development of a conceptual theoretical model (including organizational, legal, and educational aspects) and a strategy to implement this model.

A model for an integrated health care system for the Cologne-Chorweiler city (p. 331). A planning model to reorient existing health care delivery programmes using a strategy of least resistance.

Project with respect to the analysis of the health care system (p. 351). A search for alternative working conditions for health care workers (primarily nurses).

Health policy in the Federal German Republic: an analysis and recommendations for change (p. 318). A thorough analysis of the existing system and the development of alternative courses of action which should be incorporated in the policy of the German Federation of Labour Unions.

Preventive health care or patient care: consequences with respect to the structure, management, organization, and information requirements of a health care system (p. 324). A theoretical analysis from the patient's point of view of one possible alternative.

Projects on controllability of the health services

Surprisingly few projects could be identified which deal with the guided development of health services. The main reasons seem to be (a) a lack of general understanding of how health services operate, and a lack of data, and (b) methodological difficulties.

Health services research in the EEC countries (p. 110). Present document identifies health services research projects and attempts to identify the driving forces with respect to centres, topics, research policy, and strategy.

Controllability of the health care system (p. 414). A commercial firm's analysis for the Minister of Health, zeroing in on hospital costs, of reasons why health care costs run out of hand. Some simplified models are included. Short-term recommendations for change are developed.

Trend analysis and controllability of hospital costs (p. 308). A dissertation which thoroughly investigates hospital costs developments and includes some recommendations to control same costs.

Towards a service industry economy; a systems and political analysis of hospital care costs (p. 309). A thorough analysis of hospital cost development and the proposal of a single cost control mechanism in this respect based upon an alternative medical fee and hospital cost reimbursement scheme.

Recommendations for a new hospital financing mechanism (p. 317). A documentary and rather polemic evaluation of the hospital financing law of 1972, which includes some recommendations for change.

Hospital costs and medico-technical progress (p. 317). An identification of cost-pushing factors and some recommendations for change to keep these under control.

Qualitative and quantitative analysis of the growth factors for health care expenditure (p. 192). A broad-based attempt to model and test the relationships which characterize health care costs with a view to the development of alternative actions and strategies to control these. Incomplete so far.

The fact that particular topics in this preceding list do not seem to be investigated in particular countries does not imply that no research at all has been done on them in the particular country. This survey only covers the last five or six years. As an example all time studies on Belgian nurses' activities were done before this period. Also some projects which are research projects in some countries are part of long-term ongoing service activities in other countries.

Thus, many hospital management studies in the Netherlands, and many cost studies in France are ongoing. With respect to the projects covered in this investigation some peculiarities certainly emerge. Most of these are already indicated in the preceding list, but there are others.

Facility-oriented health care planning projects are almost non-existent in France. The existence of a centrally developed and politically determined *carte sanitaire* or health care facilities plan precludes the need for any such research effort. However, several programme-oriented health planning projects have been conducted in that country sometimes involving particular problem groups: from a medical, particular diagnosis, or sociological (eg preschool-children, migrant workers) viewpoint. Hence also the concurrent

effort in developing social and/or health care indicators rather than mere data-banks on existing utilization patterns.

A similar trend toward programme-oriented rather than facility-oriented health care planning is also emerging in the Netherlands and, although yet in an experimental stage, in Belgium.

Besides common topics such as nurses' activities, health facility programming, and cost studies, each country still has its own particular interests.

In Belgium for instance the position of the physician as such has received particular attention, more specifically his economic position, his attitudes, and his perception towards these. On the other hand, little attention is paid towards effectiveness, individual as well as collectively, from an organizational point of view, within the health services system.

In the Netherlands the primary care physician, group practices, and integrated primary care teams have been extensively investigated.

Sociology-oriented projects investigating the attitudes and role perceptions of patients, nurses, and physicians, are also relatively more numerous in the Netherlands than in the other countries under investigation.

Several projects have also been started with respect to planning of health services programmes: not so much the reallocation of existing facilities, although such research projects are not totally excluded, but rather the development of new alternative plans for providing integrated health care interlinking existing health care institutions with new anticipated and innovative types of health care facilities.

In the Federal German Republic, the social security aspects of existing health care programmes have received particular attention. The whole problem area of how to deal with the existing nursing shortage has also been extensively investigated by the different parties involved: nursing associations, hospital federations, and the Federal Government.

A recent interest could be identified in tackling the problems of hospital bed capacity, construction, and spatial distribution. This is interesting in view of the several planning decrees which are actually on the drawing-boards or in their first phase of implementation.

The macro-economic aspects of health care expenditures have received widespread attention in France to a much higher degree

than could be found in the other countries under investigation. Much effort has also been spent on the development of flexible, very elaborated data-banks to document and investigate the efficiency of particular health care programmes.

The many Planning-Programming-Budgeting-Systems (PPBS) projects or 'research on budgetary choices' (RCB) projects as they are called in the French adaptation, should be considered from the same perspective.

Nevertheless, this analysis has made it clear beyond doubt that no country has succeeded in investigating and redirecting its health services programmes comprehensively. Projects still tend to be orientated towards facilities or special purpose groups; analysis is very often ephemeral.

There are probably two main reasons for this: *methodological difficulties*: too few scholars are attracted for a sufficiently long time to develop general methodologies applicable to other areas; *lack of observations*: a generally valid frame of reference to look at health services and the myriad factors which influence these is not yet developed and certainly not yet documented.

As an example one can state the nearly complete lack of health care evaluation projects: some evaluation of structure has been carried out but very little process evaluation and almost no outcome evaluation could be found. The Netherlands comes close to process evaluation, the Federal German Republic to health insurance scheme evaluation and France to health care cost evaluation.

These few remarks may stress the need for further research effort and an exchange of experience among the four countries under investigation.

RELEVANCE TO THE UK OF HEALTH SERVICES RESEARCH ON THE EUROPEAN CONTINENT

The answer to the question to what extent health services research in continental Europe is relevant to the UK depends not only on the criteria adopted to determine relevance, but also subsequently on the identification of relevant projects which is not exactly an easy task.

The overriding criterion of relevance can be summarized in the utilitarian viewpoint: what are the potential benefits? If expressed in terms of: 'for whom?' an element of subjective judgement is introduced in the identified parts.

In classifying potential benefits of health services research in continental Europe for the UK the following two main levels and sub-levels can be distinguished:

1. *Exposure* to foreign experience in health services research: general experience; specific experience.
2. *Exchange* and *interaction* with foreign health services research.

The interested UK parties can be grouped in two main categories: (1) sponsors of health services research, and (2) producers of health services research.

A number of feasibility criteria determine whether or not a given interested party in the UK can without undue difficulties relate to and benefit from given aspects of health services research on the European continent.

Reciprocity is a first criterion covering such conditions as orientation, preparedness, and capability of continental counterparts to respond to UK interest.

In realistic terms this includes overcoming language barriers through the use of English as the common language or providing for English translations. A second feasibility criterion is related to *stability* in terms of settings, key-individuals, outlets, and formats of health services research outputs. A final criterion has to do with *critical mass* as an integrating criterion for both reciprocity and stability: on the average only sponsors, settings, or projects with sufficient critical mass provide the conditions to make relevant relations feasible between health services research on the European continent and interested parties in the UK.

In reviewing the relevance to the UK of the health services research efforts surveyed, the feasibility criteria were used as selection criteria whereby the selected sponsors, settings, and projects are discussed by level of benefit for the different interested parties.

Exposure to foreign experience in health services research

General experience

Being exposed to health services research in other countries can be informative, indicative, and explicative for both sponsors and producers of health services research in the UK. Relevant issues in this respect are on the one hand for health services research sponsors comparison to the home situation of the role, place, and spectrum of health services research and of the structures, processes, and determinants for the sponsorship, conduct, and impact of health services research.

On the other hand health services researchers are bound to look for general 'state of the art' aspects like research design, advanced analytical tools, innovative findings, progress in the disciplines addressing the problems. The question for the UK, is whether the cost-benefit ratio of this exposure to general health services research experience in continental Europe can compete favourably with exposure to the North American health services research scene where much more systematic and more detailed documented health services research evidence is available directly in English.

In other words a serious effort to make health services research visible is needed on the European continent to match prevailing expectations.

Specific experience

A high level of benefit is seen in the exposure to the following specific issues:

Health services research endeavours taking the EEC or an EEC country as frame of reference. Given that harmonization is the process chosen to arrive ultimately at an integrated Europe any effort to further knowledge and insights about the EEC and its member-countries is bound to be of interest in particular at the sponsor-level to those involved in policy aspects but also to UK health services researchers interested in enlarging their focus to the European scene.

Health services research dealing with issues which are in the foreground in both the UK and the survey countries. In particular health services researchers can benefit by learning about the approach and

the findings regarding those common problems. Health services research sponsors may consider consultation, concerted efforts or even joint action if confronted with similar common problems.

Health services research settings or projects taking the UK health care scene as an object of study. Being exposed to these endeavours can be a start to exchange and interaction.

EEC-oriented health services research

(a) The following research settings are engaged in EEC-wide studies:

Institute for European Health Services Research at Leuven University, Belgium (p. 91).

Research Unit for the Medical Market at Louvain University, Belgium (p. 92).

National School of Public Health at Rennes, France (p. 173).

Centre of Medical Sociology and Demography in Paris, France (p. 186).

Section of Medical Economy of the Centre for Research and Documentation of Consumption (CREDOC) in Paris, France (p. 187).

Task Force on Hospital Research at Hanover University, Federal German Republic (p. 282).

(b) The following EEC-oriented health services research projects have special relevance in view of possible implications in the health care field of EEC membership for the UK.

The physician facing the Common Market (p. 101).

Comparison of medical fees in Europe (p. 102).

Physician's income in Europe: comparison of the level of earnings (p. 108).

Comparative study of hospital legislation in the EEC (p. 110).

The position of the hospital physician in the countries of the EEC (p. 112).

Health insurance in the EEC (p. 114).

Medical sociology in Europe (p. 118).

Health and health care of migrant workers in selected EEC countries (p. 127).

National health accounts (p. 194).

Medical demography in France and in the Federal German Republic (p. 231).

Physicians and health care in a social security system: a compari-

son between the Federal German Republic, England, and the USA (p. 319).

International study on hospital utilization (p. 124).

(c) The following research settings are engaged in nationwide studies of EEC member countries. The settings mentioned under (a) also qualify in this respect.

For Belgium: Department of Hospital Administration at Leuven University (p. 87); Department of Epidemiology at Leuven University (p. 88); Department of Social Security at Leuven University (p. 88); Group for Study and Research in Public Health (GEDERSAN) in Brussels (p. 97).

For France: Laboratory of Economy and Management of Health Organizations at the University of Paris-IX—Dauphine (p. 168); Section of PPBS and Operations Research at the Ministry of Health and Social Security (p. 174); the Institute of Economic Research and Planning of Grenoble (p. 170); Division of Health Services Research of the National Institute of Public Health and Medical Research (p. 175); Laboratory of Social Psychology in Paris (p. 180).

For the Netherlands: Institute for General Practitioners at Nijmegen University (p. 393); Economic Institute at Leyden University (p. 401); National Hospital Institute in Utrecht (p. 401); Netherlands Institute for Preventive Medicine (TNO) in Leyden (p. 403); Dutch Institute for Family Practitioners in Utrecht (p. 404).

For the Federal German Republic: Research Group on systems research at the Ruprecht-Karl University in Heidelberg (p. 285); German Hospital Institute in Dusseldorf (p. 290); The Institute of Social Medicine and Medical Sociology at Bochum (p. 281); Institute for Social Research of Frankfurt (p. 282); Institute of German Industry (p. 294).

Health services research on common problems

A number of problems studied emerge as common problems in all countries studied as well as in the UK.

A problem has been defined as common if it is addressed by at least one project in all four countries under study and also on the foreground in the UK.

The paradigm presented in Fig. 1 permits to structure the problems under a set of interrelated subsystems and their headings.

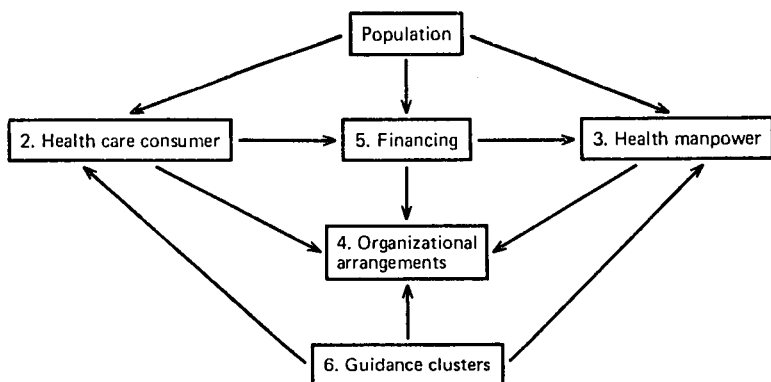


FIG. 1

By using these headings to indicate health services research projects which are common to the UK and the four countries studied the following list appears:

POPULATION

Health care need indicators

Social indicators of health (p. 131)

Population health care need indicators (p. 434)

Towards social planning in developing countries (p. 315)

Research on public health indicators and their trends (p. 214)

HEALTH CARE CONSUMERS

Attitudes and opinions

Social cultural determinants of illness and health behaviour (p. 119)

Attitudes and behaviour regarding health and disease (p. 126)

Popular concepts and practices with respect to health (p. 232)

Popular practices on hygiene and the prevention of illness (p. 232)

Health analysis: an analysis of a socially based model (p. 225)

Family and illness (p. 422)

Social aspects of health and illness (p. 433)

The image of the German hospital (p. 346)

Opinions about hospitals (p. 347)

People's opinions about psychiatric and medical facts and problems (p. 347).

HEALTH MANPOWER

Nursing Personnel

- Career profiles of nursing personnel (p. 119)
- The supply of nursing personnel (p. 120)
- Systems analysis of the nursing unit (p. 113)
- The nursing profession in the hospital (p. 231)
- The analysis of changes in the hospital nurse's profession (p. 231)
- The institutionalization of a collective work force (p. 223)
- Changing nursing care (p. 425)
- A planning model for nursing activities (p. 426)
- Senior positions in nursing (p. 439)
- Function and role of the home care nurse (p. 451)
- A survey of supply and demand of hospital personnel (p. 335)
- The nurse shortage in the German hospitals (p. 336)
- A campaign strategy to attract nursing personnel (p. 337)

ORGANIZATIONAL ARRANGEMENTS

Regionalization of hospitals

- Criteria for regionalization of specialized hospital services (p. 123)
- Criteria for national hospital planning (p. 122)
- Analysis of regional differences in the health care system (p. 199)
- Health care regionalization (p. 420)
- Evaluation of provisional provincial plans (p. 430)
- Regional hospital planning (p. 312)
- A hospital plan for 1972 (p. 314)

Organizational, management, and operational improvement studies on hospitals

- Numerous projects deal with these problem areas in each country
(see p. 31)

Sociological studies to investigate functional behaviour of hospitals

- The sociological framework surrounding in-patients (p. 126)
- The modern hospital on a human scale (p. 457)
- Hospital patients: limits of a medico-technical hospital care (p. 349)
- A psycho-social analysis of the relationship between hospitals and patients (p. 228)

FINANCING

Payment systems

Reflecting on social security policy (p. 100)

Health insurance in the EEC (p. 114)

The health care coverage of the population under the different social security programmes (p. 217)

Alternatives for the implementation of a system of social security (p. 441)

Current problems of health insurance: a survey of different viewpoints (p. 319)

Physician payment schemes (p. 321)

Models of physician payment schemes in insurance-based medical care (p. 322)

GUIDANCE CLUSTERS

Controllability of health services programmes

Health services research in the EEC countries (p. 110)

Controllability of the health care systems (p. 414)

Trend analysis and controllability of hospital costs (p. 308)

Towards a service industry economy: a systems and political analysis of hospital care costs (p. 309)

Recommendations towards a new hospital financing mechanism (p. 317)

Hospital costs and medico-technical progress (p. 317)

Qualitative and quantitative analysis of the growth factors for health care expenditure (p. 192)

In fact the foregoing list indicates that a rather limited number of common problems are addressed in the health services research projects in the countries surveyed. This represents a certain degree of clustering around given problem areas, different from country to country. It is remarkable but not unexpected that both nursing personnel and hospital organization and management emerge as the most important common problem addressed to in the four countries surveyed.

Next in line and equally represented are problems related to payment systems, health consumer attitudes, and regionalization of health care provisions.

UK-oriented health services research projects

A limited number of health services research projects are specifically studying problems related to the UK and may prove of interest to both health services research sponsors and researchers in the UK. As indicated earlier the settings where these projects are undertaken may be particularly inclined to develop a closer relationship with UK-based counterparts.

These settings and projects are located at the following places.

The Centre for Social Economy at Brussels University, Belgium, has a project on the National Health Service and pensions in England (p. 95).

The National School of Public Health in Rennes, France, has a project in progress on the Social Security system in England (p. 173).

The Task Force on Hospital Research of the Hanover Medical School in Hanover, Federal German Republic, developed a study on organizational metamorphoses of the health services in England since the beginning of this century (p. 282).

Exchange and interaction with foreign health services research

As stated earlier a higher degree of relevance for the UK is seen in exchange and interacting with continental European health services research.

In principle this could take place under several different formats going from regular two-way information on health services research over seeking specific advice and consultation to concerted or joint actions in health services research.

In the current state of affairs and in view of the formulated feasibility criteria, conditions for exchange and interaction are rather limited.

Health services research sponsors in the UK would certainly benefit from regular contact with those agencies in the survey countries which overview health services research as the supporting agency.

Specifically this would be:

In Belgium: the Secretariat of State for Science Policy and Programming (p. 69); the Ministry of Health and Family (p. 71).

In France: the Delegation for Scientific and Technical Research (p. 146); the Division of Health Services Research of the National Institute of Public Health and Medical Research (p. 175).

In the Netherlands: the Ministry of Health and Environmental Hygiene (p. 372); the Organization for Applied Scientific Research (TNO) (p. 378).

In the Federal German Republic: the Federal Ministry for Youth, Family, and Health Affairs (p. 250); the Federal Ministry for Education and Sciences (p. 254) and its two agencies; the Science Council (p. 263); the German Research Society (p. 257).

Health services researchers in the UK might consider to interacting with the following health services research settings on the European continent taking into account a selection on the basis of the feasibility criteria stated above:

In Belgium: the Institute for European Health Services Research at Leuven University (p. 91); the Research Unit for the Medical Market at Louvain University (p. 92).

In France: the Section of Medical Economy of the Centre for Research and Documentation of Consumption (CREDOC) in Paris (p. 187); the Division of Health Services Research of the National Institute of Public Health and Medical Research (INSERM) (p. 175).

In the Netherlands: the National Hospital Institute in Utrecht (p. 401); the Netherlands Institute for Preventive Medicine (TNO) in Leyden (p. 403).

In the Federal German Republic: the Task Force on Hospital Research at Hanover University (p. 282); the German Hospital Institute in Dusseldorf (p. 290); the Institute for Social Research of Frankfurt (p. 282).

RECOMMENDATIONS

The main recommendation of the authors of this survey is the development of mechanism(s) to make information on health services research in the countries surveyed available in a more systematic and ongoing way.

Already government agencies in the different countries have started to collect annually or biannually information on research settings, research projects, and financing of research in general.

The taxonomies used by these agencies to classify research topics up until now provide limited visibility for health services research which is hidden under headings like sociology, applied economics, management sciences, planning, human resources development public health, hygiene, etc.

A first step towards improving this situation is to include health services research as a separate research heading in official lists used for classifying information related to research projects and research settings. The next step could be, within the framework of an *ad-hoc* consultation between the national agencies involved, to provide an English version of the annual or biannual listings prepared on research by national agencies. Belgium already produces such an English version through the Secretariat for Science Policy and Programming.

On the basis of these national research overviews a regular volume on health services research in Europe could be produced.

As the national listings are usually computer-based a small effort towards compatibility of national information systems could diminish substantially the production costs of the regular multinational volume on health services research.

Gradually the multinational reporting on health services research could enlarge in terms of European countries involved. This would be facilitated if it could be done through one of the many supranational structures available in Europe. Several can be considered: OECD (Office for Economic Co-operation and Development) has devoted some effort in the past on research in member-countries. WHO, Europe, through its interest in health and the recent WHO policy to permit regional offices some activity in research, is another potential lead agency to organize systematic reporting on health services research. The EEC through its Council on Research and its Directorate on Social Security and Directorate on Life and Work Conditions could act in this regard.

The EEC moreover has already established since 1971 a Committee for Information and Documentation on Science and Technology (CIDST) which has launched 'Euronet' as a documentation and information network to be established through the co-ordination of EEC member states' information policies and activities.

The supranational organizations mentioned so far all have a different constituency, a wide span of responsibilities and activities, and might show limited interest in sponsoring a rather specific reporting

system. Voluntary agencies with an international outlook can also be considered and may prove to be more interested as is shown in the sponsorship by the Nuffield Provincial Hospitals Trust of this survey.

The King's Fund in London has recently started a reporting system on research produced by national hospital institutes in Europe.

This limited but ongoing effort could be used as a foundation stone towards a more encompassing system.

Also, as the German Hospital Institute in Dusseldorf is already sponsoring efforts to develop an automated documentation system on hospital services, an expansion to include similar or more elaborate input from other national agencies could be considered. The Institute's proposal called Hospital Information Network (HIN) is reported on p. 293 and the concluding paragraph of p. 265 as it is part of a Special Research Sector being considered for funding for the period 1975/6.

Parallel to the efforts to develop a systematic reporting on health services research in cross-national fashion it is recommended that an international health services research network be established. The major health services research settings in each country could take the first steps towards building closer contacts and more systematic consultation among health services researchers.

The fact that none of the countries studied has a regular platform for health services research mainly because health services research disappears under organizations, conferences, etc., which are either discipline-oriented or devoted towards a given component of the health services like hospital associations, etc., means that two options are open: either to use a given organization as an umbrella and graft a sufficient visible and viable entity to it as the meeting ground of health services research willing to overcome identification problems with the umbrella organization, or as a second option to create an *ad-hoc* health services research-oriented association. On the international scene the problem is still more accentuated and a satisfactory solution can only be found if national networks have taken the initiative.

In view of the reported recent shift towards mission-oriented health services research in all the countries studied, problems of how to focus health services research on given missions and how to structure research sponsorship more effectively in this respect seem

to preoccupy the leadership in both the health services community and the academic community all over Europe.

An international gathering within the European context of selected key-individuals in Europe from on the one hand the policymaking bodies and on the other hand the research community could not only help to formulate more clearly expectations regarding health services research and indicate feasible processes to arrive at effective policy research but could also give leverage to the development of health services research reporting systems and national health services research networks. A final recommendation is the development of a European health services research journal which could not only serve as a vehicle to report outstanding research but could also give identity to health services research which is now buried in too many different and mostly discipline-oriented journals.

National health services research journals are not viable in view of the limited market. A European health services research journal could appeal to a much larger audience even beyond European boundaries. It could help to reinforce previous recommendations and strengthen the ultimate social impact of health services research.

PART II

The Study

Introduction

Scope and objectives

The publication of *Portfolio for Health* in 1971 and *Portfolio for Health 2* in 1973 by the Nuffield Provincial Hospitals Trust made available extensive information on recent and ongoing health services research in the United Kingdom.¹ These comprehensive overviews of the projects and programmes sponsored by the Department of Health and Social Security are part of a long-standing policy by the Nuffield Provincial Hospitals Trust of publishing essays on health services research.²

The wealth of information available in the UK on health services research contrasts sharply with the obscurity surrounding health services research on the European continent. No country on the mainland has managed to focus, with an intensity comparable to the UK, on its health services research and to give it the same degree of visibility. This difference is to some extent related to the presence of a national health service in the UK which in the recent past has committed impressive resources to health services research. It is also related to the absence on the continent of foundations or other agencies as committed to health services research and its review as the Nuffield Provincial Hospitals Trust.

The entry of Great Britain into the EEC on 1 January 1973 opened vistas of a Western Europe in which through mechanisms like harmonization of social security and health insurance systems

1. McLachlan, G. (ed.), *Portfolio for Health* (Oxford University Press for the Nuffield Provincial Hospitals Trust, 1971); and *Portfolio for Health 2* (Oxford University Press for the Nuffield Provincial Hospitals Trust, 1973).

2. *Problems and Progress in Medical Care: First to Ninth Series* (Oxford University Press for the Nuffield Provincial Hospitals Trust, 1964-73).

and through free circulation and establishment of health workers within the borders of the Community (a measure since decided to become effective in December 1976) health care provision in each country will ultimately be influenced by the others.

This perspective stimulated great interest in the European health scene and has been responsible for a number of descriptive and analytical studies launched on both sides of the Channel. Concern in the UK on how the National Health Service would evolve within the provisions of the Rome Treaty was matched on the mainland by renewed interest in Great Britain's unique social experiment and how it could serve as a source of inspiration.

The Institute for European Health Services Research at Leuven University, Belgium, was invited in the summer of 1973 by the Nuffield Provincial Hospitals Trust to prepare a report on health services research in member countries of the EEC. In the event time permitted only the study of the positions in Belgium, France, the Netherlands, and the Federal German Republic. The main objective of the study assignment was to identify health services research endeavours and this in terms of sponsorship, available resources, research settings, problems studied, and methods used. Related to this main objective was the attempt to assess the role and place of health services research, not only in respect of service improvement but also within over-all national research efforts and national strategies. A second objective of the study was the identification and evaluation of research efforts and findings with particular relevance to the health scene in the UK specially with its entry into the EEC. A third objective was to create an instrument of communication between health services researchers on the continent and to enhance the contacts with their counterparts of the UK.

The rather new field of health services research with its limited supply of experienced researchers, its lack of identity and the tendency of being overshadowed by biomedical research runs the risk of benign neglect unless every opportunity is exploited to raise visibility and to profit from an intense and close exchange and collaboration across borders be it disciplinary or territorial.

It is hoped that the creation of an instrument of communication, may eventually lead to trigger a more systematic ongoing effort of reporting and collaborating in health services research in the EEC countries. This report indicates the need for developing a programme to review the present arrangements and initiate steps to

improve communication. It is clearly necessary to create conditions for a continuation, probably in a modified form, of the survey effort and formulate recommendations towards the creation of a mechanism for critical review of health services research efforts.

The Nuffield Provincial Hospitals Trust through its long-standing commitment to further the role of health services research undoubtedly occupies a pivotal place to foster such a programme.

Definition of health services research

A precise definition of health services research has not been generally agreed upon.

Grundy and Reinke stress the organizational aspect of health care as the main focus of what they call health practice research.¹ They include such traditional public health activities as environmental health, infectious disease control, general preventive services within the scope of health practice research next to planning, administration, and organization of all types of personal health care. Flook and Sanazaro view health services research as: 'to produce knowledge that will contribute to improvement of the delivery of health care. Health services research is concerned with problems in the organization, staffing, financing, utilization and evaluation of health services.'² Biomedical research, with its emphasis on normal and pathological structures and processes in human beings and its reliance on disciplines like biochemistry, biophysics, physiology, microbiology, cell-biology, immunology, etc., is usually not included in the concept of health services research.

Following Flook and Sanazaro, health services research in this report is defined as concerned with the effectiveness of medical care. Effectiveness of medical care is consistent with its availability, its quality and its efficiency. Hence effectiveness is considered to include these characteristics. Aspects considered relevant for the effectiveness of medical care in this broad meaning are: health beliefs and health practices of consumers of health care; the planning, production, deployment, organization, financing, management, and evaluation of health care services.

1. Grundy, F., and Reinke, W., *Recherche et organisation sanitaire et technique de management* (Cahiers de Santé Publique 51 OMS Genève, 1973).

2. Flook, E., and Sanazaro, P., *Health Services Research and R and D in Perspective* (Ann Arbor: Health Administration Press, 1973), p. 1.

In summary health services research, as used in this report, is defined as an organized and rigorous inquiry into aspects of the effectiveness of medical care. Medical care is understood to include preventative, diagnostic, curative, rehabilitative, supportive, and terminal care.

The use of the concept health services research as defined proved to be difficult for a number of reasons. Given the different languages in the member countries of the EEC key-words in the definition were bound to undergo changes in connotation and meaning through translation. A major problem in this respect was presented by the fact that a direct translation of the concept health services research is only possible so far in Dutch where the word 'gezondheidszorg-onderzoek' has the same semantic value. The absence of a single word or coined expression to convey the concept health services research in French or in German presented serious communication problems. Some difficulties also arose in distinguishing superficial study from serious investigation. The existence of a continuum between mere descriptive non-documented statements and sophisticated prospective experimental research necessitated a classification according to research design. It was felt that in a first survey there had to be some latitude to avoid the exclusion of borderline cases at the expense of precious goodwill.

Methodology

The survey was in essence an intelligence operation: the construction of a picture, as accurate as possible, of the current situation of health services research and an attempt to give perspective to the picture by identifying differences, by pointing out similarities and trends and by making speculative evaluations.

The following steps were undertaken in the study.

1. Mail survey A

A first limited questionnaire was sent to institutions and individuals known to be active in health services research or related to such research as sponsoring, financing, or supervising agencies.

In this questionnaire respondents were invited to identify health services research activities within their own country and to give information about individuals directly responsible for given projects either as investigator or as sponsor.

The questionnaire was sent out to Belgium, Denmark, the Federal German Republic, France, Ireland, Italy, Luxemburg, and the Netherlands.

The UK was not included due to the recent publications on the subject. From the start it was decided that follow-up on the response would depend from a yield of at least forty projects for a given country. The answers received led to restricting the next phase to Belgium, France, the Netherlands, and the Federal German Republic.

2. Mail survey B

Based on the information gathered through the first questionnaire correspondents were asked by mail to provide detailed information on individual research projects, on research settings, and on resources available for research both in terms of manpower and finances. In particular information was requested on the content, the methodology, and the findings of research. Research protocols, interim reports, final reports, and likely publications were also solicited.

3. Site visits

Site visits were made to major research institutions or major research sponsors in Belgium, France, the Netherlands, and the Federal German Republic to seek additional information in particular on research in progress and to obtain further information on national policies and expenditures regarding health services research and on research settings.

4. Analysis of research projects

Research projects on which sufficient detailed information was made available were read and summarized by a senior investigator or a member of a scientific advisory committee, depending on the main scientific discipline involved in the project.

Four categories of classification were used in the description and classification of research projects:

Time frame

The time frame is distinguished as retrospective and prospective.

Method

The classification of research method used indicates whether it is experimental or non-experimental with three sub-categories of non-experimental research, ie descriptive and/or analytical, comparative, and historical.

This enables some judgement as to the relative sophistication of the research effort and the potential for innovation.

Purpose

Categorization into basic, developmental, and applications-oriented research permits some estimate of the direction of the research and the applicability of either the findings or methodologies in other settings.

These three categories of classification: time frame, method, and purpose are represented in a paradigm in Fig. 1.

Problem addressed

Classification by problem in different categories was also attempted. A detailed list was used in the beginning but abandoned for three broad sub-categories: economy oriented, organization oriented, and sociology oriented. This classification although less specific enabled the main disciplinary approach used to be taken into account.

5. Control by correspondents

Draft texts of projects summaries and of descriptions on research settings were submitted as a control to the respondents who made available the original information. Respondents were invited to correct or add factual information if indicated.

A number of disturbing or unexpected elements interfered with progress at one or more levels of the inquiry.

Thus the response to mail survey *A* yielded limited information by researchers on work by colleagues.

This indicates either a low degree of visibility of research work among colleagues or a lack of interest to report on such work, if informed.

The degree to which identified researchers were willing to release information seemed influenced by the absence, during the first contacts, of a strong incentive to volunteer for a serious effort of report-

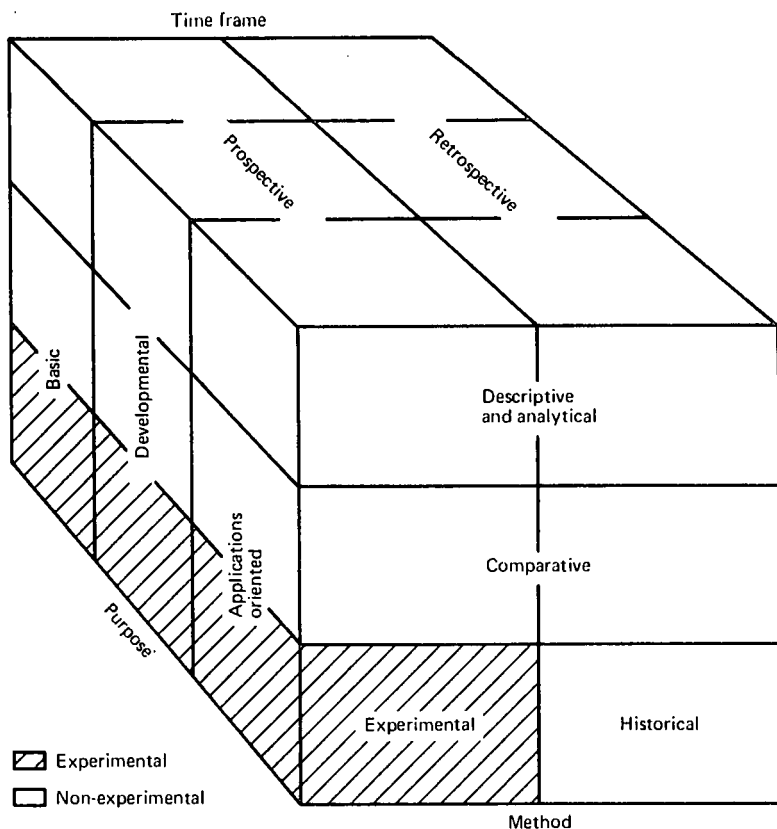


FIG. 1. Classification of health services research by method, purpose, and time frame.

ing to a foreign institute sponsored by a trust, which was mistaken in a number of cases for a commercial marketing research enterprise. As soon as follow-up contacts indicated the possibility of a formal publication on the survey a considerable interest arose to the point of more than 80 per cent return on the draft texts submitted to respondents. The limited use made in the survey countries of rigorous and formal granting mechanisms for the support of health services research is responsible for a near absence of systematic detailed research proposals, protocols, progress reports, or other monitoring mechanisms documenting research efforts.

This resulted mainly in a situation where the researchers were in most cases virtually the only sources of information.

The postal strike in France, lasting more than six weeks, at the end of 1974 interfered seriously with the survey and was responsible for losses of valuable material. The disruption of the French postal service, due to the enormous backlog at the end of the strike forced a postponement of the returning of draft-texts to respondents for control purposes.

BELGIUM

HEALTH SERVICES RESEARCH SPONSORS

Health services research is predominantly sponsored by government agencies if the Foundation for Scientific Research is included among the group of governmental sponsors. The role of voluntary agencies in sponsoring and financing health services research in Belgium is rather marginal.

Governmental agencies

Health services research has been sponsored by a number of government agencies to the extent that they are either involved in financing research as such or dealing with health services affairs for which applied research might prove helpful.

The existence within the government of a special branch for science policy and programming, currently a State Secretariat attached to the Prime Minister's office, will undoubtedly lead to a rationalization of research efforts in general and of health services research in particular. Hopefully, this will change the current situation of diluted and subminimal sponsorship of health services research. Fig. 1 develops a diagram of health services research sponsoring agencies in Belgium.

Secretariat of State for Science Policy and Programming (Staatssecretariaat voor Wetenschapsbeleid en Programmatie). This Secretariat systematically produces extensive documentation on research and higher education in Belgium and develops guidelines and recommendations for the deployment and allocation of resources for research and education.

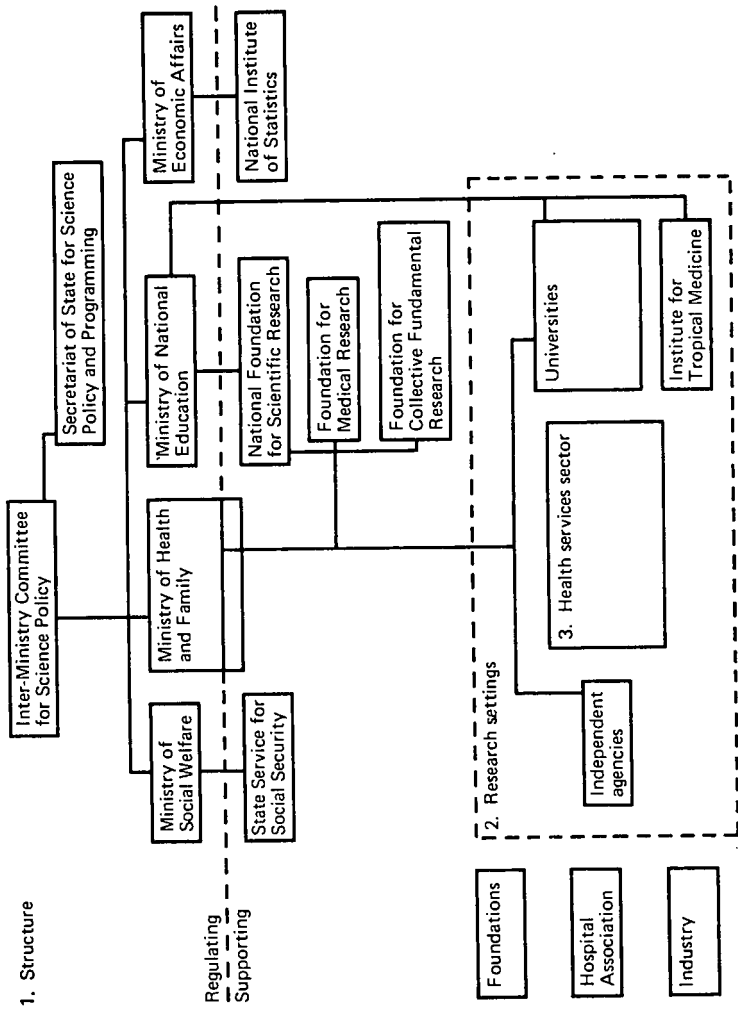


FIG. 1. Health services research in Belgium.

Special mission-oriented research programmes have been launched by the Council of Ministers since 1971 upon a proposal of the late Minister for Science Policy and Programming, the Hon. T. Lefevre, to tackle with substantial resources problems related to the public welfare. Thus a three-year research programme for data processing, involving more than a hundred researchers, started in 1971, with a £2 million budget. This programme includes a number of projects on health care data systems.

The Council of Ministers through its Interministry Committee for Science Policy is currently formulating objectives for another large-scale research programme to further in-depth knowledge of the Belgian society and to make that knowledge available for social policy decision-making. It is likely this 1974-6 programme will include projects relevant for the health services.

Ministry of Health and Family (Ministerie van Volksgezondheid en het Gezin). The Ministry of Health and Family is the major direct sponsor of health services research in Belgium. Since 1958 this Ministry has started to include in its budget a modest allocation for health services research, at that time in particular for hospital planning.

Over the years the budget item for health services research has averaged around £80,000 and was increased in 1974 to £140,000. The research sponsored by the Ministry of Health and Family is mainly carried out in university settings, although there is a recent tendency to allocate research funds to agencies outside universities like, for example, professional associations or home nursing care programmes.

This development is within a philosophy to use research funds for the solving of particular problems which are in the foreground like, for example, improving conditions for primary care or making experiments with domiciliary care.

Within the Ministry of Health and Family, a number of councils function which have relevance for health services research, at least in determining the nature and the scope of the problems to be studied.

The Hospital Council (Ziekenhuisraad). The Hospital Council is an advisory body composed of representatives of hospital associations, medical associations, nursing associations, and representa-

tives of the health insurance funds. This Council has suggested research on manpower problems, in particular nursing studies, and on the use of electronic data processing in hospitals.

Fund for the Building of Hospitals and Medical Social Facilities (Fonds voor de Bouw van Ziekenhuizen en Medisch Sociale Voorzieningen). The hospital law of 29 September 1973 has created a Fund for the Building of Hospitals and Medical Social Facilities. This Fund is a government-controlled institution. Its role is the financing of the construction or the renewal of health care facilities. The Fund will also allocate resources for research with respect to health care facilities and their equipment. So far no such studies have been sponsored by the newly created Fund, but it is to be expected that such financing will soon follow.

National Committee for Hospital Planning (Nationale Commissie voor Ziekenhuisprogrammatie). The law of 29 September 1973 on hospitals has also a provision for a National Committee for Hospital Planning. The Committee has been appointed very recently by the King and can be expected to recommend studies to be undertaken as guidance for its recommendations with regard to the planning of health care facilities.

Ministry of National Education (Ministerie van Nationale opvoeding). Although the Ministry for Health and Family is the major *direct* sponsor of health services research in Belgium, the Ministry of National Education through its financing of universities, is indirectly sponsoring an equal part of health services research studies currently being undertaken within the university settings.

All universities in Belgium, whether private or state universities, are subsidized by the Ministry of National Education. This important money flow is allocated on a basis of student enrolment and permits the universities to staff their programmes according to given student-staff ratios.

Although this financing is in principle restricted to undergraduate and graduate training, and therefore theoretically excludes post-graduate programmes in public health, a number of universities have managed to promote public health programmes where a substantial part of university-based health services research is located.

Proposals are being considered to include public health-orientated

postgraduate training and its concurrent research within the financing of the Ministry of National Education or, as an alternative, to obtain special financing by the Ministry of Health.

Ministry of Social Welfare (*Ministerie van Sociale Voorzorg*). The Ministry of Social Welfare, for a number of years, has allocated a very small amount to health services research, averaging £3,000 a year. This limited amount is in sharp contrast to the £610 million health insurance funds which in 1974 are controlled by the Ministry of Social Welfare in its government-controlled Institute for Sickness and Invalidity Insurance. It is hardly understandable, when such huge amounts of money are spent on health care services, that no more money is allocated to study and research the effectiveness of these health services.

This paradoxical situation is undoubtedly related to the particular structure of health insurance in Belgium. Although health insurance is compulsory for virtually the total population and financed through payroll deductions, employer contributions, and a substantial subsidy out of general taxation, the programme is carried out through an interaction of private insurance funds and a paragonmental agency. In this interaction bargaining takes place with the providers of health care, mainly physicians and hospitals. This bargaining process, with loyalties of the parties involved shifting according to the problems concerned, has led to a situation of latent conflict, flaring up from time to time to heated debate and threats of provider's strike, with a general overemphasis on keeping cost developments within feasible conditions. This feasibility seems more concerned with the acceptability of earmarking a given percentage of personal revenue and with the consequences for average income of physicians, than with real priorities or cost-effectiveness considerations.

Although once in a while lip service is paid to the need of fundamental investigation with respect to health services—their utilization and costs—action has continuously been delayed.

State Service for Social Security (*Rijksdienst voor Maatschappelijke Zekerheid*). This paragonmental agency, governed by a board of employer and employee representatives and controlled by the Minister of Social Welfare and the Minister of Finances, collects social security payroll deductions and employer contributions. The

collected money is distributed over five national agencies: State Service for Pensions, State Service for Employment, State Service for Annual Vacation, State Service for Family Allowances, State Institute for Sickness and Invalidity Insurance.

The State Institute for Sickness and Invalidity Insurance (Rijksinstituut voor Ziekte-en Invaliditeitsverzekering). This Institute distributes its share of the financial resources for social security to sickness funds (Ziekenfondsen). They are voluntary organizations grouping regional and local associations of insured employees and independent workers. Reimbursement payments are made to hospitals, pharmacists, and patients by the local associations according to nationwide bargained tariffs and mainly within a fee-for-service payment system. This intricate mechanism holds the potential of detailed data on supply and demand for medical care per category of care, per patient and category of patient, per category of provider, per time category, per health care facility, etc.

Both the State Institute for Sickness and Invalidity Insurance and the major sickness funds have over the years amassed this detailed data. Theoretically, this data could be of enormous value for health services research. Modest data-processing capacity and overdue persistence of manual administrative procedures have limited the value of these data banks.

The State Institute for Sickness and Invalidity Insurance considers the contracting of outside data-processing agencies to handle its data-load. The major sickness funds are installing data systems that ultimately would permit them to document and even monitor medical care consumption. These developments, if implemented correctly, could have important consequences for health services research, no longer forcing researchers to spend limited research funds and time on the collection of basic data.

Belgian Service for Productivity Improvement (Belgische Dienst voor de Opvoering der Produktiviteit). This agency with a statute of public utility existed until 1973 and was funded by the Treasury. Its main role was to promote through studies, research, and development, the improvement of productivity in industry and public service. Occasionally this agency has sponsored health services research.

Ministry of Economic Affairs (Ministerie van Economische Zaken). This Ministry so far has not sponsored health services research but is responsible for the *National Institute of Statistics* (Nationaal Instituut voor de Statistiek) which collects and publishes demographic and vital statistics and other basic data needed in health services research.

The 1970 national population census which is still being analysed contains information relevant for health services research like health manpower data, disability data, spatial mobility data, etc.

Co-ordinating semi-governmental bodies

National Foundation for Scientific Research (Nationaal Fonds voor Wetenschappelijk Onderzoek). The National Foundation for Scientific Research (NFSR) is an agency of public utility receiving the bulk of its financial resources from the Treasury within the budget of the Ministry of National Education. The main role of the NFSR is to permit individuals to become established researchers. In principle, only applications for basic research are considered for funding. Doctoral students and post-doctoral students are thus eligible for NFSR-sponsored positions. Allocations for operative expenditures can be made to recognized researchers.

So far the NFSR has sponsored only a couple of doctoral traineeships in the field of health services research. Within the 1972 allocations to recognized researchers it committed less than £4,000 out of a budget item totalling more than £1 million.

This situation is undoubtedly related to the committee structure responsible for the screening of the research applications.

Research proposals until 1973, were submitted to one of twenty-two standing committees each representing given disciplines like chemistry, physics, physiology, etc.

Health services research proposals were until 1973 virtually all processed by one committee (economic, social, and political sciences) and therefore in competition with a great variety of applications before a committee not necessarily interested in health services research. Since 1973 a twenty-third committee for hygiene and epidemiology has been added to the committee structure upon proposal of Dr Halter, Secretary-General of the Ministry of Health. This important development will improve the outlook for health services research within the NFSR and its associated foundations.

Associated with the NFSR are special foundations financing re-

search programmes emanating from teams and calling for important capital investments and manpower expenditures. The Foundation for Medical Research (FMR) is associated with the NFSR. It receives its resources through the budget of the Ministry of Health and mainly sponsors three- to four-year multidisciplinary research projects in the biomedical sphere. The Committee structure of the NFSR is also responsible for the screening of the FMR applications. In 1972 not a single health services research project was contracted in a total of fifty-nine new contracts. A second Foundation associated with the NFSR is the Foundation for Collective Fundamental Research (FCFR). In principle it sponsors projects within the human and the exact sciences not covered by the FMR or the third associated Foundation: the Inter-university Institute for Nuclear Sciences.

The FCFR was sponsoring in 1972 two health services research projects in a total of 244 projects.

Foundations

Julie Renson Foundation (Julie Renson Stichting). This Foundation was created in 1957 with the legacy of Julie Renson dedicated to the promotion of 'scientific and philanthropic endeavours in the field of mental health'.

The Foundation has regularly sponsored studies and reports on the situation and the prospects of mental health care in Belgium, thereby seeking to involve relevant agencies and institutions. Under its sponsorship a blueprint for mental care in Belgium was produced in 1960 by a study group. This blueprint substantially influenced the decision-making within the Ministry of Health and Family and was used as a reference scheme in the development of manpower for mental health care by the universities.

In 1973 a more detailed and updated version was produced of the blueprint, taking into consideration manpower problems and forms of extramural care, not covered in the 1960 report.

The Julie Renson Foundation has also sponsored the development of central bibliographic catalogues on mental health and mental health care as basic instruments for study and research.

Queen Fabiola Foundation (Koningin Fabiola Stichting). The Foundation was created in 1967 with the specific aim to act as focus point for the multiple national organizations and agencies active in the field of mental health.

To guide its co-ordinating function the Foundation has sponsored and published a national inventory of mental health facilities. The Foundation also stimulated the development of the 1973 report of the Julie Renson Foundation. Recently it has been reported that the Foundation is limiting its activities due to insufficient resources.

Private sponsors

Hospital Association of the Catholic Charities (Verbond der Verplegingsinstellingen van Caritas Catholica). Since 1960 this Association which groups 47 per cent of the general hospital beds and 85 per cent of mental hospital beds has commissioned studies and investigations to base its action and recommendations on a more scientific basis. Such studies mainly conducted within university-based settings have covered a great variety of subjects ranging from religious sociology to hospital engineering. In recent years, the Association has allocated nearly 10 per cent of its annual budget to health services research.

Industry. The pharmaceutical industry and hospital supply industry in recent years have occasionally included health services research in their traditional sponsorship to biomedical research.

Siemens and Janssens Pharmaceutica are currently sponsoring a major comparative analysis of hospital legislation in EEC countries. A joint sponsorship by Philips, IBM, Eli Lilly, NCR, Bekaert Stanwick, General Electric, and Hospitera is since 1972 financing the yearly input of six man-months of North American expertise in health services research. This input situated at Leuven University has been shared with the King's Fund in London and health services research settings in the Netherlands.

International sponsors

Supranational agencies. Occasionally health services research has been sponsored or co-sponsored by the World Health Organization, the Council of Europe, and the International Labour Organization.

Recently the directorate general for Social Affairs of the Commission of the European Economic Community has shown interest in health services research and started sponsoring activities in this field.

Voluntary agencies. Agencies like the International Social Security Association (Geneva) and the European Institute of Social Security (Leuven) have occasionally called upon Belgian researchers to participate in health services research projects. The study which led to the report presented in this volume was sponsored as mentioned in the introduction by the Nuffield Provincial Hospitals Trust of London.

The Family Care Foundation, New York, has sponsored the development of the Geel Foster Family care research project, a joint undertaking by Columbia University, Leuven University, and the State Colony at Geel, to study foster family care for mentally ill.

National Institute of Mental Health. The National Institute of Mental Health, Bethesda, Maryland, USA, granted during the period 1970-3 £12,900 yearly to the Geel Foster Family Care Research Project jointly undertaken by Leuven University, Columbia University, and the State Colony at Geel.

HEALTH SERVICES RESEARCH STRATEGIES

Health services research in Belgium is not part of a grand over-all design. In terms of research strategies Belgium is faced like most parliamentary democracies with the difficult task of accommodating both directed and non-directed research.

In order to keep the delicate balance in which research activities can on the one hand be focused on the nation's needs and on the other hand can still give sufficient independence to the proponents of autonomous research a two-pronged approach has emerged.

1. Non-oriented research is considered by the academic establishment as a basic need and guarantee for the development and regular input of scholars and the provision of a permanent base for nurturing the steady growth and updating of knowledge and culture.

This open-ended general strategy is implemented through non-directive financing of universities and through the collateral financing of non-oriented research within universities by the National Foundation for Research and its associated foundations. The involved decision-making machinery and the ultimate research activities to a major extent reflect the composition of university structures

as they evolved over centuries, thereby favouring certain traditional strongholds embedded for generations within these structures. This for instance explains the relative importance given to archaeological research.

Within this strategy of leaving the initiative for research with the researchers and limiting the role of supervising and granting agencies to an evaluation on the basis of scientific merit there is a slight tendency to adjust towards 'balanced' response to subjects relevant for modern society. New areas of interest or new problems facing society ultimately and with a given time-lag appear in research applications and have a chance to be sponsored. This explains why since 1969 a limited but growing number of problem-oriented health services research projects have appeared among university initiatives and proposals reflecting a growing awareness of the multiple problems in the delivery of medical care.

An important development within this non-directive strategy of academia and consistent with its basic philosophy is the initiative taken by both Leuven University and Louvain University to concentrate and reserve increasing amounts of the operating budget for research of high quality with evaluation criteria being: methodological soundness of the proposal and aptness and reputation of the applicants. This latest development reflects a basic concern within Belgian academic circles to shy away from undersized research efforts. The notion of 'critical mass' is very central in this concern and explains the drive to break away from university structures built around individuals, thereby aiming for departments as the building stones for the university. Multidisciplinary research efforts and in particular interdepartmental and inter-university arrangements are highly appreciated and favoured among competitors for research funds.

2. Mission-oriented research results either from initiatives taken by researchers seeking to apply their skills on problems they consider relevant and for which they expect research resources to exist, or from specific requests made by agencies in search of solutions or improvement of situations. The latter method is gradually overtaking the former. Since the early 1960s the existence in Belgium of a Secretary of State for Science Policy and Programming has led to detailed and yearly improving documentation on research efforts in general and mission-oriented research in particular providing the

data base to determine major objectives and priorities thereby directing research efforts more specifically towards certain goals. Agricultural research and industrial research has thus been focused on problems specific for the Belgian situation. A growing concern for the quality of life is turning attention towards solving major social and environmental problems and one can expect that research resources will be shifted gradually towards how to improve living conditions, how to adjust social services and their infrastructure including health services and medical care delivery mechanisms.

So far no clear focus point has emerged to inspire and orient the nation's effort in health services research. The Ministry of Health and Family seems the indicated agency to fulfil this function of goal-setting. Beyond its current role of contracting a modest number of mission-oriented health services research projects and its financing of non-oriented health-related research through the Foundation of Medical Research, the Ministry of Health and Family could assume a more explicit and pronounced responsibility in charting the nation's need for health services research. Formulating a long-term and highly visible development plan in this respect could permit agencies like the State Secretariat for Science Policy and Programming to focus more explicitly the indicated resources to problems in the health care field which are now too vaguely stated and inhibiting decision-makers beyond the point of mere acknowledgement. Such an explicit health services research strategy would depend upon the existence of knowledgeable health services researchers in sufficient numbers. A long-term plan, should take into account the gradual development of this scarce resource and be inspired by similar arrangements in the US to provide for special resources for training and development of doctoral and post-doctoral candidates in disciplines relevant to health services research like health economics, medical sociology, medical care organization, epidemiology, health law, biostatistics, etc. Assuming that universities within their over-all commitment to non-oriented research would automatically and sufficiently adjust to produce the needed scholars and established researchers for an eventual major national effort in health services research is wishful thinking and would undoubtedly result in a serious gap between demand and supply of health services researchers.

Therefore co-ordinating research plans with the training of the needed researchers seems highly indicated.

HEALTH SERVICES RESEARCH EXPENDITURE

Expenditures for health services research in Belgium can be divided into two categories according to the origin of the financial resources: public money or private funds. The majority of expenditures for health services research is financed out of public funds. This financing however is so interwoven with over-all financing for research, which itself is mixed with expenditures for higher education, that it must be looked at in an over-all context. For reasons of reliability and comparability of data, 1972 has been used as a reference year since this is the latest year for which comprehensive data are available.¹

Public expenditures for health services research

The budget for Science Policy and Programming distinguishes five major streams going to higher education and research.

Flow 1 is the direct financing of universities, totalling £103,192,220 in 1972. This financing is based, per university, on a fixed amount for a 10,000-student university plus a differential *per capita* allowance for every student enrolled beyond 10,000.

Staff-student ratios and allocations for operating costs leave ample room for doctoral work and research activities by the academic staff. Within this money flow some expenditures, on which only estimates can be made, are devoted to health services research.

It is estimated that within these total expenditures of flow 1 in 1972 roughly twenty man-years were devoted to health services research at an average cost of £6,495 per man-year (including overheads) this represents £131,523 or 0.12 per cent of flow 1.²

1. The data presented in this chapter have been mainly obtained from the following reference sources:

45th Annual Report of the National Foundation for Scientific Research and Associated Foundations (1972). Egmontstraat, 5, 1050 Brussels.

Budget of the Prime Minister's Office for the budget year 1973; *Parliamentary Proceedings*, 4 v (1972-3), no. 2.

Science and Technology Yearbook 1972. Science Policy Programming (Brussels: Prime Minister's Office, 1974).

National Institute for Statistics, *Studies 1973* (Brussels, 1974).

Statistical Yearbook 1972-3 (Brussels: Ministry of Health and Family, 1974).

Additional data were obtained through officials of the agencies concerned.

² This estimate was derived at by adding reported efforts by staff on university pay-rolls. This figure is debatable as many research projects were financed from multiple sources.

Flow 2 is collateral financing of basic research in universities through government financed Foundations.

A total of £9,918,000 was budgeted in 1972 for the National Foundation for Scientific Research and its associated foundations: the Foundation for Collective Fundamental Research; the Foundation for Medical Research; the Inter-university Institute for Nuclear Sciences. These foundations together allocated in 1972 some £37,930 to health services research. The National Foundation for Scientific Research allocated £12,880 in a budget of £3,481,711. The Foundation for Collective Fundamental Research allocated £18,550 in a total budget of £2,010,309. The Foundation for Medical Research allocated £6,500 out of a budget of £1,661,855.

The Inter-university Institute for Nuclear Sciences made no expenditures for health services research in its budget of £2,025,773.¹ The percentage of flow 2 devoted to health services research amounts to 0.38 per cent.

Flow 3 financed from different ministries, technological research, and agricultural research for a total amount of £26,755,577 in 1972 with no funding to health services research.

Flow 4 is related to scientific activities of general importance, outside the fields of industry and agriculture, financed either in national institutes or under contract in universities at the request of ministries or government agencies. In a total amount of £22,095,185, some £91,443 were devoted in 1972 to health services research of which £87,628 were allocated by the Ministry of Health and Family and £3,815 by the Ministry of Social Welfare.

In 1971 a special extraordinary budget was allocated by the Prime Minister's Office to stimulate research in information systems. The total amount of £2,061,855 was allocated over a three-year period. Within this extraordinary budget £103,092 were allocated in 1972 to research on automated medical records systems and hospital management systems. This brings the percentage of health services research in flow 4 to 0.8 per cent.

Flow 5 for a total amount of £11,650,515 was entirely devoted to contributions to international agencies, with no allocations for health services research.

Table 1 gives an overview of the over-all allocation of public funds

1. The subtotals of the four foundations added amount to £9,179,648. The difference of £738,352 with the total budget is a special budget for the three associated foundations permitting to balance Flemish/French research efforts.

TABLE I
Public expenditures in Belgium for higher education and
research in 1972

	Budget voted for 1972 (£s)	Allocations to health services research in 1972 (£s) (%)	
Flow 1			
University operating costs	103,192,220	131,523	0.12
Flow 2			
Collateral financing of basic research in universities	9,918,000	37,930	0.38
Flow 3			
Technological and agricultural research	26,755,577	—	—
Flow 4			
Scientific activities of general importance	22,095,185	91,443	} 0.85
Special credit for information systems	687,285	103,092	
Flow 5			
Contributions to international organizations	11,650,515	—	—
Total	174,298,782	363,988	0.2

for health services research within the 1972 budget for higher education and research. Health services research amounts to only 0.2 per cent of this operating budget.

Table 2 gives an analysis by objectives of the Belgian 1972 budget for higher education and research. The budget in this table includes expenditures for investments. Within this budget health-related research stands second to productivity research as research effort with 15.70 per cent of the total R+D budget.¹

Health services research, however, represent only 0.3 per cent of the total R+D budget.

Private expenditures for health services research

Although the public expenditures for health services research are not impressive they largely overshadow the private expenditures.

During the year 1972 as reference year, expenditures are estimated merely to have exceeded £20,000 a year. Prospects are that private

1. R+D is here being used as covering the whole field of research.

TABLE 2

*Analysis, by objectives, of the Belgian 1972 budget for higher education and research **

<i>Objective</i>	<i>Amount (£s)</i>	<i>R+D (£s)</i>	<i>% of total</i>	<i>R+D% of total</i>	<i>% of total R+D</i>
1. Improving general knowledge	33,547,568	16,064,261	15.99	7.65	13.22
2. Nuclear research	18,273,711	1,957,753	13.47	9.33	16.11
3. Spatial research	5,367,585	4,937,942	2.56	2.35	4.06
4. Military research	3,797,692	1,277,812	1.81	0.61	1.05
5. Earth research	19,219,146	11,742,091	9.16	5.60	9.67
6. Ecological research	1,938,024	1,706,159	0.92	0.81	1.40
7. Health research	34,364,649	19,072,714	16.37	9.09	15.70
8. Socio-economic research	3,531,182	1,910,783	1.68	0.91	1.57
9. Sociological research	39,530,176	17,665,874	18.84	8.42	14.54
10. Productivity research	40,291,359	27,527,867	19.20	13.12	22.66
Total	209,861,140	121,481,250	100	57.89	100

*The budget includes investment costs.

expenditure is not likely to increase in this area, as funding of research, in particular in the social sphere, is seen as a public responsibility.

Total expenditures for health services research in 1972 arrived at by combining public and private expenditures were £383,988. The Ministry of Health and Family in its latest *Statistical Yearbook* (1972-3) has attempted to estimate total expenditures related to health in 1973.

Table 3 gives an overview of these estimates. In releasing these figures the Ministry stresses the point that they have been arrived at by combining actual expenditures, budget figures, and indexed figures of previous years. In itself, this acknowledgement by the Ministry highlights the need for more health services research.

The total expenditures related to health in 1973 amount to £2,103,988,631 including expenditures for environment and housing allowances. By subtracting these last expenditures there remains £1,362,476,270 for health care. By estimating expenditures for

TABLE 3
Estimated expenditures for health care in Belgium 1973 (£s)

	<i>State Institute for Sickness and Invalidity Insurance</i>	<i>Ministry of Health, Family, and Environment</i>	<i>Other ministries</i>	<i>Provinces and communes</i>	<i>Private sector</i>	<i>Total</i>
1. Curative care	487,377,310	87,390,721	90,464,948	24,018,556	148,601,030	837,852,565
2. Preventive care		33,989,690	274,226	95,130,927	162,149,480	231,544,323
3. Environment		41,728,865	19,919,865	122,091,587	359,515,460	534,255,662
4. Housing		36,527,835	67,357,751	19,421,649	83,949,484	207,256,699
5. Industrial medicine			41,623,711		42,364,948	23,988,659
6. Indigent care		57,044,329	35,316,494			92,360,823
7. Education for health professions			72,159,799			72,159,799
8. Research		7,843,298	756,701		9,072,164	17,672,163
9. General support		26,897,938				26,897,938
Total	487,377,310	291,422,676	327,873,107	200,662,882	796,652,566	2,103,988,631

health services research in 1973 at £460,785 (an increase of 20 per cent over 1972) one arrives at 0.03 per cent of the expenditures for health care devoted to health services research.

HEALTH SERVICES RESEARCH SETTINGS

INTRODUCTORY REMARKS

Health services research in Belgium is still in a very early stage of development. The number of settings, where a permanent and viable core of research activities devoted to the improvement of the effectiveness of medical care can be identified, is still very small.

Yet, a growing number of research centres report interest and occasional activities in health services research. This could ultimately lead to a larger number of research units primarily and permanently engaged in health services research.

Hoping that the current situation in Belgium is one of early take-off, the following description includes also those research-settings which only occasionally are active in the health field but show potential to increase their commitment in the near future.

So far, the average size of the research units has been rather small, averaging six persons with professional qualifications. Taking into account that these units are nearly all situated within universities where their activities are interwoven with educational responsibilities the question can be raised whether a sufficient concentration of effort is brought to bear upon the usually difficult and intricate health services problems. Collaboration between research units through multi-departmental or inter-university research seems to be one of the avenues, pursued in Belgium, to overcome the handicap of being undersized.

UNIVERSITY-BASED HEALTH SERVICES RESEARCH

Not all universities in Belgium have permanent activities in health services research. Those with established HSR are: Leuven University (Flemish), Louvain University (French), Brussels University (French), Gent University (Flemish). The other universities so far have no record of ongoing HSR efforts.

Leuven University

The Research Unit for Hospital Administration and Medical Care Organization: RUHAMCO is the research division of the *Department of Hospital Administration (Centrum voor Ziekenhuiswetenschap)* of the School of Public Health. This Department was founded in 1961. Its objectives are graduate education in health services management, continuing education for hospital administrators, and health services research. The Department has a professional staff of eighteen and is headed by Professor J. E. Blanpain. The Department is mainly supported by the University. Research resources are provided by the Ministry of Health, the Ministry of Social Welfare, the Hospital Association of the Catholic Charities, and occasional private sponsors.

The Department has undertaken joint research with its homologue at Brussels University on medical staff organization in Belgium. It also participates in the Geel Foster Family Care Project (pp. 88 and 127) and is a constituent department of the Institute for European Health Services Research at Leuven University (p. 91).

Recent and current research projects are:

1. Systems analysis of the nursing unit (p. 113).
2. Cost studies of selected hospital services (p. 106).
3. Determinants of the use of medical care (p. 105).
4. Costs of personal health care (p. 105).
5. Planning and financing of hospital facilities (p. 113).
6. Hospital discharge abstract analysis: a tool for professional activities study (p. 112).
7. The position of the hospital physician in the countries of the European Economic Community (p. 112).
8. Medical staff organization in hospitals (p. 111).
9. Influence of physician payment systems on the utilization of medical care (p. 104).

The Department of Community Psychiatry (Afdeling Sociale Psychiatrie) is a department of the School of Public Health. This Department was created in 1965 in close collaboration with the Division of Community Psychiatry of Columbia University, New York. The Department headed by Dr J. Schrijvers has a professional

staff of fourteen and is mainly engaged in a long-term international research project on foster family care for the mentally ill in Geel, Belgium. This research project is a joint undertaking by Leuven University and Columbia University, New York. The project is headed by Professor L. Srole of Columbia University.

Within Leuven University the Department of Community Psychiatry is the lead department of a number of departments participating in the Geel project. The project is sponsored by the National Institute of Mental Health, USA, the Foundation for Collective Fundamental Research, the State Colony for Family Care at Geel, and the collaborating universities (p. 127). The Department is a member of the Institute for European Health Services Research.

The Department of Health Ecology (Afdeling Gezondheidsecologie) of the School of Public Health under the directorship of Professor H. Vandevoorde and with a professional staff of ten, is involved in research on infection control in hospitals. This research leans more towards environmental hygiene which is the over-all field of interest of the Department. This research is undertaken with university resources and a grant from the Foundation for Medical Research.

The Department of Epidemiology (Afdeling Epidemiologie) of the School of Public Health and headed by Professor J. V. Joossens has a professional staff of six. Although mainly engaged in epidemiological surveys related to hypertension the Department is participating in the Inter-university Project on Computer Applications in Hospitals (p. 99).

The Department of Social Security (Afdeling Sociaal Zekerheidsrecht) is a division of the Law School. Its activities are teaching and research in social security law and social policy.

The Department was founded in 1965 and is headed by Professor R. Dillemans. It has a professional staff of eleven, many of them very active in comparative studies of social security in an international perspective. The Department is a member of the Institute for European Health Services Research.

Recent and current research focuses on:

1. Harmonization and simplification of social security legislation in Belgium.

2. Health insurance in the EEC (p. 114).
3. Medical control in social security (p. 115).
4. Evaluation of incapacity to work.
5. The family in Belgian social security legislation.
6. Legal position of handicapped.
7. Socialization of the risks of accidents.
8. Simplification and humanization of social security administration.
9. Social assistance in Belgium, in the other EEC countries and in the USA.
10. Social security and development.

This research is mainly conducted with university resources and sponsorship from the Foundation for Collective Fundamental Research, and from the National Foundation for Scientific Research.

The Department of Medical Sociology (*Afdeling Medische Sociologie*) is a division of the Sociological Research Institute.

The Department was created in 1968. It has a professional staff of eight and is headed by Professor Y. Nuyens. Its activities are mainly research. Its staff is also engaged in teaching of medical sociology to undergraduate and graduate students in sociology, to medical students, and to students in health services management. The Department is a member of the Institute for European Health Services Research.

The research activities of the Department are supported by the University, the National Foundation for Scientific Research, the Foundation for Collective Fundamental Research, and occasional private sponsors.

Research is reported on:

1. The situation of the general practitioner in Belgium (p. 117).
2. Socio-cultural determinants of sickness and health behaviour (p. 119).
3. Patient's evaluation of general practice (p. 119).
4. Handicapped persons in society: a sociological approach (p. 117).
5. Medical sociology in Europe (p. 118).
6. An exploratory research of three mental hospitals (p. 118).
7. General practice and mental health care (p. 131).

The Group of Sociology of Religion (Afdeling Godsdienstsociologie) of the Sociological Research Institute is currently engaged in a sociological analysis of the legitimacy of the catholicity of Catholic health care facilities.

This group headed by Professor K. Dobbelaere, has a professional staff of five and is sponsored for this particular study by the Hospital Association of the Catholic Charities.

The Unit of Health Facilities Architecture (Werkgroep Ziekenhuisbouw) is a section of the architecture division of the School of Applied Sciences. This unit created in 1971 is headed by Professor J. Delrue and is in the process of build-up. Research activities so far have been modest and devoted to rationalization of hospital facilities and to development of a hospital building system for the Middle East countries (p. 115). The Department is a member of the Institute for European Health Services Research.

The Department for Systems Studies (Afdeling ketens en systemen). This division of the Applied Sciences Faculty is headed by Professor Debruyne. Although its main research effort is outside the health field, the Department is currently involved in the Inter-university Project on Computer Applications in Hospitals (p. 99).

The Academic Centre for General Practice (Academisch Centrum voor Huisartsengeneeskunde). This division of the Medical School has been primarily created to promote the training for primary care physicians. The Centre, under the directorship of Professor R. Boelaert, has a professional staff of five and has modest research activities. It participates in the Inter-university Group for Education of General Practitioners (p. 98).

The University Data Processing Centre (Het Universitair Rekencentrum). This centre functions as a central facility for research and administrative purposes. It is currently directly involved in the Inter-university Project on Computer Applications in Hospitals (p. 99).

The Centre for Economic Studies (Centrum voor Economische Studieën). This research centre has only recently shown interest in

the health sector. It is currently engaged in a study projecting future national revenues and expenditures for social security including expenditures for sickness insurance. This study is being directed by Dr R. Boelaert (p. 106). The Centre is a member of the Institute for European Health Services Research.

The Centre for Applied Social Psychology (Centrum voor Toegepaste Sociale Psychologie). This division of the School of Psychology and Educational Sciences headed by Professor L. Lagrou, has been active in the Geel Family Care Research Project (p. 127).

The Institute for European Health Services Research is a multidepartmental consortium at Leuven University. Since 1971 it groups the following departments: Hospital Administration (p. 87), Social Security (p. 88), Medical Sociology (p. 89), Health Facilities Architecture (p. 90), Community Psychiatry (p. 87), and the Centre for Economic Studies (p. 90). These departments pool resources in joint health services research activities focused mainly on the European scene. The Institute is guided by an international advisory committee and has invited outstanding health services researchers and scholars to become Fellows of the Institute. The Institute has a faculty exchange programme with North America and acts as a research base for fellows and visiting faculty. The Institute is managed by a committee of representatives of the collaborating departments, chaired by Professor J. Blanpain. Director of the Institute is Professor J. Van Langendonck.

Research activities in progress are:

1. Health services research in EEC countries (p. 110).
2. Comparative study of hospital legislation in the EEC (p. 110).
3. Health and health care of migrant workers in selected EEC countries (p. 127).
4. Development of hospital facilities under conditions of limited resources (p. 111). Research so far has been sponsored by the Nuffield Provincial Hospitals Trust, the Council of Europe, the Directorate General for Social Affairs of the EEC, industrial foundations, and private sponsors.

Louvain University

Health services research is concentrated at Louvain University in the School of Public Health. A number of research units of that School are directly geared to health services research.

Research Unit for the Medical Market (Unité de Marché Médical). This Unit with a professional staff of six is headed by Dr Deliège-Rott. Research objectives of the Unit are to study the medical market in a multidisciplinary way with special interest in demand for and supply of medical manpower. The Unit has shown a great interest in the European scene and a number of doctoral theses are devoted to health manpower issues in Europe. Research is sponsored by the University, the National Foundation for Scientific Research, the Ministry of Health and Family, and private sponsors.

Recent and current research projects are :

1. The physician facing the Common Market (p. 101).
2. The growth of medical manpower in Belgium (p. 103).
3. Time budget of Belgian physicians (p. 102).
4. The sociological framework surrounding in-patients : with special reference to conflicts (p. 126).
5. Comparison of medical fees in Europe (p. 102).
6. A prospective analysis of systems of health care (p. 108).
7. Integrated medicine : its objectives and effectiveness (p. 109).
8. Physicians income in Europe : comparison of the level of earnings (p. 108).
9. Regional analysis of medical consumption, need, and supply in Belgium (p. 103).

Research Unit for Medical Sociology (Unité de Sociologie Médicale). This Unit, headed by Professor J. Descy, has a professional staff of six and a wide range of interest in the health services field. The main research effort has been focused on determining demand and need for hospital care. Research is supported by the University, the Ministry of Health and Family, the Ministry of Social Welfare, and private sponsors.

Research is reported on :

1. Attitudes of the medical profession toward home care (p. 121).

2. Spatial analysis of health care provisions in economically depressed regions (p. 100).
 3. The cost of cardiovascular diseases (p. 101).
 4. Criteria for the rationalization of hospital care (p. 122).
 5. Hospital development programme for the Marche-en-Famenne region (p. 123).
 6. Hospital development programme for the city of Tournai (p. 123).
 7. The cost of X-ray diagnosis in in-patient and out-patient care (p. 101).
 8. Rationalization of the Catholic hospitals in metropolitan Brussels (p. 124).
 9. Determining the hierarchy of urban centres in terms of social and economic level, accessibility, and availability of health care (p. 126).
 10. Renewal programme for different hospitals in the Walloon part of Belgium (p. 123).
 11. Determining need for paediatric beds for 1980 in metropolitan Brussels (p. 122).
 12. Health indicators (p. 123).
 13. Criteria for regionalization of specialized hospital services (p. 123).
 14. Determining social economic and health care hinterlands for the different urban centres by using traffic flow methods (p. 126).
- The Unit jointly undertakes with the Institute of Sociology of Brussels University studies related to demand and need for hospital care (p. 97).

Research Unit for Epidemiology (Unité d'épidémiologie). This Unit with a professional staff of six is headed by Professor M. Lechat. The major part of the research activities is devoted to epidemiological and epidemiometric studies on leprosy, respiratory ailments, congenital malformations, meningitis, intestinal parasitosis, home accidents. Such studies are not covered by the definition of health services research as used in this report.

The Unit reports a feasibility study, in progress, on natural disasters in order to standardize equipment for relief and to define relief tasks for training purposes.

Research Unit for Gerontology (Unité de Gerontologie). Professor Gommers heads this Unit with a professional staff of seven. The Unit, although geared towards the biological and social aspects of ageing, reports studies on:

1. Evaluating the need for services of the aged in a town east of Brussels.
2. Analysis of the aged population at home and in institutions.

Brussels University

School of Public Health (Ecole de Santé Publique). The School of Public Health has a long tradition of research in environmental health, social medicine, social paediatrics, and industrial health. Since 1964 the School has also undertaken health services research.

Laboratory of Epidemiology and Social Medicine (Laboratoire d'épidémiologie et de médecine sociale). This Laboratory is headed by Professor M. Graffar. It has a professional staff of six and is active in the undergraduate and graduate teaching of social medicine. Its research activities include:

1. Evaluation of the effectiveness of school health programmes (p. 116).
2. Motives determining use and abuse of alcohol, tobacco, drugs among high school students (p. 131).
3. Personnel requirements in homes for the aged.
4. Expenditures by type of morbidity as guidelines for the planning of an academic health sciences centre.
5. Multifactorial prevention of coronary heart disease: part of the International WHO collaborative study (pp. 96 and 115).
6. Economic aspects of mental health care (p. 107).

The research is supported by the University, the Foundation for Medical Research, the Ministry of Health and Family, Euratom, Julie Renson Foundation.

Service for Medical Statistics (Service de statistiques médicales). This Unit headed by Professor L. Martin has a professional staff of six and reports research on:

1. Study of the laws of probability for events in hospitals and maternity wards.

2. Development of programmes adapting discrete laws to hospital statistics.

Institute for Sociology

Centre for Social Economy (Centre d'Economie Sociale). Headed by Professor G. Spitaels, this Centre has nine professionals active in health services research, supported by the University, the Ministry of Health and Family, the Belgian Service for Productivity Improvement, the Ministry of Social Welfare, and the National Foundation for Scientific Research. Research is reported on:

1. Reflecting on social security policy (p. 100).
2. Social indicators of health (p. 131).
3. The National Health Service and pensions in England.
4. Career profiles of nursing personnel (p. 119).
5. The supply of nursing personnel (p. 120).
6. Nursing personnel in psychiatry.
7. Analysis of supply and demand of medical care (p. 104).

Centre for Sociological Studies of Health (Centre d'études sociologiques de la Santé). This Centre, headed by Professor M. Graffar, has a professional staff of five and is undertaking together with the research unit for medical sociology of Louvain University studies relating to demand and need for hospital care (p. 92).

The Centre plans to undertake a study on supply and demand of medical care together with the Centre for Social Economy (p. 95).

State University of Gent

Health services research within the State University of Gent, up until now has been rather of limited scope.

Compared to other universities, this is probably related to the absence of a School of Public Health which seems to play a stimulating role for health services research in other universities.

Department of Social Hygiene and Social Medicine (Leerstoel voor Sociale Hygiëne en Sociale Geneeskunde). Professor K. Vuylsteek heads this department which has a professional staff of nine. As a division of the medical school it is active in teaching at undergraduate, graduate, and postgraduate level.

Its research interests cover epidemiology, industrial health, and health services. Its support for research is derived from the University, the Foundation for Medical Research, the Coal and Steel Community, and the European Economic Community.

Health services research is reported on:

1. Cure and care organizations for the aged in the Eeklo region (p. 116).
2. Multifactorial prevention of coronary heart disease: part of the International WHO collaborative study (pp. 94 and 115).
3. Needs and demands of families for personal health care.
4. Individual and group-directed preventive health care.

The Department participates in the Inter-university Group for Education of General Practitioners (p. 98).

Department of Statistics (Seminarie voor Statistiek). This Department of the School for Economics, headed by Professor Picard, occasionally has engaged in health services research. Doctoral work by W. Prove in progress is reported on a differential functional analysis in medical practice, mainly a sociological analysis of the process of professionalization (p. 121).

University of Antwerp

This new university is a joint undertaking of state colleges and private colleges gradually evolving into a complete university. Commitment to problem-oriented research seems high.

The Centre for Social Policy (Centrum voor Sociaal Beleid). This Centre was created in 1970. Headed by Professor H. Deleek, it has a professional staff of five.

Resources for research are derived from the University and from the Foundation for Collective Fundamental Research.

Research is reported on:

1. Social planning (p. 107).
2. Financing of social security.
3. Social security and income distribution.
4. Social security, social needs, and poverty.

The Centre for Sociological Research (Sociologisch Onderzoekscentrum). This Centre headed by Professor G. Van Rompu was created in 1964 and has a professional staff of five.

It reports research in progress on:

1. Determinants of labour turnover of nursing personnel in four Antwerp hospitals.
2. A profile of the head nurse.
3. Hospitals and public relations.
4. Development of the hospital.

University Faculties: Namur

The Department of Sociology (Departement de Sociologie) reports an investigation by interviews into expenditure on health care.

State University of Liège

The Institute of Sociology has interest in doing research on health behaviour of consumers (p. 126).

Inter-university research

A number of initiatives have been taken to create a research base which could draw upon the support and expertise of departments and individuals in a number of universities. In most instances, these initiatives have been mission-oriented and were intended to cope with given problem areas. The formula of inter-university research has also been promoted by sponsoring agencies to avoid dilution and duplication of efforts among universities competing for limited research funds.

Group for study and research in public health (Groupe d'étude et de recherche sur la santé publique: GEDERSAN). This group is a joint undertaking of Brussels University and Louvain University. Researchers are located in the Schools of Public Health of both universities and in the Institute of Sociology of Brussels University. Research has been mainly conducted for the Ministry of Health and Family and was primarily oriented to hospital planning.

The following studies have been jointly undertaken:

1. Criteria for national hospital planning (p. 122).
2. Hospital planning for the province of Brabant (p. 123).

3. Mental health needs of in-patients in general hospitals (p. 125).
4. International study on hospital utilization (p. 124).
5. Need for emergency services in metropolitan Brussels (p. 125).
6. Need for emergency mental health care in metropolitan Brussels (p. 125).
7. Planning health care facilities in the province of Luxemburg (p. 124).
8. Mental health needs of injured persons (p. 125).

Inter-university group for education of general practitioners (Huisartsenopleiding interuniversitair overlegorgaan). This group, directed by Professor H. Janssens of the University of Antwerp, draws on departments and individuals of Leuven University, Gent University, the University of Antwerp, the University of Brussels, and the Flemish Scientific Association for General Practice. The group has started very recently and intends to study with a grant of the Fund for Medical Research, the function and position of the future primary care physician in Belgium in order to determine an adequate curriculum content for future general practitioners. The same group has applied to the State Secretariat for Science Policy and Programming within the 1974-6 special programme for social policy research (p. 126).

Inter-university Project on Computer Applications in Hospitals (Interuniversitair Project Computeraanwendungen in Ziekenhuizen). In 1971, the Belgian Government acted upon a proposal of the Minister of Scientific Policy to launch a £2,000,000 three-year programme of data-processing research.

One of the objectives of the programme is to co-ordinate ongoing research activities and to focus them on relevant problems in public administration, social services, educational, and science policies.

In a total of twenty-two projects, three are devoted to computer applications in hospitals.

Two projects (merged into one ultimately) deal with medical record computerization. The Universities of Leuven, Brussels, Gent, and Louvain are involved in this (p. 109).

The other project, handled by the Universities of Gent and Leuven, studies computer applications for managerial purposes in hospitals (p. 109).

NATIONAL INSTITUTES

Institute for Tropical Medicine (Instituut voor Tropische Geneeskunde). This Institute, based in Antwerp, has a unit for research and education in public health with a staff of four and is directed by Dr P. Mercenier and Dr H. Van Balen.

It reports research on:

1. Health care organization in Central Africa (mainly Zaïre).
2. Evaluation of the effectiveness of TB control in the province of Antwerp.
3. Influence on health care of the association to general practice of a social worker.
4. Organization of the teaching practice of general practice at the University of Antwerp.
5. Survey on the participation of the population to existing immunization programmes in Belgium.

INDEPENDENT AGENCIES

Flemish Scientific Association for General Practice (Vlaamse Wetenschappelijke Vereniging voor Huisartsengeneeskunde). This Association mainly organizes together with the universities continuing education for primary care.

Recently the Association has also started a demonstration study on integrated home care with support of the Ministry of Health and Family and a major sickness fund.

Group for the Study of the Reform of Medicine (Groupement d'étude de réforme de la médecine: GERM). This action-oriented group is regularly emitting newsletters and organizing forums and discussion groups on health services problems. Occasionally these activities are backed up by studies which have potential to be developed into health services research projects.

White-Yellow Cross (Het Wit-Gele Kruis). This home nursing association is moving, through its affiliation with the Christian sickness fund, one of the major sickness funds, towards integrated home care. It is becoming a partner in home care related research.

General Union of Nurses in Belgium (Algemene Unie der Verpleegsters in België). This professional association was contracted in 1973 by the Ministry of Health and Family to study the role of nurses in health care. Apparently the study has not started yet.

HEALTH SERVICES RESEARCH PROJECTS

ECONOMY-ORIENTED HEALTH SERVICES RESEARCH (18)

Reflecting on social security policy

This project was completed in 1973 by G. Spitaels, director of the *Centre for Social Economy* at Brussels University.

This retrospective and prospective descriptive developmental research was sponsored by the Belgian Service for Productivity Improvement. Part 1 of the study describes the evolution of social security in Belgium and reflects on the current problems and the future of social welfare.

Part 2 analyses health insurance in Belgium and discusses in terms of feasibility alternatives for certain elements of the current system: limiting the coverage by insurance; changing the supply and delivery of medical care; changes in the health insurance structures.

Part 3 analyses the pension system. This part is outside the scope of the present report on health services research (16).

Spatial analysis of health care provisions in economically depressed regions

The *Research Unit for Medical Sociology* of Louvain University undertook this project in 1967-8.

The objective of this retrospective, descriptive, and analytical developmental research was to document the technical, financial, and manpower needs of the different public and voluntary organizations delivering curative or preventive care in the regions marked for economic development.

An analysis was made of existing economic and other relevant data. This analysis was complemented by interviews of selected individuals.

The cost of cardiovascular diseases

This project was undertaken in 1967-9 by J. Descy, C. Mission, M. C. Dancot, C. Moraux, and F. Desgain of the *Research Unit for Medical Sociology* of Louvain University.

The project received a grant from the Ministry of Social Welfare. The objective of this retrospective, descriptive, and analytical, developmental research was to determine at different stages of cardiovascular illness the expenditures covered respectively by social security, health care services, the patient, and his relatives.

In a sample of 120 patients, 86 were interviewed with a standard questionnaire over a period of two months. The related health services, health care providers, and patient relatives were surveyed for the relevant data on expenditures and coverage.

The authors make recommendations to enlarge coverage by social security and to equip home care services for the care of cardiovascular patients (12).

The cost of X-ray diagnosis in in-patient and out-patient care

This project was undertaken in 1969-70 by J. Descy, M. C. Dancot, and A. M. Lizen of the *Research Unit for Medical Sociology* of Louvain University with a grant of the Ministry of Social Welfare.

This retrospective, descriptive, and analytical, developmental research intended to determine the costs of X-ray diagnosis, their coverage by social security and their relative importance for major disease categories. The study was undertaken in St Peter's Hospital in Ottignies-Belgium on the activities of the department of radiology during April and May 1968.

The authors present findings on the utilization, on the cost aspects and on the financial implications for social security of X-ray diagnosis (20).

The physician facing the Common Market

This doctoral study by D. Delière-Rott was published in 1967. It was undertaken with support of the National Foundation for Scientific Research and a travel grant of the World Health Organization.

The main objective of this prospective, comparative, developmental research was to determine the effect on the medical profession of the provision of the Treaty of Rome, which, if ultimately im-

plemented, will permit physicians to practise in all member-states of the European Economic Community.

The author analysed demand for medical care by reviewing results of surveys around the world concerning the impact of demographic, economic, socio-cultural, and environmental factors. This analysis indicated the need for more comparable and specific data and *ad hoc* surveys in the six countries involved.

Supply of medical care in the six founding members of the EEC was also reviewed and medical density was explored by use of multiple regression analysis on the factors affecting distribution of physicians.

The author offers perspectives for future demand and supply of physician's services in the EEC predicting important cultural barriers to the impact of an eventual opening of the borders under the application of the Rome Treaty provisions. However, due to economic discrepancies, some migration of physicians is predicted, mainly coming out of Italy and going to France (6).

Comparison of medical fees in Europe

This study was undertaken in 1973 by D. Deliège-Rott of the *Research Unit for the Medical Market* of Louvain University.

This retrospective, comparative, and developmental research was undertaken for the six founding member countries of the EEC at the request of the European Union of Medical Specialists in view of defining its strategy regarding the draft-directives for free circulation of medical specialists in the EEC.

Salaries of four types of contractual physicians: civil servants, university professors, university assistants, and social security officials were compared. Two hundred and twenty items of medical care grouped per specialities were also compared to explore differences in fee-for-services remuneration. The comparison revealed a high degree of variation between the countries concerned: for certain specialities a variation from 1 to 4 of the indices calculated.

Such variation is bound to play a role once the opening of frontiers for the medical professions is implemented in the EEC.

Time budget of Belgian physicians

This project in progress is undertaken by D. Deliège-Rott and X. Leroy of the *Research Unit for the Medical Market* of Louvain University.

The study is supported by the Ministry of Health and Family and the National Foundation for Scientific Research.

The main objective of this prospective, descriptive, analytical, basic research is to develop a more accurate yardstick of supply of medical service. The traditional unit of measurement: a 'physician-equivalent' covers a wide range of possibilities and is considered insufficiently sensitive to compare different supply situations.

By analysing time utilization of different categories of physicians (specialty–location–status–age–sex) the authors attempt to develop a more sensitive instrument.

A sample of physicians are recording in a standardized logbook their daily activities on an hourly basis in a matrix of categories of main activities covering twenty-four-hour periods for two weeks.

These findings are complemented by a structured interview covering time utilization not entered in the logbook and seeking to document those variables which affect the time utilization of physicians: medical specialty, hospital privileges, teaching assignments, board certifications, career history, annual vacations, availability during nights and weekends, number of places of practice, payment system, supportive staff, and arrangements for seeing patients.

The growth of medical manpower

D. Delière-Rott of the *Research Unit for the Medical Market* of Louvain University, is regularly undertaking prospective, descriptive, and analytical developmental research on medical manpower in Belgium.

Using data on existing medical manpower, on attrition through death and on increase through output from medical schools, the author confronts a set of possible supply situations in 1980 with a set of possible demand situations calculated on trend projections of expenditures for medical care (7).

Regional analysis of medical consumption, need, and supply

This project by D. Delière-Rott of the *Research Unit for the Medical Market* of Louvain University is currently being considered for sponsorship by the State Secretariat for Scientific Policy and Programming within the 1974–6 special research programme for social policy (p. 71).

The objective of this retrospective and prospective, descriptive

and analytical developmental research is to determine the regions with over- or under-use of medical care and to explore the reasons why. Demand on a regional basis will be assessed through a family health survey and by analysis of available relevant statistics. Supply of medical care will also be expressed in regional terms. Problem areas will be identified by confronting regional demand and supply. The study is scheduled to require three years.

Analysis of supply and demand of medical care

This prospective, descriptive, and analytical developmental research project has been introduced jointly by the *Centre for Social Economy*, the *Centre for Sociological Studies of Health*, and the *Centre of Demography* of Brussels University. The project is currently being considered for support by the State Secretariat for Science Policy and Programming within its 1974-6 special research programme for social policy (p. 71).

The project intends to expose unmet need for medical care and to identify national and regional problem areas.

Selected aspects of use, supply and related expenditures of medical care will be analysed in view of defining indicated corrective action.

Influence of physician payment systems on the utilization of medical care

This doctoral work in progress is undertaken by R. Zwaenepoel at the *Department for Hospital Administration* of Leuven University.

This retrospective, comparative, developmental research is supported by the University.

Its main objective is to explore to what extent the difference in payment systems of general practitioners in Belgium and the Netherlands is responsible for differences in medical care utilization and medical care expenditures in the two countries.

The central hypothesis is that different utilization patterns exist in the two countries. The *per capita* payment system of GPs in the Netherlands favours referrals to specialists in hospitals and hence more expensive care versus the fee-for-service system in Belgium, favouring ambulant care by GPs.

A number of comparable general practices in Belgium and the Netherlands will be surveyed through questionnaire and participant observation regarding differences in resources, in resource utilization, and in care and referral patterns.

Trend analysis will be made of utilization of care by comparable groups of consumers in Belgium and Holland.

Total health care costs in both countries will be confronted with the central hypothesis.

Costs of personal health care

This project was undertaken in 1971-2 at the *Department for Hospital Administration* of Leuven University.

This retrospective, comparative, and developmental research was undertaken by A. Prims and P. Quaethoven and supported by a £3,300 grant from the Ministry of Social Welfare.

The main objective was to compare international studies on costs of personal health care and to identify relevant parameters of health care costs. A sub-objective was to explore to what extent the statistical base in Belgium could respond to information requests regarding the identified relevant parameters and indicated research methodologies. The approach in this study was mainly based on review of literature, documented evidence and visits to health cost-oriented research centres abroad.

A list of factors determining health care use (with exclusion of drug consumption) is presented (13).

Determinants of the use of medical care

This project is in progress since 1972 at the *Department for Hospital Administration* of Leuven University.

This retrospective, comparative, and developmental research undertaken by A. Prims and P. Quaethoven is supported by a £3,300 grant in 1972-3 and a £2,200 grant in 1974 from the Ministry of Social Welfare.

Following up on the previous project this intends to present an inclusive list of determinants of medical care utilization. These determinants will be evaluated on their potential for assessment through household survey and through reliable and available statistics. Determinants which qualify on these criteria will be classified to the extent that they show potential for manipulation towards cost containment.

The model will be applied to a given region of Belgium.

The main approach in this project is use of literature, documented evidence, and statistical data.

Cost studies of selected hospital services

Since 1966 the *Department for Hospital Administration* of Leuven University has started a major research effort to investigate hospital costs and hospital cost evolution in Belgium.

This project has been commissioned and supported by the Ministry of Health and Family to the amount of about £10,000 on a yearly basis. Over the years, the research staff has included J. Blanpain, L. Groot, M. Van Kordelaar, M. Maes, N. Kempeneers, E. Baeten, R. Zwaenepoel, L. Delesie, F. Simaey, L. Cannoodt, and W. De Maesschalck.

The main objectives of the project are:

1. To develop a picture of hospital costs in Belgium, starting from the uniform accounting scheme introduced in 1965.
2. To analyse and identify the cost-provoking elements.
3. To investigate possible trends.
4. To develop recommendations based upon 2 and 3.

As such, the research project, which started out as retrospective descriptive has gradually evolved as analytical and developmental—mainly the development of cost-evaluating instruments—and will be analytical and applications-oriented as of 1975 with a view to the recommendations to be put forward.

The techniques being used follow parallel patterns: major effort has been spent during the first five years with the collection of the data for the hospital services selected; as of 1971 the analysis performed on these data was primarily of a statistically descriptive nature; gradually and recently the development of econometric models by way of multivariate analysis and factor analysis has gained importance.

Although the project is primarily limited to the non-medical aspects of hospital operations, it is nevertheless pioneering in coming to grips with the still so far uncontrolled even undocumented hospital costs expenditures in Belgium and with the development of management tools in this respect.

Income and expenditures of Belgian social security 1976–80

This project in progress directed by R. Boelaert is undertaken together with L. De Vlieger and M. Festjens at the *Centre for Economic*

Studies of Leuven University. The project is financed by the State Secretariat for Science Policy and Programming within a simulation study on fiscal policy.

The objective of this prospective, analytical, and developmental research is to develop and demonstrate a scientific method to predict future income and expenditures of social security in Belgium.

By using regression analysis and simulation techniques the authors applying their model on social security for wage-earners are predicting 1980 expenditures to overtake social security income considerably for the sectors sickness and unemployment insurance. The sector family allowances on the other hand will experience important surpluses. For the old age allowance sector, the situation is less clear.

Economic aspects of mental health care

This study in progress is undertaken by J. Baudour at the *Laboratory of Epidemiology and Social Medicine* of Brussels University.

This retrospective, descriptive, and analytical developmental study supported with a grant from the Julie Renson Foundation attempts to compare costs of conventional intramural care with costs of extramural care. A patient survey was made in nine psychiatric hospitals indicating that by comparing 1950 and 1965 the expected drop in duration of stay had not materialized. Cost analysis in one hospital indicates that case accommodation costs are substantially higher in conditions of patient seclusion compared to open wards (2).

Social planning

This project was undertaken by H. Deleeck, V. Van Hoebeke, and J. Vrancken of the *Centre for Social Policy* of the University of Antwerp.

This prospective, comparative, developmental research mainly explored literature to define social planning and to describe the methods and techniques of social planning.

The study is prospective through its emphasis on futurology as a method to explore expected evolutions in society. It is also comparative through the interest devoted to the analysis of efforts in social planning both in communist and capitalist countries (5).

Physician's income in Europe: comparison of the level of earnings

This retrospective, comparative, and developmental project has been undertaken by D. Deliège-Rott of the *Research Unit for the Medical Market* of Louvain University.

Actual income of physicians in the nine countries of the EEC are compared along the following lines:

1. Estimates on basis of sums devoted to medical care by the sickness funds.
2. Estimates on basis of data out of income tax returns.
3. Estimates based on national accounts.
4. Estimates based on private surveys.

Averages are then computed as well for gross turnover as for net income, separately for free practitioners and salaried doctors, for GPs and specialists.

The data all refer to the same reference year and are converted in different European currencies.

Results show large differences from one country to another.

ORGANIZATION-ORIENTED HEALTH SERVICES RESEARCH (18)

A prospective analysis of systems of health care

This prospective, descriptive basic research by D. Deliège-Rott of the *Research Unit for the Medical Market* of Louvain University, prepared in 1972, is based on literature and attempts to develop a matrix identifying four periods in the history of curative medicine: a magic period, artisanal period, industrial period, and a coming period of solidarity. The matrix relates the four periods to a number of characteristics: knowledge, dominant science, concepts of aetiology, diagnostic and therapeutic actions, information systems, working conditions, professional image, status, payment system, objectives, and values.

The author seeks rational and empirical evidence for the projected evolution in general evolutions outside and specific evolutions within the medical profession.

Integrated medicine: its objectives and effectiveness

This prospective, descriptive, developmental study of D. Delière-Rott of the *Research Unit for the Medical Market* of Louvain University is based on literature and presents a detailed model in which group medicine is described in general objectives, specific goals, indicated programme activities, and required evaluation methods by type of programme activity.

Innovative in this particular approach is the inclusion of patient and physician comfort and satisfaction next to the quantitative and qualitative appraisal of services rendered (8).

Computerized medical record

This project in progress since 1971 is a sub-project of the *Inter-university Project on Computer Applications in Hospitals*, supported by a £209,000 grant for a three-year period from the State Secretariat for Science Policy and Programming.

J. Haxhe and L. Lambotte of Louvain University, J. Joossens and Debruyn of Leuven University, R. Wieme of Gent University, and A. Verniory, P. Leclercq, M. De Meester, and S. Orloff of Brussels University are the principal investigators of this prospective, experimental, applications-oriented research.

The main objective of the project is to develop a discharge summary of the medical record useful for health care management, patient care, teaching, and research purposes. Secondary objectives are: automated bedside data acquisition; dedicated medical records for intensive care; records for respiratory and metabolic diseases; integration of clinical laboratory data in the general medical record; critical medical data. A major spin-off of this project so far has been a more closer contact between research efforts previously undertaken independently of each other.

Computer application for managerial purposes in hospitals

This project in progress since 1971 is a sub-project of the *Inter-university Project on Computer Applications in Hospitals*, supported by a £92,800 grant for a three-year period from the State Secretariat for Science Policy and Programming.

R. Wieme and J. Van Egmond of Gent University and J. Peers, R. Robeyns, and J. Willems of Leuven University are the principal

investigators of this prospective, experimental, applications-oriented research.

The main objective of the project is to develop the following sub-systems of a hospital information system: admission planning, bed reservation, bed occupancy, drug distribution (Leuven University); maintenance planning, personnel administration, materials handling, and accounting (Gent University).

So far drug distribution, admission planning, personnel administration, and materials handling have progressed to the point of implementation in the participating university hospitals.

Health services research in EEC countries

This retrospective and prospective, descriptive and analytical developmental research reflected in this report was undertaken in 1973-4 by the *Institute for European Health Services Research* of Leuven University with a £8,908 grant from the Nuffield Provincial Hospitals Trust. The research staff included J. Blanpain, L. Delesie, and T. Vanheusden.

Comparative study of hospital legislation in the EEC

This study in progress since 1973 is undertaken by A. Prims, A. Aernoudt, A. Roelens, and L. Versluys of the *Institute for European Health Services Research* of Leuven University.

This retrospective and prospective, comparative and developmental research is supported by the Council of Europe, the Directorate General for Social Affairs of the EEC, Siemens, Janssens Pharmaceutica, and Philips for a total amount of £23,700.

The opportunity for the project is given in the recent and substantial changes that occurred with respect to hospital legislation and regulation in nearly all member countries of the EEC.

The objective of the project is to make a comparative analysis of:

1. The definition of the hospital and the specification of its role and this in the framework of the national health care delivery system.
2. The relationship between the privately owned hospitals and the publicly owned hospitals.
3. Hospital planning.
4. The regionalization and the hierarchical diversification of the national hospital system.

5. The establishment of new hospitals; especially governmental permissions necessary and subsidies at hand.
6. Governmental approval for patient care purposes as well as for financial purposes.
7. The internal organization of hospitals.
8. Hospital costs.
9. Effect of the social security system upon the hospital operations and conversely.

Particular attention will be given to the implementation of the legislation and to the potential for harmonization within the EEC.

Analysis of documents and reports and visits to the countries involved are the main methods for this study.

Development of hospital facilities under conditions of limited resources

This project is currently in the design phase at the *Institute for European Health Services Research* of Leuven University.

The objective is to develop methodologies in terms of indicated structures and processes effective and feasible under conditions of limited financial, technical, health manpower and management resources. Development of hospital facilities will be studied at the national, regional, and single facility level.

WHO has indicated interest in this project.

Medical staff organization in hospitals

This project was undertaken in 1973-4 by the *Department for Hospital Administration* of Leuven University.

This retrospective, descriptive, and analytical development research was conducted by J. Blanpain and P. Quaethoven with a £2,000 grant from the Hospital Association of the Catholic Charities.

The objective of the study was to explore to what extent principles of medical staff organization proposed by the Hospital Association were implemented in leading member hospitals, in view of adjusting the Association's policies.

Three hospitals were studied through interviews, with standard questionnaires, of Board members, management, and staff represen-

tatives. The findings revealed a discrepancy between the Association's position and actual medical staff organization. Problem areas were identified and an explicit medical staff organization model was recommended.

The position of the hospital physician in the countries of the EEC

This doctoral work was complemented in 1969 by P. Quaethoven at the *Department for Hospital Administration* of Leuven University.

This retrospective and prospective, comparative and developmental research was supported by the University and sponsored by the Hospital Committee of the EEC.

The main objective of the study was to analyse the position of physicians in hospitals in the six countries of the EEC and to explore the potential for a comparable position in view of the provision of the Treaty of Rome to proceed eventually towards a free circulation and freedom of establishment of health workers. Using documented evidence and information through interviewing as the main input to this end the author presents per country a detailed description, of the year 1969, of the hospital system and legal, organizational, and financial status of physicians within that system. This picture is confronted with the relevant provisions of the EEC, also 1969, leading to a series of conclusions and recommendations regarding an eventual European statute of the hospital physician (14).

Hospital discharge abstract analysis: a tool for professional activities study

This project was undertaken in 1967-72 by the *Department for Hospital Administration* of Leuven University.

This prospective, experimental, applications-oriented research was supported by a £31,000 grant of the Ministry of Health and Family. The research staff included J. Blanpain, N. Degendt, M. Van Kordelaar, M. Maes, J. Rampelberg, L. Van Parijs, and G. Craenen.

The main objective was to develop and demonstrate a medical record discharge abstract system for professional activity evaluation in hospitals. In a first phase, a medical record discharge abstract system was developed for obstetrical care and well baby care in five maternity hospitals. After effective implementation in these maternity hospitals the scope of the system was enlarged to general

hospitals for which the needed instruments and organizational infrastructure were developed.

At the end of this mainly feasibility-oriented study ten general hospitals were brought to the point of routinely participating in a joint discharge abstract system on a central computer, thereby serving as a nucleus for further growth in number of participating hospitals.

Planning and financing of hospital facilities

This project was undertaken in 1971-2 by the *Department for Hospital Administration* of Leuven University.

This retrospective, descriptive, and analytical applications-oriented research was supported by a £2,500 grant from the Hospital Association of the Catholic Charities.

The research staff included J. Blanpain, N. Kempeneers, and R. Zwaenepoel. The main objective was to identify problem areas and bottlenecks in the implementation of regulations and procedures for hospital planning and financing. A sample of twenty-nine public and private hospitals were surveyed by questionnaire and by interviews of management representatives. These findings were confronted with government regulations and data on hospital planning in progress indicating serious discrepancies between practice and theory.

Systems analysis of the nursing unit

This project was started in 1971 by the *Department for Hospital Administration* of Leuven University in view of the clear-cut request by the Minister of Health and Family to develop solutions with respect to nursing problems in Belgium.

This research is commissioned and supported by the Ministry of Health and Family with a yearly grant averaging £18,000.

The research staff includes J. Blanpain, L. Delesie, Th. Rodenbach, M. Grijpdonck, G. Koene, and L. Vermijlen.

The methodology of this prospective, partly analytical, partly experimental, developmental, and very much applications-oriented research consists of:

1. A problem formulation (1971-2) with respect to the nursing problem in Belgium. This problem formulation concentrates deliberately on problem variables: schooling of nurses; training of nurses; interdependency of different types of nurses on the nursing units; control of the nursing workload on the nursing units; feed-

back with respect to nursing; legal constraints with respect to the nursing profession.

2. A problem-solving stage (1973) based upon the problem formulation developed, an in-depth study and evaluation of solutions developed in other countries, and an in-depth discussion about possible alternatives with a project advisory committee, constituted by responsables and experts in the field. The solution developed through concentrating on the nurses and the nursing unit also pays great attention to the integration of the nursing task within the total hospital context. The solution includes the general framework for the nursing task in the hospital as well as the instruments to realize this framework.

3. A solution implementation stage (1974-5). A pilot experiment is run under controlled conditions by the research staff to generate the criteria and constraints for widespread implementation of the solution proposed. Based upon the evaluation of this experiment, a refined solution will be introduced and partially supervised by the research staff in another five Belgian hospitals, which should provoke the necessary impetus for general dissemination.

Major difficulties were met with the development and implementation of the day-to-day nursing management instruments which have to safeguard the research project's ultimate objectives. The myriad of small nitty-gritty problems which have to be solved by the many and differently trained staff members in a real-life situation and on an *ad hoc* basis also puts stress on the over-all co-ordination of the project and the project's objectives. Nevertheless, the preliminary results which have been obtained so far, look promising.

Health insurance in the EEC

This doctoral work by J. Van Langendonck was completed in 1971 at the *Department of Social Security* in the Leuven University Law School.

This retrospective and prospective comparative development research was supported by the University and mainly used documented evidence and statistical analysis.

The first part of the study describes for the six countries of the EEC, the background, the structure, the financing, the spectrum of coverage, and the relationship with providers of health insurance.

A second analytical part explores major common characteristics

and the major differences of the six systems with respect to the points described in the first part.

A third part analyses the trends in each system and the potential for harmonization.

The concluding part formulates a proposal to arrive at harmonization of health insurance within the EEC.

This study was made before the enlargement of the EEC and has been updated to include the UK (19).

Medical control in social security

This doctoral work by K. Schutijzer was finished in 1974 at the *Department of Social Security* in the Leuven University Law School.

This descriptive and analytical developmental research was supported by the University.

Its main objective was through the study of legislation, regulations, and documented evidence to situate and assess the role of controlling physicians within social security in general and health insurance in particular.

The author comes to grips with relating administrative controls of physicians providing care to insured patients and peer control of the content and processes of patient care (15).

Hospital building for developing countries: a systems approach

This doctoral work by E. Miko was completed in 1973 at the *Unit of Health Facilities Architecture* of Leuven University.

The study was supported by the University and a grant from the International Hospital Federation.

This descriptive and analytical basic research aimed at developing an integrated programming, a design and a building system with a maximum use of modular approach, departmental standardization, and communication networks in terms feasible for countries with limited resources (11).

Multifactorial prevention of coronary heart disease

This seven-year project started in 1972 and is jointly undertaken by the *Department of Social Hygiene and Social Medicine* of the State University of Gent and the *Laboratory of Epidemiology of Brussels University*.

This prospective, experimental, applications-oriented research is

supported by the Foundation for Medical Research and World Health Organization. Two groups of 10,000 men aged 40-59 years and chosen at random in forty industrial communities will be studied.

They will receive two different types of screening and preventive programmes and their morbidity and mortality will be followed during five years. This national project is part of an International Collaborative Study of which the common research brief was set up under WHO guidance.

Cure and care organizations for the aged in the Eeklo region

This project was presented in 1973 as a master degree thesis by M. Fiers at Leuven University. It was realized under the sponsorship of the *Department of Social Hygiene and Social Medicine* at the State University of Gent.

The objective of this prospective, descriptive, and analytical applications-oriented research was to develop a regional care plan for the aged in the Eeklo region.

The author surveyed the existing housing, care, and cure facilities for the aged and interviewed by questionnaire 1,000 citizens sampled by multistage cluster sampling. Opinions and attitudes of general practitioners were also surveyed. Finally, opinions of individuals in charge of facilities or organizations for the aged were interviewed.

The project required substantial computer processing.

It offers recommendations regarding housing and extramural and intramural provisions for the aged in the Eeklo region.

Evaluation of the effectiveness of school health programmes

This project in progress since 1971 is undertaken by the *Laboratory of Epidemiology and Social Medicine* of Brussels University.

The University supports this retrospective, partly descriptive and analytical, partly experimental research undertaken by M. Graffar and J. Decrucq.

In a first phase, parents of second-grade schoolchildren, were interviewed by questionnaire on the implementation of recommendations made to them on the occasion of the school health examination of their child. It was found that 50 per cent of the

recommendations were not followed mainly by lack of follow-up by the school nurse in charge.

In a second phase, now in progress, the impact of the revised operation of the school health programme is being evaluated.

SOCIOLOGY-ORIENTED
HEALTH SERVICES RESEARCH (32)

Handicapped persons in society: a sociological approach

This project was undertaken in 1969 by the *Department of Medical Sociology* of Leuven University together with the *Inter-university Study Centre of Haemophilia*.

The research staff included Y. Nuyens and R. Creyf.

The project was sponsored by the Foundation for Collective Fundamental Research.

This prospective, descriptive and analytical, developmental research attempted to make the concept of 'sick-role' manageable for members of an interdisciplinary team giving care to haemophiliacs.

Interviews and participant observation were used in the Haemophiliacs Clinic at the Leuven University Teaching Hospitals to analyse positions of patients and care team members. Differences and relationships between positions as perceived by the participants were sociologically reduced into new relationships and differences.

The sociological approach resulted in reducing the importance granted to specific differences between the haemophilic population and the total population (4).

The situation of the general practitioner in Belgium: a sociological investigation

This doctoral work was undertaken in 1969-72 by M. Bracke-Defever in the *Department of Medical Sociology* of Leuven University. As a doctoral student, the author was a grantee of the National Foundation for Scientific Research.

This prospective, descriptive and analytical, developmental research attempted on the one hand to explore the opinions of general practitioners about their own practice and primary care in Belgium's health care; on the other hand, a more objective picture was sought of their daily workload and the distribution of their activities.

The project was divided into two parts:

1. An in-depth theoretical study, based on secondary documents, defining the problems of the general practitioner in a sociological way.
2. Interviews of 300 GPs in the Belgian provinces of Antwerp and Brabant. The GPs were interviewed in their homes by graduate students in sociology. Structured questionnaires were used for that purpose. Data were coded and processed by computer. Interpretation and description of the findings supplemented with sociological comments concludes this part.

Medical sociology in Europe

In 1970, Y. Nuyens, director of the *Department of Medical Sociology* of Leuven University made a study under a WHO fellowship of medical sociology in England, France, the Federal German Republic, and Poland.

This comparative, developmental research used interviews and analysis of secondary sources to explore the organization, orientation, and financing of research in medical sociology.

It also attempted to gain insight into the role and place of sociology and sociologists in medical schools and of medical sociology programmes in schools of sociology.

The findings were intended to influence and inspire policy proposals in Belgium with respect to medical education programmes and the development of research in medical sociology.

An exploratory research of three mental hospitals

This project was undertaken in 1970-1 by A. Ampe in the *Department of Medical Sociology* of Leuven University with resources of the University.

The objective of this comparative, developmental research was to explore and compare both the organization and the in-patient load of the three institutions.

An analysis of literature on mental health care in Belgium, interviews of the hospital managers and analysis of patient records were the methods used for this study which results in a number of general findings and indications for further and more structured research (1).

Socio-cultural determinants of illness and health behaviour

This four-year project in progress started in 1972 in the *Department of Medical Sociology* of Leuven University.

The research staff includes Y. Nuyens, L. Behets, M. Ledoux, and L. Vermost. The project receives yearly a £6,500 grant from the Foundation for Medical Research.

This prospective, descriptive and analytical, developmental research attempts to explain differential illness behaviour existing in the preventive sphere versus behaviour in the curative sphere.

Other factors besides strict morbidity factors seem to interfere at least in the preventive sphere.

The project started with an analysis of relevant literature on differential illness behaviour and differential demand of medical care.

The later phases include a mail-survey, as pilot study, during a cancer screening programme in a local community. This pilot study will be used to determine the exact frame of reference of the study and its observational characteristics (3).

Patient's evaluation of general practice

This three-year project in progress started in 1972 is a follow-up on the doctoral work by M. Bracke-Defever at the *Department of Medical Sociology* of Leuven University.

The project staff includes M. Bracke-Defever, Y. Nuyens, and A. Ampe and receives yearly a £2,600 grant from the National Foundation for Scientific Research.

This prospective, descriptive, and analytical, developmental research attempts to validate through interview of a sample of patients' hypotheses regarding primary care resulting from the previous study. Does the patient perceive the traditional primary care as problematic? Which role expectations regarding primary care are formulated by patients? Are these role expectancies congruent with the GP's concept of his own role and function?

The team hopes to be able to formulate recommendations for health care policy and medical education.

Career profiles of nursing personnel

This project was undertaken in 1970-1 by the *Centre for Social Economy* at Brussels University.

The research staff included J. Orenbuch and M. Bala-Dossogne. This contract research received a £21,000 grant from the Ministry of Health and Family.

This prospective, descriptive and analytical, developmental research attempted to identify and analyse factors influencing turnover of nursing personnel and to relate these findings to nurse role perceptions by nurses on the one hand and by nurses educators, employers, professional leaders, and union leaders on the other hand.

The over-all findings were intended to be used for policy recommendations.

Use was made of a standardized questionnaire administered to a total of 526 nurses in three representative subsamples of 250 nurses each for the graduating years 1951, 1959, and 1967.

In addition, 10 directors of nursing schools, 19 employers of nurses, and 6 leaders of professional associations were interviewed.

The findings indicate abandonment of nursing by 7 per cent in the youngest cohort to 24 per cent in the oldest cohort. Registered nurses (A1) abandon hospital nursing but continue professional activity outside hospitals versus practical nurses (A2) leaving both hospital and profession. Basically, incompatibility between professional life and private life is at the origin of the turnover.

The supply of nursing personnel

This project is a follow-up on the previous study (p. 119) undertaken in 1972-3 by the *Centre for Social Economy* at Brussels University. The research staff included J. Orenbuch and S. Lambert.

The project received a £21,000 grant from the Ministry of Health and Family.

This prospective, descriptive and analytical, developmental research proceeded to analyse the output of nursing schools during the period 1950-71 with an increase substantially overtaking the demographic evolution even more marked in the Flemish part of the country. Important shifts in RN/PN ratios and sex-ratios are commented upon. In addition a representative sample of 1,200 nurses graduated between 1963 and 1967 was selected for interview with a standardized questionnaire which was administered to a total of 804 nurses.

The data were tabulated and analysed including a cluster analysis between factual findings and motivations.

Career profiles indicate that one-third of the nurses have left nurs-

ing after a career of nine years; this attrition doubles after nineteen years. Already after five years, half of the nurses have left hospital work. Motivations centre upon a constant search for better working conditions more compatible with the requirements of family life. The authors recommend a series of measures to improve the situation: organizing part-time employment, installing a network of day-care centres for children of nurses, organizing regular working schedules with pool nurses, reorganizing the care process by introducing real health care teams, improving the image and the status of the nursing profession, offering vertical mobility and career prospects.

The authors also strongly recommend improving the statistical base by installing a triple national register on nursing personnel, nursing vacancies in health care facilities, schooling capacities.

The Belgian physician: self-evaluation of role components

This doctoral work in progress by W. Prove was started at the *Department of Statistics* at Gent University. It is currently being continued at Leiden University, Netherlands.

This prospective, descriptive, and analytical developmental research focuses on the process of professionalization of physicians which is seen as the combined result of successive processes of informal and formal inputs from the psychosocial environment and the training situation. This process is considered as inadapted for the indicated doctor-patient relationship.

The author surveyed a sample of 1,654 Belgian doctors including GPs and specialists confronting them with a number of statements on physicians. His objective is to relate the self-evaluation of the surveyed physicians to the sociological variables which seem to determine the professionalization. Using factor analysis the author hopes to explain the physician's self-evaluation of his relations to patients.

Attitudes of the medical profession towards home care

This project was undertaken in 1967-8 by the *Research Unit for Medical Sociology* of Louvain University.

The objective of this prospective, descriptive and analytical, developmental research was to document attitudes and opinions of general practitioners regarding existing home care arrangements in

their region. A sample of French-speaking and Dutch-speaking general practitioners was surveyed by mail questionnaire and interviews.

Criteria for the rationalization of hospital care

This doctoral thesis of J. Descy was prepared at the *Research Unit for Medical Sociology* of Louvain University during the period 1965-9. The objective of this retrospective and prospective, descriptive and analytical developmental research was to determine criteria for a rational spatial distribution of hospital facilities in Belgium. An analysis was made of the geographic, demographic, medical, economic, social, and psychological factors which determine demand and supply of hospital beds.

Criteria for national hospital planning

This project was undertaken in 1966-8 by the *Group for Study and Research in Public Health: GEDERSAN* of Louvain and Brussels Universities. The principal investigators were M. Graffar and L. Heuskin of Brussels University and J. Delcourt and J. Descy of Louvain University.

The prospective, descriptive and analytical, developmental study was commissioned and supported by a grant from the Ministry of Health and Family.

The objective was to determine geographic, demographic, medical, and institutional parameters influencing current and future hospital utilization. Two comparable regions, one in Flanders: Hasselt-Bilzen-Lanaken and one in the Walloon part of Belgium: Dinant-Gembloux-Namur were identified by a geographic study. A demographic analysis indicated relationships between population structure and health care utilization.

An analysis of in-patient care characteristics during a three-month period permitted to verify findings of the demographic analysis and pointed toward the need for a more thorough in-patient morbidity and care analysis which was undertaken through mail questionnaires addressed to physicians on a voluntary basis.

Determining need for paediatric beds for 1980 in metropolitan Brussels

This study in progress is undertaken by the *Research Unit for Medical Sociology* of Louvain University.

The objective of this prospective, descriptive, and analytical applications-oriented research is to determine the need for eventual additional paediatric beds given existing and planned facilities.

A critical analysis is made of available data taking into account medical, social, economic, demographic, and geographic variables affecting paediatric hospital utilization.

Health indicators

The *Research Unit for Medical Sociology* of Louvain University reports ongoing comparative, developmental efforts to search literature on health indicators.

Criteria for regionalization of specialized hospital services

The *Research Unit for Medical Sociology* of Louvain University projects research to determine regional needs for specialized health facilities and health manpower.

This prospective, descriptive and analytical, development research will use visits to and inquiries regarding specialized hospital services complemented by interviews of different types of consumers.

Hospital development programmes for different regions

In 1969-70 the *Research Unit for Medical Sociology* of Louvain University undertook prospective, descriptive, and analytical and applications-oriented research for the hospital development programmes in the city of Tournai and the Marche-en-Famenne region.

Use was made of the principles and policies developed in previous developmental research (p. 122).

Hospital planning for the province of Brabant

This project was undertaken in 1968-71 by the *Group for Study and Research in Public Health: GEDERSAN* of Louvain and Brussels Universities. Principal investigators were M. Graffar and L. Heuskin of Brussels University and J. Delcourt and J. Descy of Louvain University.

This prospective, descriptive, and analytical applications-oriented research was commissioned and supported by a grant from the Ministry of Health and Family.

The objective was to determine planning criteria permitting the

Ministry of Health and Family to develop its hospital plan for the province concerned on a sound scientific basis.

Subsequently, analyses were made of: the general demographic and social characteristics of the in-patient population; the geographic origin of in-patients; the morbidity presented by in-patients; the hospital utilization patterns in the province; the availability of hospital facilities and planned increase; the demographic evolution of the province.

The authors present a synthesis of the different analyses and balance future supply and demand by estimating needed in-patients facilities per type of care.

Rationalization of the Catholic hospitals in metropolitan Brussels

This project undertaken in 1971-3 by the *Research Unit for Medical Sociology* of Louvain University applied findings of the GEDERSAN study (p. 122) to the hospitals concerned.

A similar approach was used to study renewal projects of several hospitals in the Walloon part of Belgium.

Planning health care facilities in the province of Luxemburg

The *Group for Study and Research in Public Health : GEDERSAN* reports research in progress to define the optimal structure of health care provisions in the thinly populated region of south Luxemburg.

In this prospective, descriptive, and analytical applications-oriented research, hospital utilization is studied by use of partially precoded questionnaires which are processed by computer.

This research is supported by a grant of the Ministry of Health and Family.

International study on hospital utilization

This retrospective, comparative, developmental study was undertaken in 1972-3 by GEDERSAN to evaluate hospital utilization in eight different countries.

After determining common measurement instruments, hospital utilization was determined for the year 1968 in a significant region of each country.

Mental health needs of in-patients in general hospitals

This project was undertaken in 1971-3 by GEDERSAN to determine the volume of mental illness accompanying somatic diseases in in-patients. This prospective, descriptive and analytical, developmental study was commissioned and supported by a grant of the Ministry of Health and Family.

A random sample of 712 in-patients was surveyed by precoded questionnaires administered by a team of three psychiatrists.

The sample was taken in services for internal medicine, surgery, extended care and nursing homes where mental illness is not systematically the indication for admission.

Sixty-six per cent of the patients surveyed were found to present psychopathological problems versus 15 per cent of them identified for mental illness by the hospital staff. The authors stress the need for better training of physicians in this respect.

GEDERSAN projects to undertake in 1974-6 a continuation of this study with a focus on victims of accidents.

Need for emergency services in metropolitan Brussels

This study in progress was undertaken by GEDERSAN in 1973-4 with a grant of the Ministry of Health and Family.

The retrospective and prospective, descriptive, and analytical applications-oriented research intends to determine the effectiveness of the 'free-call' emergency ambulance system and to predict indicated deployment of general and special ambulance services.

A retrospective and prospective analysis is made of the ambulance services.

Need for emergency mental health care in metropolitan Brussels

The group GEDERSAN projects to undertake in the period October 1974 to October 1976 a survey to determine the need for emergency assistance to critical mental illness in metropolitan Brussels.

The objective of the study is to formulate operational solutions.

Determining the hierarchy of urban centres in terms of social and economic level, accessibility, and availability of health care

In 1960 a detailed socio-economic and demographic analysis was made to rank urban centres and to determine those indicated for the location of hospital facilities.

The *Research Unit for Medical Sociology* of Louvain University in 1971-2 made a second analysis to determine the changes that occurred during the period 1960-70.

This retrospective, comparative, developmental research mainly used data-analysis. During the period 1975-6 it is intended to apply traffic flow methods to the data to determine the hinterlands for health facilities.

The sociological framework surrounding in-patients with special reference to conflicts

This descriptive basic research by D. Deliège-Rott of the *Research Unit for the Medical Market* of Louvain University presents an overview from literature on sources of conflict within hospitals and on general approaches to prevent and control conflict situations (9).

Health care

This project has been introduced by the *Inter-university Group for Education of General Practitioners*. It is seeking support from the State Secretariat for Science Policy and Programming within the 1974-6 special programme for social policy research (p. 71). The project intends broadly to explore in prospective, descriptive and analytical, developmental research, the structure, development, and functioning of primary care; its utilization by the public and the factors determining this utilization.

Specifically primary care supply and hidden need for primary care will be surveyed and related to health behaviour.

Attitudes and behaviour regarding health and disease

This project has been introduced by Professor Betz, O. Kutý, and J. Permolín of the *Institute of Sociology* of Liège University to the State Secretariat for Science Policy and Programming for funding within the 1974-6 special programme for social policy research (p. 71).

The objective of this prospective, descriptive and analytical, developmental research is in the first place to analyse attitudes and behaviour towards health care providers. In the second place; illnesses with important social impact will be studied regarding what conditions determine a perception of threat and what influences indicated behaviour.

Health and health care of migrant workers in selected EEC countries

This project in progress at the *Institute for European Health Services Research* of Leuven University, is supported with an £11,000 grant from the EEC. The objective of this prospective, descriptive, and analytical applications-oriented research is to explore indicated changes to improve accessibility to health care for guest-workers in Belgium.

Health care utilization by guest-workers will be analysed in view of difficulties arising from language problems, social and cultural differences, racial discrimination, etc. Data of social security, interviews of health care providers and case-studies of guest-workers will be used to formulate indicated structural and procedural changes.

Geel Family Care Research Project

The Geel Family Care Research Project is an international, inter-university, and multidisciplinary investigation being conducted since 1966 through the collaboration of *Columbia University* and the *University of Leuven* with and at the *State Colony for Family Care in Geel*, Belgium. The project is directed by Professor L. Srole of Columbia University, Dr J. Schrijvers (co-director), and Professor L. Lagrou (associate director) both of Leuven University. A large group of investigators including some doctoral students are collaborating in this project.

The project includes a wide spectrum of sub-projects from retrospective to prospective in the time frames, from experimental to descriptive, analytical and historical studies in terms of research approach and from basic to applications-oriented in terms of the orientation of the research.

The project has been supported substantially by the collaborating universities, the State Colony, the Ministry of Health and Family, and the Family Care Foundation, New York.

The Foundation for Collective Fundamental Research allocated

for the period 1969-73 a grant of £21,279. The National Institute for Mental Health, USA, supports the project in 1969-75 with a yearly grant of £12,900. The Leuven University research fund allocates a special grant of £8,000 for 1975.

The Geel Project started around the uniqueness of the 500-year-old foster family care programme for mental patients in Geel, Belgium (currently 1,550 patients in a population of 30,000).

The research project is structured into forty-four study units of varying operational magnitudes falling into six major categories of study objects as follows:

1. *Patient studies (P)*

P1. A prospective cohort of 72 patients at the time of first placement in a foster family and at later intervals of respectively 6 months, 1 year, 2 years, and 4 years.

P2. A retrospective sample of 48 patients differentiated by supervisory staff, into a 'most improved' group and a 'least improved' group.

P3. A sample of 24 discharged mental patients.

P4. State colony patient composition and movements (1961-71).

P5. Patients' incidents (suicides, accidents, pregnancies, etc.).

P6. Mental patients in non-state colony foster families.

P7. Patient 'drop-outs' from foster families in the period of prospective cohort testing (1967-71).

The main objective of the patient studies is to investigate the impact of foster family care on the patient and to assess this impact in comparison with traditional forms (intramural) of psychiatric care.

The patient change studies make use of sophisticated measurement tools some of which were specifically adapted or developed for the Geel project as:

(a) Wechsler Adult Intelligence Scale.

(b) Symptoms inventory (adapted from Burdoch).

(c) Social competence inventory (adapted from Vineland).

(d) Psycho-physiological conditions (adapted from Midtown Manhattan Interview Schedule).

II. *Foster Family (FF) Studies Structure and Process (F)*

F1. Home interviewing and *in vivo* behaviour observations of patient and foster families (32 families co-ordinate with P1).

F2. Home interviewing and *in vivo* behaviour observations of patients and foster families in 48 homes of the retrospective sample (co-ordinate with P2).

F3. Interviews on FF-patient severance crises (48 cases).

F4. Interview schedule with 580 foster mothers.

F5. Patient movement careers on a cohort of patients recorded at five-year intervals from 1915 to 1965.

F6. Qualitative ratings of 1,100 foster families.

F7. Demographic and family composition characteristics of Geel's 8,000 families that differentiate its (a) current FF, (b) ex-FF, (c) applicant FF, (d) all other families (national census of 1971).

This part of the project mainly tries to explore and document the characteristics and the dynamics of families adapting to a stranger presenting deviant behaviour which proved to be unacceptable and unbearable in his own family.

III. *History of Geel and foster care studies (H)*

H1. Period 1250-1790.

H2. Period 1790-1860.

H3. Period 1860-1960: internal developments.

H4. Period 1860-1960: international impacts.

H5. Period 1860-1960: structural aspects of Geel Family Care.

IV. *Studies of State Colony functions (S)*

S1. Economic aspects of the State Colony.

S2. Administrative organization.

S3. Legal conditions.

S4. State Colony regulations relating to patients.

S5. Previous proposals for State Colony change.

S6. Functions of supervising nurses.

V. *The Geel Community Studies (G)*

G1. Ecological structure.

G2. Economic structure and changes (1960-7).

G3. Impact of industrialization (1968-73).

- G4. Housing (1960-70).
- G5. Public health in Geel and two comparison communities.
- G6. Epidemiology of treated psychological problems in Geel and comparison community.
- G7. Patients in the churches.
- G8. Patients in lay organizations.
- G9. Patients in pubs and other recreational settings.
- G10. Patients in their interpersonal (extra FF) networks.

This part of the study aims at explaining how a community adapts to the deviant behaviour of a great number of patients living, circulating, and functioning in the community. Does it affect the mental health of the non-patients?

v1. Outsiders' and insiders' images of Geel (I)

- I1. Impact of outsiders' image on army draftees from Geel.
- I2. Impact on university students from Geel.
- I3. Geel's image in a sample of 3,600 Flemish candidates for compulsory military service.
- I4. Images of mental illness, mental patients, and foster family care as related to Anomia.
- I5. Geel's images and patterns of patient referrals from outside 'gatekeepers' (12 psychiatric social workers).
- I6. Geel's self-image in a sample of 108 foster families.
- I7. Geel's self-image in a sample of 200 Geel never-foster-families.
- I8. Geel's self-image in a sample of 16 local community leaders.

Most study units are essentially descriptive and the data analyses have been completed. The largest study unit entails highly complex quantifications requiring elaborate computer processing likely to continue to the end of 1974. While reports and books are coming forward as being produced into a series of five specialized monographs and one omnibus volume, an application for a five-year Demonstration and Evaluation programme has been submitted to the Ministry of Health and Family, Belgium. This Demonstration and Evaluation programme intends to apply findings and resulting recommendations of the Geel Family Care Project to a limited and well-defined section of the State Colony.

Motives determining use and abuse of alcohol, tobacco, and drugs among high school students

This project is in progress since 1971 at the *Laboratory of Epidemiology and Social Medicine* of Brussels University.

With resources from the University, M. Graffar, J. Sand, and J. Decrucq interviewed 4,000 high school students of the city of Brussels on their motives for eventual use or abuse of drugs, smoking, and liquor.

The data are currently being analysed.

Social indicators of health

This study has recently been completed by Th. Klein-Beaupain and G. Lefevre of the *Centre for Social Economy* of Brussels University. This descriptive and analytical basic research project was supported with a grant of the Belgian Service for Productivity Improvement. The project was seen by the authors as a first phase in a more ambitious long-term effort ultimately leading towards social accounting.

The authors have sought, after an analysis of the concept of social indicators, to develop indicators for the Belgian situation thereby using demographic data, mortality data, morbidity data, and medical care supply and demand data.

The authors stress the need for *ad hoc* surveys to supplement the insufficiency of routine statistics (10).

General practice and mental health care

This two-year project in progress started in 1973 in the *Department of Medical Sociology* of Leuven University.

The research staff includes Y. Nuyens, M. Foets, and L. Behets. The project receives a yearly grant of £25,000 from a private sponsor who does not wish to be identified.

This prospective, descriptive and analytical, developmental research attempts to explain the diagnostic and therapeutic behaviour of Belgian general practitioners when confronted with mental health problems.

A national sample of 500 general practitioners is surveyed by interview and recording of professional activities during a two-week period.

This project intends to offer basic findings for the formulation of recommendations for the structure of primary care and for the future education of general practitioners.

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FRANCE

HEALTH SERVICES RESEARCH SPONSORS

Health services research in France is primarily sponsored by governmental agencies through non-university related budgets. The role of independent foundations, professional organizations, or other associations such as hospital associations is very limited. The centralized set-up of French government in general is reflected in health services research, indeed most research is done in national government institutes.

Fig. 1 is a diagram of agencies sponsoring health services research in France. The nature of the institutional bodies and their objectives will be investigated below.

Governmental agencies

Office of the Prime Minister : Planning Bureau
(Commissariat du Plan)

The Planning Bureau is responsible for the production and the implementation of national plans for socio-economic development. The 'National Plans for Modernization and Investment' put forward the general executive guidelines which will be followed during a five-year period. The plan is voted annually by Parliament in the same way as the budget.

The annual budget stipulates the funds which will be allocated in order to implement the plan. Both plan and annual budget are the responsibility of the Prime Minister.

The First Plan (1947-52-3) did not deal at all with research

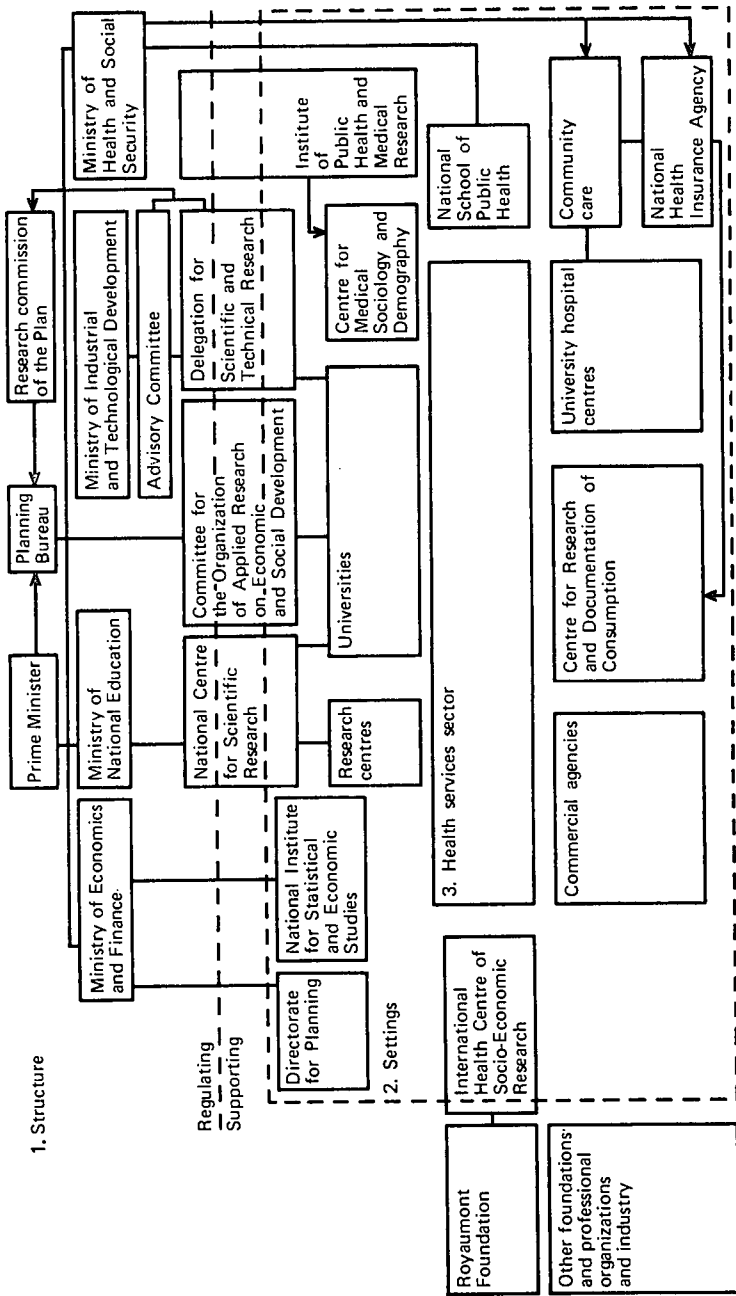


FIG. 1. Health services research in France.

related matters. The Second Plan (1954-7) indicated the general importance of a science policy. The Third Plan (1958-61) institutionalized the links between scientific research and planning policy. Two bodies were subsequently created:

1. Inter-ministerial Committee for Scientific and Technical research.
2. Delegation for Scientific and Technical Research. Both will be discussed.

The Fourth Plan (1962-5) established research as the single most important factor for national growth and development.

The Fifth Plan (1966-70) concentrated on basic research and the promotion of research results.

The current Sixth Plan (1971-5) underlines the need for mission-oriented research.

Research Commission of the Plan (*La Commission de la Recherche du Plan*). Each plan from the Second on has been prepared and guided by a Commission which outlines its research aspects. The last Commission was set up in October 1969. It has 48 members of whom 20 come from non-governmental agencies: 7 from the union organizations, 11 from financial circles, 2 from universities. The Commission's secretarial work is done by the Delegation for Scientific and Technical Research (p. 146).

The Commission's objectives are threefold:

1. To define an over-all research policy and its financial strategy with regard to the particular Plan.
2. To define the programmes for action and their respective budgets which have to be funded by the Delegation for Scientific and Technical Research (p. 146).
3. To co-ordinate governmental research policy with private research efforts in industry.

The Commission's work is passed on for implementation purposes to the Advisory Committee for Scientific and Technical Research of the Ministry of Industrial and Technical Development (p. 146) whose appointed members are also members of the temporary Research Commission of the Plan.

The Commission itself works through task forces:

Six Task Forces deal with general research problems, for example,

scientific policy, international programmes, research manpower, etc.

Eight Task Forces deal with national problems, for example, urban planning and public transportation, health, industrial research, etc.

Six Task Forces deal with disciplines, for example, information sciences, technology, etc.

The Task Force on health, for instance, has knowledge of all health services research sponsored by governmental agencies in France.

Committee for the Organization of Applied Research on Economic and Social Development (Comité d'organisation des recherches appliquées sur le développement économique et social: CORDES). The Committee was organized within the Planning Bureau in 1969 to stimulate and to co-ordinate research activities dealing with development and planning, in the public as well as in the private sector. The committee is composed of sixteen members and is presided over by the General Commissioner of the Planning Bureau.

Eight members are always governmental representatives and eight are elected from the universities and the financial world. The Committee suggests particular research areas as well as considering those applications submitted to it. Three research orientations are preferred by the committee:

1. The impact of technical and economic innovations upon the population's way of thinking and way of life rather than the management of technical and economic innovations.
2. Behavioural sciences rather than opinion research.
3. In-depth studies of small-scale samples rather than large-scale surveys.

In 1971, 85 out of 110 projects presented were funded to the amount of £1 million. In 1972, 58 out of 81 projects presented were funded to the amount of £620,000. This funding is not exclusive of any other funding, indeed most often it is supplementary funding. The average project duration is about fifteen months. About five of these 58 projects can be classified as health services research projects.

Inter-Ministerial Committee for Scientific and Technical Research (Comité Interministériel de la Recherche Scientifique et Technique)

The Inter-Ministerial Committee founded in 1958 is the final decision-making power in France with regard to scientific policy and research strategy.

Its over-all decisive role can be traced back to article 1 of the law of 5 August 1970 which deals with the co-ordination of scientific and technical research.

'Research policy in France is co-ordinated by the Minister for Industrial and Technical Development (p. 145), is prepared by the Delegation for Scientific and Technical Research (p. 146), is submitted to the Advisory Committee for Scientific and Technical Research (p. 146) and is decided by the Inter-Ministerial Committee for Scientific and Technical Research.' Most Cabinet ministers are members of the Inter-Ministerial Committee which meets at least twice a year and is presided over either by the Prime Minister or the Minister for Industrial and Technical Development representing the Prime Minister.

On the basis of the existing laws and decrees it might appear that national research policy, as apparent in the budget proposal submitted to Parliament, is ultimately the decision of the Inter-Ministerial Committee. However, it is not in this committee that final decisions are made or alternatives selected. In essence, research policy is developed by the Delegation for Scientific and Technical Research whose proposals are discussed and selected by members of government outside the formal framework of the Inter-Ministerial Committee. This committee only officially approves what has already been decided.

Ministry of Industrial and Technical Development

The Ministry of Industrial and Technical Development was formally created in 1969 to co-ordinate research policy in France. Before this, research policy was in the hands of the Prime Minister who, however, only occasionally dealt with the topic himself and most often delegated his responsibilities to some cabinet member.

Since 1969 the Minister for Industrial and Technical Development has supervised the Delegation for Scientific and Technical Research, the Advisory Committee for Scientific and Technical Re-

search, and the Development Fund for Scientific and Technical Research. He is also responsible for a number of governmental research agencies such as the Bureau for Atomic Energy, the National Centre for Space Research, and so on.

Advisory Committee for Scientific and Technical Research (Conseil Consultatif). The Advisory Committee was founded in 1958 to support the Inter-Ministerial Committee for Scientific and Technical Research. In 1970 as research policy was reorganized, the Advisory Committee was joined to the Ministry for Industrial and Technical Development. The Committee itself consists of twelve specialists appointed for a two-year term and selected because of their research, technical, scientific, or economic competence. They cannot serve more than two terms of office. The Committee selects a president and vice-president each year from among its members. All Committee members are also members of the Research Commission of the Plan (p. 143).

The Advisory Committee is the linchpin of research policy in France. Firstly, it examines the national research policy prepared by the Delegation for Scientific and Technical Research before this policy is passed on for approval to the Inter-Ministerial Committee for Scientific and Technical Research. It can also, on its own initiative, pass on recommendations about research structure, research programmes, and research budgets to the Prime Minister. In this way the committee influences the yearly research budget proposal.

Secondly, once the budget has been voted by Parliament, the committee also allocates the funds among the Ministries involved and this in co-operation with the Minister for Economy and Finances.

Thirdly, each minister consults the Advisory Committee about distributing the funds among the agencies for which he is responsible.

Finally, the Committee's members are also members of the Research Commission of the Plan which is presided over by the Advisory Committee's President.

In this way, the Advisory Committee influences the long-term research policy in France.

Delegation for Scientific and Technical Research (Délégation Générale à la Recherche Scientifique et Technique: DGRST). The Delegation is the single most important executive body with regard

to research in France. Originally created in 1958 and organized in 1961, it was the responsibility of the Prime Minister until 1970. In 1970 the Delegation was absorbed by the newly created Ministry for Industrial and Technical Development, but only for a short period of time. It soon became apparent that the Delegation needed to be autonomous in order to fulfil the inter-ministerial administrative role for which it was originally intended. Hence, in August 1970, the Delegation was reorganized as an administrative body of an inter-ministerial character under the aegis of the Minister for Industrial and Technical Development. This arrangement puts the Minister for Industrial and Technical Development in an unusual situation: although he is an ordinary cabinet member with all the usual responsibilities involved, he also has an inter-ministerial role through his responsibilities *vis-à-vis* the Delegation.

The Delegation is directed by a Delegate General nominated by decree in the Council of Ministers. He is assisted by three Vice-Delegates nominated by the Minister of Industrial and Technical Development upon his own recommendation:

1. Delegate for scientific and technical affairs.
2. Delegate for economic and financial planning.
3. Delegate for external affairs.

1. The Delegation participates in preparing a research policy.

(a) The Delegation prepares the National Plan on matters of research and development. The Delegate General is secretary of the Research Commission of the Plan. The secretarial work of this agency is done by the Delegation itself.

(b) The Delegation centralizes the budgets of the research proposals submitted to governmental agencies.

Firstly, the Delegation, in close co-operation with the Ministry of Economy and Finances, collects all budgets of non-military research proposals and allocates them tentatively among the different ministerial annual budgets. Secondly, the Delegation is also in charge of any modification of the budget once it is approved by Parliament. Finally the Delegation controls all research expenditures of the ministries and governmental agencies.

(c) The Delegation itself can start special research projects of general interest in order to define research objectives or to change research strategies. In 1968, a National Committee was created within the Delegation which has full access to all public as well as private

research information including military, technical, and scientific information.

(d) The Delegation actively intervenes in the development of research proposals by specialized agencies. The Delegate-General or the Vice-Delegates are indeed themselves or through their representatives members of the board of many governmental or semi-governmental agencies, for example, the National Institute of Public Health and Medical Research (p. 175).

2. The Delegation also has a direct influence upon actual research activities:

(a) The Delegation administers the Development Fund for Scientific and Technical Research. This Fund, created in 1959 within the Prime Minister's ministry, aims at developing, co-ordinating, and sponsoring projects of particular research interest.

In 1969 this Fund was transferred to the Ministry of Industrial and Technical Development and since then has been administered by the Delegation. The usual contract period is four to five years and each research activity is part of a programme involving several years of research work.

The Delegate for Scientific and Technical affairs proposes to the Delegate General the projects which should be sponsored by the Fund.

Following this, the Minister determines the exact research area of each project, the composition of the Scientific Committee attached to each project, its president and vice-president, and its duration. Once a course of action has been approved a concurrent programme is drawn up by the Study Committee of the Delegation in order to fit the action into the over-all structure of the National Plan.

The Scientific Committee then keeps track of all progress and supervises the project on a yearly basis. While the projects numbered ten in 1959, their number has increased to about twenty in 1970.

They involve some 500 specialists divided among some 60 committees or round tables. Half of the specialists come from the university and half of them from the non-university environment. It is noteworthy that some of the projects have been quite successful in fostering co-operation among different research workers.

Essentially, the projects try to correct French scientific research which traditionally emphasized the physical and chemical sciences in universities as well as in governmental research institutions.

(b) The Delegation also administers the funds of the Development Assistance Fund. This Fund provides money for some industrial research projects.

Ministry for National Education

The Ministry for National Education is the ministry traditionally involved with the administration of the French universities, and hence with university research. Its single most important research sponsoring agency is the CNRS.

National Centre for Scientific Research (Centre National de la Recherche Scientifique: CNRS). The National Centre is specifically concerned with higher education. Higher education is funded through the usual mechanism of university budgets and automatically encompasses a research provision which, however, in most cases is not considered sufficient. Hence additional university research funds are earmarked through the National Centre. The National Centre has long been the main research sponsoring agency.

Created in 1937 to allow young researchers a full-time research activity rather than teaching responsibilities only, it was reorganized in 1945 to develop, orient, and co-ordinate the formulation as well as the execution of French science. The National Centre is governed by a Board of Trustees which supervises general administrative and financial matters. The Directorate directs the Centre and is instrumental in determining its science policy within the framework of the Board's guidelines. The Steering Committee includes thirty-one section members (see below), the Delegate General for Scientific and Technical Research, the Director of Higher Education of the Ministry, and some members of the Board.

A scientific committee divided into sections assists the Directors of the Centre on matters of science. These sections which meet at least twice a year have a threefold task:

1. To analyse the state of science and draw up a report accordingly.
2. To examine the work programmes of the research bodies and of the scientists attached to it.
3. To examine applications for grants.

The number of sections is very rigidly determined by a joint inter-ministerial order of both the Ministries of Education and Industrial and Technical Development.

In 1972 about thirty-six science sections existed, each having one chairman and twenty-six members.

The section members are appointed in different ways, some of them by the scientific community, some of them by the different ministries. They come primarily from the universities (90 per cent) and are nearly all scientists.

Their turnover so far is quite low although this differs among sections. An effort is being made to increase this turnover. The National Centre encompassed some 5,700 researchers in 1968: 218 were research directors, 3,100 were research assistants (*attachés de recherche*). The National Centre sponsors research, both university research, and research in its own laboratories. Its style of approach is rather academic: research policy is largely defined in terms of disciplines and the vast majority of the members in the different decision-making bodies are actually university scientists.

The different sponsoring mechanisms in existence are:

1. Associated Laboratory (*laboratoire associée*) and Associated Research Team (*équipe de recherche associée*). Both are units directed by a university scientist, professor, or other distinguished researcher, who operates outside the National Centre's institutions.

Each laboratory is constituted for four years (renewable) and provides the framework for several researchers or research teams to co-operate in the same scientific area. The laboratory's budget is drawn up on an annual basis which allows for readjusting the research programme while in progress.

A further stipulation requires that the researchers work full time in the laboratory concerned. Hence no researcher belongs to more than one unit.

No individual applications for funds are admitted.

A team is formed for three years (renewable) and consists of some five to ten researchers working in co-operation on the same programme.

2. Programmed co-operative research (*recherche cooperative programmée*: RCP). In an effort to co-direct much of the university research which runs along parallel lines, the National Centre instituted in 1959 several programmes which try to bring together several laboratories or research teams. This programmed co-operation lasts from one to three years (renewable). The researchers themselves can be involved on a part-time basis. The programme itself is supervised

by a Standing Committee which sets targets and implements the research activities accordingly. This programmed co-operative research is also geared particularly towards research projects which do not involve a long-term commitment either money-wise or in terms either of money or of full-time research staff. It is more a streamlining effort than a spearhead or mission-oriented research effort. The funds involved are nearly always supplementary; they average £14,000 per programme on an annual basis.

While most National Centre research activity is initiated by the individual researcher or research unit and not by the Centre itself, this is not the case with regard to programmed co-operative research activities. The Standing Committee ensures that the proposals submitted are closely in line with the programme concerned. The number of programmes is limited in order not to 'perpetuate' particular research set-ups. This same arrangement also fosters some degree of competition which has been shown to be healthy. The programme's funds also are usually limited to operational expenditures and hardly involve investment funds.

The traditional seclusion or independence of university-based research has however not completely been overcome by these co-operative research programmes. Their success as measured by the amount of co-operation which has resulted is also rather limited. It might even be said that the universities have recently lost interest in the co-operative research programmes.

3. Programmed thematic actions (*actions thématiques programmées : ATP*). The success of the projects of the Delegation for Scientific and Technical Research (p. 146) together with the stalemating of its own programmed co-operative research has induced the National Centre to launch its own version of mission-oriented research. These efforts which are all initiated by the Centre itself are called Programmed Thematic Actions. They usually involve a multidisciplinary team of researchers and, most importantly, they are funded not through the existing committees or sections but by money made available to the Directors of the National Centre.

The first two mechanisms of the National Centre are rather cumbersome. The Centre operates entirely within the French pattern of central control and administration. The weight of the rules of public administration, with its many regulations is somehow limiting the effectiveness of the National Centre, even to the point that the Minis-

try of Finance itself proposed to relax to some extent the management of the National Centre and its associated laboratories.

The relaxation has resulted in the allocation of some flexible funds which amount to some 15 per cent of the total budget and can be disposed of by the Directors on their own initiative without having to go through all committees or sections. These funds are only subject to supervision by the scientific directors concerned and can be transferred from year to year, limited however to at most three years.

This flexible line together with the recent provision to decentralize powers of signature covering a number of budget items, when less than £2,100 is involved, has freed the cumbersome administration which hampered university research in France. Indeed the old National Centre way of management has lost much of its influence in recent years, as it failed to do away with established patterns and outmoded situations, which were counterproductive to an effective research effort.

This old mode of management was the main reason for the development of such specialized research agencies as the National Institute of Public Health and Medical Research (p. 175) and of some difficulties between the National Centre and the Delegation for Scientific and Technical Research.

In addition a recent National Centre internal policy change brought about some improvements. It was decided to review the scientific activity of the teams and laboratories every five years in order to reorient programmes, change teams or directors, or even to wind up particular research activities. The first laboratory was wound up in 1968.

Ministry of Economy and Finance

The Ministry of Economy and Finance supervises two bodies which are marginally involved with health services research.

National Institute for Statistics and Economic Studies (Institut National de la statistique et des études économiques: INSEE). This Institute which is a ministry division rather than an institution was founded in 1946 to collect and keep up to date all statistics relating to government, population, goods, and services, and the country's economy and to keep a record of all relevant studies in this respect.

Although no health services research as such is done or sponsored by the Institute, many research centres are using the Institute's statistics, for example, the Section of Medical Economy of the Centre for Research and Documentation of Consumption (p. 187), Division of Health Services Research of the National Institute of Public Health and Medical Research (p. 175) Section of PPBS and Operations Research of the Ministry of Health and Social Security (p. 174).

The Institute is also involved in sponsoring a particular research project on the development of a system of national health accounts (p. 194).

Directorate for Planning (*Direction de la Prévision*). The Directorate for Planning is a research and development-oriented administration within the Ministry of Economy and Finance. The Directorate, for instance, helps the National Institute for Statistics and Economic Studies (p. 152) with the development of national accounts. The Directorate also develops provisional economic budgets. A Division within the Directorate, for example, the Division of Rentability of Investments, used to do some health services research while developing cost-benefit approaches for hospital services (1967). However, since both of the Division's researchers, B. Vignier and M. Chapalain, left for the Office of Research and Planning of the Ministry of Health and Social Security this health services research interest within the Directorate has stopped.

Ministry of Health and Social Security

The regulating and supporting role of the Ministry of Health and Social Security, in health services research is shown in Fig. 2.

The Ministry's role is undoubtedly strongest through its immediate supervision of the National Institute of Public Health and Medical Research. This Institute has an all-important regulating as well as supporting role with regard to health services research in France. The Institute is discussed in detail elsewhere (p. 175). The National School of Public Health (p. 175) is also an important channel through which the Minister of Health and Social Security regulates and supports health services research in France.

Within the Ministry itself, the Bureau of Studies and Budgets does the research proper to the Ministry. Since 1970 the Bureau has been subdivided into an Office of Research and Statistics which is

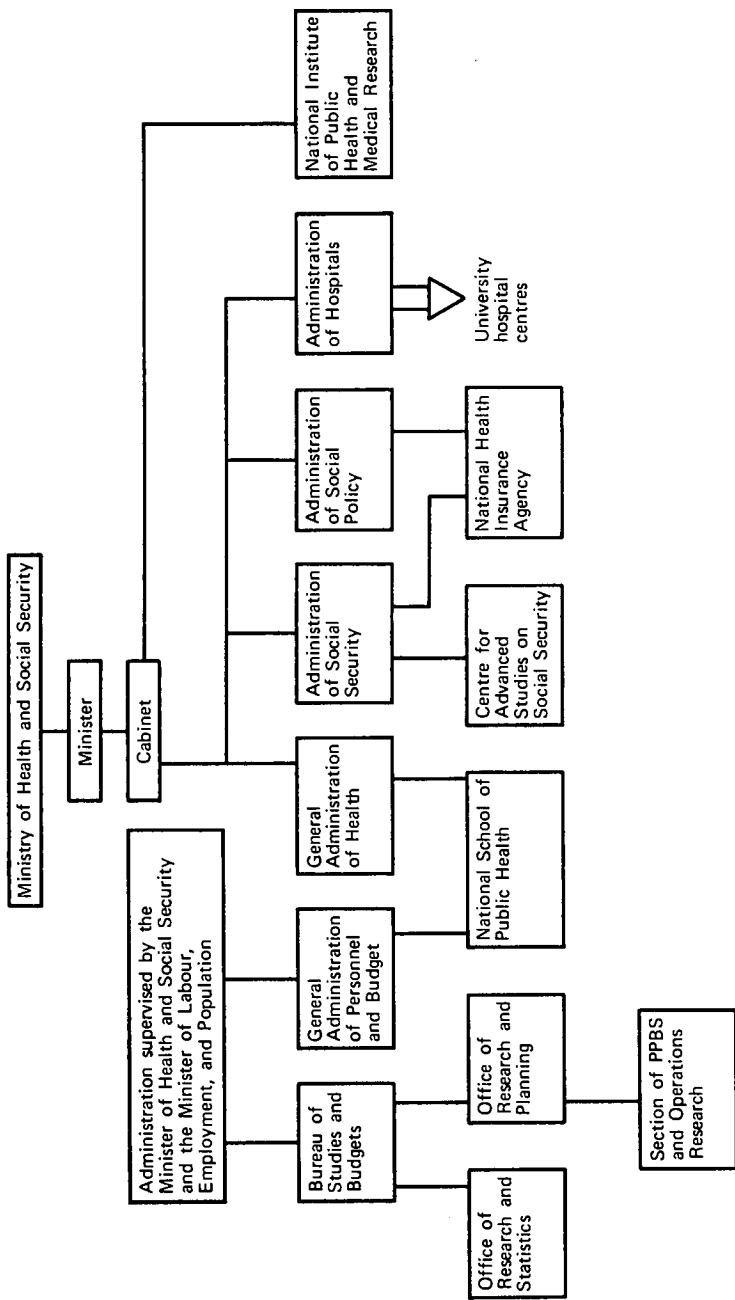


FIG. 2. The structure of the Ministry of Health and Social Security.

supervised by the Minister of Labour, Employment, and Population and an Office of Research and Planning which is supervised by the Minister of Health and Social Security.

Within this last office, the Section of PPBS and Operations Research, which is discussed elsewhere (p. 174), has a very active role with regard to cost-benefit analyses of health services alternatives in France. In addition to these three settings, which are extensively dealt with below, the Ministry of Health and Social Security can and does regulate and support health services research in two more ways:

1. Administration of hospitals. The Minister of Health and Social Security has authority over the large public hospitals in most regional cities in France. These hospitals are usually associated with medical schools, in which case they constitute the backbone of the university hospital centres (*Centres Hospitaliers Universitaires: CHU*) which are planned to provide the top-level medical care in the region to which they belong. Their impact on health care and health services research and development is quite important.

The same office also keeps statistics on personnel, facilities, and equipment, helps in developing the health accounts and provides the input for the Planning Bureau of the Office of the Prime Minister.

2. Administration of Social Security and of Social Policy. This Administration supervises the National Health Insurance Agency. This agency to some extent supports health services research in France, for instance it partially supports the Section of Medical Economy of the Centre for Research and Documentation of Consumption: CREDOC (p. 187).

Co-ordinating semi-governmental agencies

The role of central government is all-encompassing in France. Agencies or their counterparts such as the Delegation for Scientific and Technical Research (p. 146) or the National Centre for Scientific Research (p. 149) which would probably have been classified as semi-governmental agencies in other countries under consideration in this study have to be classified as governmental agencies in France.

This centralization impedes the development of viable semi-governmental agencies. Hence few organizations can be found which can really be classified as semi-governmental.

National Health Insurance Agency (Caisse Nationale d'Assurance Maladie)

Although the National Health Insurance Agency is supervised by the Ministry of Health and Social Security, it has nevertheless some degree of independence.

The Agency occasionally sponsors particular research projects (p. 188) relevant to its area of operations. The Agency also contributes to particular research projects by making its data available to the researchers. The Agency has a working relationship with the Centre for Research and Documentation of Consumption (p. 194) which is also the single most important outlet for its research interests.

Pasteur Institute (Institut Pasteur)

The Pasteur Institute is undoubtedly the most famous private non-profitmaking institution in France active in health research. When it was founded at the beginning of the century, its aim was to provide for teaching and research in selected areas such as virology and immunology. The nature of this advanced research was always individual and fluctuated between independent research and mission-oriented research.

However, since the Second World War, governmental funding has become quite important for this private institution. Hence the Pasteur Institute can be classified as a semi-governmental institution which 'is within the area of responsibility' of the Ministry of Health and Social Security. This arrangement resulted for instance in the fact that several research units of the Institute of Public Health and Medical Research (p. 175) were physically located on the premises of the Pasteur Institute.

The Institute's research programme is heavily, not to say exclusively, oriented towards biomedical research. No health services projects could be identified.

Community Care (Assistance Publique)

Every major city in France has an organization which deals with the health and social problems of its indigent population. These organizations can best be described as para-governmental organizations.

Although they belong to the public sector, they are nevertheless quite independent (with regard to decision-making) from central

government, the main reason being that their field of activity is usually restricted to the local community.

However some of them are quite large and therefore inevitably touch on developmental and applications-oriented health services research. The single most important one is the Paris Community Care Organization (*Assistance Publique de Paris*).

This organization has directly sponsored several projects (for example, pp. 210 and 211) and has also been very co-operative in making certain data available to other researchers. It is also fairly active in developing the application of electronic data-processing to health services management purposes.

Foundations and professional organizations

The role of foundations and professional organizations is marginal with regard to health services research in France. Few of them can be identified which have shown any active interest in health services research applications.

Royaumont Foundation

Within the Royaumont Foundation (Gouin-Lang) for the Advancement of the Science of Mankind there has recently been created an International Centre for Socio-Economic Research and Studies on Health

This Centre, discussed elsewhere (p. 187), is autonomous in regards to its programmes of studies, research, and education.

Federation of French Hospitals (Federation Hospitalière de France)

This Federation co-ordinates the public hospitals of France. Although the Federation has been active in promoting the usefulness of health services research with regard to the management of hospitals, no research projects as such have been started.

Nevertheless many projects use data made available by this organization.

French Syndicated Federation of Private Hospitals (Fédération Française intersyndicale des établissements d'Hospitalisation Privé)

This Federation co-ordinates the private hospitals in France. Although the need for research into the management and adminis-

tration of private hospitals has been emphasized, no research projects have been started internally.

The Federation's hospitals nevertheless make certain data available to individual researchers.

National League against Tuberculosis

This League has co-operated with regard to one health services research project discussed (p. 221).

Confederation of Medical Unions (Confédération des Syndicats médicaux)

This organization which brings together the different unions of medical professionals in France has co-operated with one research project discussed (p. 200).

Industry

The role of industry in sponsoring health services research is quite limited in France.

National Federation of Pharmaceutical Industries (Fédération Nationale de l'Industrie Pharmaceutique)

This Federation brings together the pharmaceutical companies in France and represents the lobbying branch of the industry.

The Federation has financially supported some health services research efforts (p. 187).

Kodak

As mentioned, Kodak SA has supported some health services research activities (p. 187).

IBM-France

Much of the developmental and applications-oriented research in the area of hospital electronic data processing done by the Paris Community Care Organization (p. 156) is on IBM hardware and with IBM software. Some research co-operation could be identified.

HEALTH SERVICES RESEARCH STRATEGIES

Research activities in France are very well organized. This also applies to health services research. However, this does not imply that all health services research activities are co-ordinated with each other.

Indeed, although the over-all importance of governmental agencies in regulating and supporting research results in a quite rigid and centrally organized system of special purpose agencies with special purpose areas of interest, several short-circuits or overlaps in the health services research structure can be identified. Also the set of successive modifications with regard to research policy—the last major change being in the Decree of 5 August 1970—has somehow blurred the clear-cut boundaries between the several agencies, primarily because it has been found much easier to start research activities than to stop them.

1. The original stronghold of research policy and support could until recently be found in the National Centre for Scientific Research (p. 149). Indeed, the universities, originally the only research centres in existence, were completely subordinated to the central administration in France. This tradition which dates back to Napoleonic times has persisted until now. In this context, the National Centre, reorganized in 1945 to develop, orient, co-ordinate, and execute the university's research activities, has been most powerful.

However, the research strategy developed by the National Centre was characterized:

(a) By an approach by discipline which impeded multidisciplinary or flexible co-operation in dealing with such real-life problems as the health services.

(b) By an academic style which did not always favour the relevancy of the problems being investigated.

(c) By a low turn-over of the members of the decisionmaking bodies due partly but not solely to legal constraints. This resulted in the fact that new problems and new approaches did not always receive the attention which they deserved from the decisionmakers of the National Centre.

Although the shortcomings of these characteristics have been recognized by the National Centre and although recently measures

have been taken to adjust to them, for example, the Programmed Co-operative Research efforts and the Programmed Thematic Actions (p. 150) the field was nevertheless open for some challengers.

2. The most important challenge to the traditional power of the National Centre came in 1958 with the creation of the first governmental body to deal specifically with research policy in France, the Inter-Ministerial Committee for Scientific and Technical Research (p. 145), the concurrent creation of the Advisory Committee for Scientific and Technical Research (p. 146), and the concurrent creation of the Delegation for Scientific and Technical Research (p. 146), this last organization, however, only being operational as from 1961.

These three bodies which were finalized in their actual form in 1970 and to which a full-time minister has since been attached (p. 145) launched themselves in the direction of formulating a coherent and all-encompassing research policy and strategy in France.

Four means were made available for them to do so:

(a) These bodies were delegated to work out the long-term research strategies which are incorporated into the National Plans: for example, the current Sixth Plan (1971-5) which has committed itself to mission-oriented research.

(b) They centralize all non-military research budgets being submitted to governmental agencies: in France this means most research efforts.

Through this mechanism these bodies closely watch the yearly allocation of funds to particular research projects.

(c) Thirdly, the Delegation, which is the administrative body, can launch particular projects itself (p. 146), an opportunity which the Delegation has certainly not overlooked.

(d) Finally, the Delegation or its members are *de jure* represented on the governing boards of many of the research agencies or research settings in France.

These four mechanisms have empowered the Inter-Ministerial Committee, the Advisory Committee, and the Delegation to redirect research policy in France away from unco-ordinated university or academic research into mission-oriented research.

The fact that university scientists may draw their project support from different agencies, for example, both from the Delegation and the National Centre has only hastened this reorientation.

Health Services Research in particular has been helped by this development towards mission-oriented research programmes. The creation of the Committee for the Organization of Applied Research on Economic and Social Developments (p. 144) to deal specifically with the research activities supporting the National Plans should also be seen as a new strategy towards mission-oriented research.

3. The second challenge to the traditional stronghold of the National Centre has been launched essentially because of the Centre's own policy. In the first place, because of its attachment to the Ministry of Education, the Centre has not been able to extend its scope beyond the Ministry of Education into, for example, the Ministry of Health, nuclear energy, and so on. Secondly the organization by discipline and the high degree of autonomy accorded to each discipline or section within the National Centre has impeded the development of priorities or guidelines within each discipline which were in harmony with an over-all national policy. Thirdly, its strong academic bias along the lines of university specialization hampered the development of new disciplines, and made it impossible for the Centre to abolish outmoded programmes.

As a result specialized research institutes have begun to emerge, even within the government sector itself, which are more in keeping with the identification of needs: the Commission for Atomic Energy (*Commission d'Énergie Atomique: CEA*); the National Centre for Space Research (*Centre National d'Études Spatiales: CNES*); and most important for health services research, the National Institute of Public Health and Medical Research (p. 175) and the Centre for Research and Documentation of Consumption (p. 187).

4. It should be stressed at this point however that neither the development towards a national all-encompassing research policy, nor the development towards specialized institutions has created a split of research efforts into competitive and isolated research settings.

Several measures indeed preclude this possibility.

1. Both challenges originated from within the government sector. Private industry, national institutes, and commercial agencies did not challenge the traditional leadership of the government with regard to research policy and strategy. Hence, the whole research field is still within the government's control.

2. The fact that both developments were solely government initiatives also made some co-ordination and streamlining of strategies

inevitable: the division of research activities among competitive centres was not allowed.

3. The special feature of these two challenges is that the new sources of finance which were created in the process are not mutually exclusive. Each research setting can receive funds from different sources, the traditional ones as well as the newly created ones; even individual projects can draw on the resources of the different supporting agencies.

4. The free flow of ideas which is fostered by this central government approach also resulted in the fact that new initiatives of one agency were usually and in short term picked up by the other agencies: for example, the success of the projects of the Delegation for Scientific and Technical Research quickly prompted the National Centre for Scientific Research to launch its own version: the programmed thematic actions.

5. The impact of these developments in research policy and research strategy on health services research is most strongly felt in the creation of some influential settings which are specializing not in terms of health services institutions or organizations forms (for example, hospitals, general practitioner's care), but in terms of problem areas. The major settings together with their problem area are:

(a) 'Costs of medical consumption' by the Medical Economy Section of the Centre for Research and Documentation of Consumption (p. 187).

(b) 'Cost-benefit and PPBS analysis of alternative courses of action in health care delivery' by the PPBS and Operations Research Section of the Office of Research and Planning of the Ministry of Health (p. 174).

(c) 'Public health statistics' by the Health Services Research Division of the National Institute of Public Health and Medical Research (p. 175).

(d) 'Personnel management and industrial psychology' as related to health care personnel by the Institute of Economic Research and Planning of the University of Social Sciences at Grenoble (p. 170).

These influential health services research settings, each specializing in one (or more) particular problem areas provide examples towards which the other health services research settings can orient their activities. Most funding also follows the same pattern: major commitments towards specific problem areas in the leading centres,

minor commitments covering the other problem areas in the remaining research settings. By the same token of identifying the most important settings, the most important problem areas being researched into by health services research in France are also identified.

HEALTH SERVICES RESEARCH EXPENDITURE

Health care costs are very well established in France; the use of national plans necessitates this. The major task in identifying these costs has been done by the Medical Economy Section of the Centre for Research and Documentation of Consumption (p. 187). This paragraph is almost exclusively based on their results.¹

1. The GNP in France stood at £47,609 million in 1967 and has increased to about £73,333 million in 1970 which represents an average yearly growth rate of about 11 per cent.

2. Health care related costs are estimated at £2,738 million or 5.7 per cent of the GNP in 1967 and at £4,037 million or 5.5 per cent of the GNP in 1970. These figures represent health care costs in the narrow sense: only consumers' expenditure on physicians' fees, medication, dental care, laboratory tests, paramedical fees, hospitalization, orthopaedic prescriptions, spectacle lenses, etc., are taken into account.

If to this sum were added the expenditure on preventive care such as school medicine, industrial medicine, and any other types of preventive medicine, the total would be £2,815 million in 1967, or 6 per cent of the GNP.

If expenditure on administration, education, and research is also added to arrive at some global figure of health expenditure, the figure is £2,997 million in 1967 or 6.3 per cent of the GNP.

Public activities on community hygiene or the costs of the consequences of sickness such as early invalidity pensions or production loss caused by sickness leaves are still excluded from this last figure.

3. How much of this health-related expenditure goes to education and research?

The same source¹ estimates that in 1967 about £44 million or 1.4 per cent of all health-related expenditure went to education and

1. G. Rösch et la D.E.M. du Credoc (Elements d'Economie Médicale) (Paris: Flammarion, 1973).

that in the same year about £52 million or some 1.7 per cent of all health-related expenditure went to research.

However it should be stressed that these figures are restricted to clinical medicine related research and education.

Basic medical teaching is excluded while clinical medical teaching—hospital residency—is included.

Biological research is excluded while clinical research in university teaching hospitals is included.

A second estimate therefore on medical research is given by the Delegation for Scientific and Technical Research.¹ Health research expenditure in 1967 is estimated by this agency at £70 million or 2.3 per cent of all health expenditure. This figure is a slight overestimate due to an overestimation of university and pharmaceutical industry research expenditures.

This ratio of about 2.3 per cent corresponds fairly well to parallel ratios in other countries under investigation in this report.

4. Health research involves different organizations. A first breakdown differentiates private expenditures from public expenditure.

Public expenditure on health research is estimated at £41,290 million in 1967. Some other sources^{2, 3} estimate this expenditure at £38,730 million.

A second breakdown looks at intramural and extramural government disbursements on behalf of different organizations:

Public expenditure on R & D in health research in France (1967)

<i>A. Intramural expenditure</i>		<i>£000</i>	<i>%</i>
1. National Institute of Public Health and Medical Research		7,784	21.1
2. Public hospitals		3,516	9.5
3. National Centre for Scientific Research		2,273	6.2
4. Universities		17,179	46.5
5. Private non-profitmaking institutions		6,156	16.7
Total intramural public expenditure		36,908	100

1. Delegation Générale à la Recherche Scientifique et Technique, *Estimation et répartition des dépenses de recherche médicale en 1967* (Paris, 1967).

2. 'Les moyens consacrés en 1967 à la recherche et au développement par l'Etat', *Progrès Scientifique* (numéro spécial) (Paris, 1969).

3. *International Survey of the Resources devoted to R & D in 1967 by OECD* (Paris, 1972).

Health services research expenditure 165

<i>B. Extramural expenditure</i>	<i>£000</i>	%
1. Higher education establishments	814	44.6
2. Private non-profitmaking institutions	1,011	55.4
Total extramural public expenditure	1,825	100

Total public expenditure £38,733,000.

A third breakdown investigates the disbursement by agency involved:

Expenditure on R & D in health research (1967)

	<i>£000</i>	%
1. National Institute of Public Health and Medical Research	8,992	12.8
2. National Centre for Scientific Research	6,889	9.8
3. Delegation for Scientific and Technical Research	1,190	1.7
4. Universities	20,668	29.5
5. Other governmental agencies (army, etc.)	3,552	5.1
Sub-total for governmental agencies	41,291	58.9
6. Pharmaceutical industry	12,526	17.9
7. Chemical industry	6,979	10.0
8. Public hospitals	6,800	9.7
9. Others	2,416	4.4
Total	70,058	100

Based upon previous estimates, health research and development expenditure in the public sector, or more particularly, the sector which is primarily responsible for health services research can be estimated at about £40 million.

5. Most of this health research expenditure now goes to medical and biomedical research. Only a small part goes specifically to health services research:

	<i>£000</i>
1. National Institute of Public Health and Medical Research (p. 175)	900
2. Medical Economy Section of the Centre for Research and Documentation of Consumption (p. 187)	150
3. About 2 per cent of all health research expenditure from the universities and from the National Centre for Scientific Research can be estimated to go to health services research	551

	£000
4. About 1 per cent of the health research expenditure of the Delegation for Scientific and Technical Research can be estimated to go to health services research	12
5. The contribution of other governmental agencies to health services research can be estimated to be minimal	0

Based upon these approximations, and upon background information gathered during this investigation, it can be estimated that health services research expenditure in France will be about £1,600,000 or about 2.3 per cent of all health research expenditure, or about 0.05 per cent of all health care expenditure.¹

HEALTH SERVICES RESEARCH SETTINGS

INTRODUCTORY REMARKS

Only few of the health services research settings in France can be deemed of sufficient scale to be able to sustain a viable and steady health services research effort.

Most centres are only occasionally involved with health services research. One reason is that the research staff is usually too small and has a high turnover. A second reason is that the research staff has often other interests besides health services research. A third reason is that the centre's research activity is frequently only a part-time engagement which fluctuates with the particular projects at hand. The first and second reasons are particularly applicable to many of the small commercial settings, the second and third reasons are particularly valid for the university-based research centres and the research centres related to the National Centre for Scientific Research.

Nevertheless some centres are identified which are of major importance and which by the same token are the prime movers in the field of health services research in France.

Moreover, two reasons can be identified for the fact that these centres have no counterparts in other countries under investigation.

1. The driving force of 'centralization' and 'central government

1. *Member Countries, Statistical Tables and Notes*, vol. 5, Total Tables (Paris: OECD, 1973).

control' results in the generation of research opportunities which can only be tackled by major research institutions working directly under the auspices of the central governmental agencies.

The PPBS and Operations Research Section of the Office of Research and Planning of the Ministry of Health (p. 174), the Health Services Research Division of the National Institute of Public Health and Medical Research (p. 175), and the Medical Economy Section (p. 187) are operating under these assumptions.

2. The sheer size of these major research settings also results in a rigid organizational structure subject to committee supervision and governmental control.

This undoubtedly provokes a major commitment to the research direction selected and a certain kind of inflexibility about tackling new problem areas. Hence their research effort is, although of major importance, strictly related to one area.

Nevertheless some centres if centrally located, may be able occasionally to delineate a research area of particular interest at a given moment in time which does not overlap with any of the research interests of the main research settings.

Hence this second type of important centre can commit itself to its area of subspecialization on a temporary basis with a significantly smaller staff but can nevertheless remain viable.

The Laboratory of Economy and Management of Health Organizations (p. 168), the Centre of Economic Research and Management (p. 170), the Institute of Economic Research and Planning (p. 170), and the Centre of Medical Sociology and Demography (p. 186) are the exponents of this second group.

Some thirty-six health services research settings are investigated here. Eleven of them are university based, ten are national institutes, or are related to the National Centre for Scientific Research, twelve are commercial agencies and three are independent agencies.

UNIVERSITY-BASED
HEALTH SERVICES RESEARCH

University of Paris-IX—Dauphine (Université de Paris—Dauphiné)

The Laboratory of Economy and Management of Health Organizations (Laboratoire d'économie et de gestion des organisations de Santé: LEGOS)

This was founded in 1973 as a university department. Its main objectives are health services research and postgraduate education in the areas of health economics and hospital management.

The Institute has a professional staff of eight and is directed by E. Levy who came from the University of Paris-X—Nanterre (p. 168). Three main projects have so far been set up:

1. Research on public health indicators and their trends (p. 214).
2. Economic and social costs of illnesses in France (in progress).
3. Technical, economical, and social differences between public and private hospitals (p. 212).

University of Paris-X—Nanterre (Université de Paris—Nanterre)

The Centre for Economic and Social Research (Centre de recherches économiques et sociales)

This Centre of the University of Paris-X—Nanterre was active in the area of health economics until 1973. It had a professional staff which was directed by E. Levy who however left the University of Paris-X—Nanterre to join the University of Paris-IX—Dauphine. No new projects have been started yet. Several projects in the area of health services have been reported on:

1. The economic and social costs of chronic bronchitis in France (p. 207).
2. Research on public health indicators and their trends (p. 214).

The Association for Economic and Social Research (Association pour la recherche économique et sociale: ARES)

This association of the same University used to co-operate occasionally on problems in the area of health services research with the

Centre for Economic and Social Research while this last Centre was still being directed by E. Levy.

However this co-operative activity has completely vanished since 1973 with the departure of E. Levy.

At present, G. Rösch, director of the Medical Economy Section of the Centre for Research and Documentation of Consumption has initiated a course on health economics at the university.

As of 1973, however, no further health services research has been started.

A short-term research project has also been carried out by two other researchers associated with the university: The cost of illness in hospitals. A proposal to evaluate hospital costs by two converging methods (p. 202).

University of Paris-I (Université de Paris)

Institute of Research into Economic and Social Development (Institut d'Etudes de Développement Economique et Social)

This Institute of the University of Paris-I is a small research group attached to the University. The group has occasionally investigated problems in the area of health economics. The researchers involved with these efforts are Le Than Kai and Nguyen Huu Chan.

Though the Institute is primarily funded through the University, occasional research grants are also received from the National Centre for Scientific Research.

Health services research projects include:

1. Health economics (p. 192).
2. A methodology for an economic analysis of health expenditures (p. 192).

Necker—University Hospital Centre (CHU Necker Paris)

Occasionally, some small-scale research projects are carried out in this university hospital in the areas of health services research. Most of these are internal documents drafted for management purposes. The director is A. Bernard.

Health services research projects include: The level of knowledge of future medical doctors: A survey.

Catholic University of Lille (Université Catholique de Lille)

The Centre for Economic Research and Management (Centre de recherches économiques et de Gestion: CRESGE)

This Centre was founded in 1964 and is loosely affiliated with the University.

Although its main objectives are industrial economy and sociology of living conditions, some health services research projects have been initiated.

The Centre has a professional staff of twenty which is headed by Michel Falise who is professor at the University. Funding comes through research contracts of which some 30 per cent are from the National Centre for Scientific Research. Research projects reported on are:

1. The effect of health insurance upon the redistribution of disposable income (p. 193).
2. Medical background of physically handicapped persons and its effects on the poverty of the family (p. 217).

University of Grenoble

The Institute of Economic Research and Planning of the University of Social Sciences at Grenoble (Institut de recherche économique et de planification: IREP)

This Institute became interested in health economics some years ago.

The Institute was directed by Professor G. Destanne de Bernis until 1969 and has since been directed by J. Dessau. The Institute has a professional staff of eight.

The Institute has quite an extensive graduate education programme. Its research is primarily funded by the University, the National Centre for Scientific Research, and the Committee for the Organization of Applied Research on Economic and Social Developments. The Institute has developed a working relationship with the Laboratory of Work Economics and Work Sociology of Aix/Marseilles (p. 182). Health services research projects include:

1. Teamwork among general practitioners: group practices and health centres.

2. A French method of health care planning (in progress).
3. Introducing change in the health care area: a proposal (p. 213).
4. Health planning and economic planning (together with the Laboratory of Work Economy and Work Sociology) (p. 211).
5. The health care professions: factors relating to their organization and job content (p. 222).

University of Dijon (Université de Dijon)

The Institute of Econometrics (Institut de mathématiques économiques)

This Institute was founded in 1969 within the University. Since 1974 it has operated as an associated research team of the National Centre for Scientific Research. The professional staff of two is under the directorship of Professor C. Ponsard. The Institute's research interest is the area of regional planning and urbanization and of health economics. Its research programme is still primarily geared towards its educational role: seminars, thesis work. Its main funding sources are the university and the National Centre for Scientific Research.

Health services research projects include:

1. Psychiatric care hospitalization costs in Bourgogne and Franche-Comte (p. 204).
2. Hospital investments (thesis work).
3. Hospital finance (thesis work).
4. Hospital location (thesis work).

University of Aix en Provence/Marseilles (Université d'Aix en Provence/Marseille)

Two faculty members are involved, primarily for educational purposes, with health economics: Professor Pene and Professor Brunet-Jailly. As such they head the *Centre for Health Economics* of the University. Close co-operation exists with the Laboratory of Work Economics and Work Sociology (p. 182) and the Association for the Promotion of Study and Research at the Aix/Marseilles University (p. 186).

One research project has been reported:

1. Hospital costs—influential factors (in progress).

The original doctoral thesis of J. Brunet-Jailly is discussed in:

2. Study of the economics of health (p. 190).

University of Nancy (Université de Nancy)

The Lorraine Group on Medical Economics (Groupe Lorraine d'Economie Médicale: GLEM)

The group was founded in 1971 and is directed by Professors Huriet and F. Guyot of the University. Its research activities are concentrated on problems of applied health economics and the development of the regional health care map. The group's objectives are, however, primarily of an educational nature. Several research efforts have been reported:

1. The day-care hospital.
2. Hospital utilization statistics in Lorraine.
3. Laboratory utilization in the regional hospital centre of Nancy.
4. An economic approach to the intensive care units in Lorraine.
5. Provisions for the elderly persons in Lorraine.

University of Lyon (Université de Lyon)

At the University of Lyon Professor Roche, and his assistant D. Lambert are working in the area of health economics although primarily for educational purposes.

Two research projects have been done:

1. Demography of physicians.
2. A study on reorganization.

University of Bordeaux (Université de Bordeaux)

At the University of Bordeaux, M. Rochaix is teaching medical economics in the Medical School. Much of his work is therefore teaching-related. Through his function as director general of the Regional Hospital Centre of Bordeaux, he also participates in several seminars and discussion groups. Some research activity has been reported:

1. Essay on the evolution of hospital problems.
2. Statistics for hospital usage.

University of Clermont-Ferrand (Université de Clermont-Ferrand)

Professor Guillaumont, Dean of the faculty of economic sciences, is involved in research into economic growth and demography. Some work has evolved which touches marginally on health services research.

NATIONAL INSTITUTES**National School of Public Health (Ecole nationale de la Santé Publique)**

This school is a non-profitmaking public institution, under the tutelage of the Minister of Health. The School was founded in 1945 and is currently directed by J. S. Cayla, MD.

Its main objectives are postgraduate education on public health, health and social management, hospital management, and training of health personnel. Besides this very important educational task, the staff which includes some ten researchers also initiates research in the areas of health sciences and social sciences. Most of these efforts are related to epidemiology, nutrition, microbiology, environmental hygiene, and health care administration.

Research projects are developed by the students who have to write up a master's thesis at the end of their training period.

Health services research projects reported on include:

1. The development and implementation of an automated record for handicapped persons and their health care needs (p. 220).
2. The development of indicators to measure the economic consequences of public health improvement (p. 200).
3. Inquiry into co-ordination of social services (in progress).
4. A contribution to a quantitative historical survey of the public hospital system in France.
5. The impact of the agreements between the Social Security and the organizations of health care providers upon the medical consumption in Ille-et-Vilaine (in progress).
6. The Social Security system in England: its possible evolution in view of EEC developments (in progress).

PPBS and Operations Research Section of the Office of Research and Planning of the Ministry of Health and Social Security (Section des études RCB et de recherches opérationnelles de la Division des Etudes et du Plan)

This section of the Ministry of Health and Social Security started its research efforts in 1970. The section is headed by M. T. Chapalain and has a professional staff of seven. Although it is mainly geared towards research, the section also provides for university training and education with regard to PPBS and Operations Research.

The section provides the scientific back-up for the Ministry's policies. Health services research projects reported on are:

1. Health protection of schoolchildren (p. 210).
2. The public health and social impact of different types of child care centres (p. 208).
3. Economic efficiency analysis of the BCG vaccine against tuberculosis (p. 209).
4. An economic analysis of a nightly vertebral traction therapy programme against scoliosis (p. 208).
5. Analysis of alternative programmes to prevent suicides (p. 209).
6. A cost-benefit analysis of mental illness programmes (p. 207).
7. A PPBS approach to perinatal care programmes (together with the Health Services Research Division of the National Institute of Public Health and Medical Research) (p. 204).
8. Development of morbidity statistics in public hospitals (ongoing).
9. Development of the Health Status Identification Card (*carte sanitaire*) (ongoing).
10. An inquiry into the actual amount of hospital fees, collected during 1970 (in progress).
11. The development of norms and standards with regard to hospitalization (ongoing).
12. A survey of all private sanitary equipment as of 1 January 1973 (in progress).
13. An inquiry into the patient catchment areas and functioning of private health care institutions: the analysis of trends (in progress).
14. Development of statistics relating to health care professionals.

15. Statistics on training programmes for sanitary personnel (in progress).
16. Statistics on the number and level of activities of group practices.
17. Study on hospital expenditures and analysis of *per diem* rates during 1972-3 (in progress).

Health Services Research Division of the National Institute of Public Health and Medical Research
(Division de la recherche médico-sociale de l'Institut National de la Santé et de la Recherche Médicale: INSERM)

The division is undoubtedly the largest and most important health services research centre in France.

The Institute was founded in 1964 and succeeded the National Institute of Hygiene (Institut National d'Hygiène).

The Institute is directly supervised by the Minister of Health and Social Security. The Institute's objectives are twofold: on the one hand, it is charged with the task of developing biomedical research in France. On the other hand, it has to inform the Minister of Health and Social Security and keep him up to date on the health status of the country.

In this respect each research project which it deems appropriate should be carried out by the Institute.

The Institute is governed by a board of eighteen members on which all ministries involved are represented, including the Delegation for Scientific and Technical Research of the Ministry for Industrial and Scientific Development. The president of the Board is J. Bernard.

The Institute is directed by C. Burg and a Scientific Council for all matters of research.

This Scientific Council is assisted by some eight specialized Scientific Committees, which are organized by area of research.

While the Scientific Council is more concerned with the co-ordination and general scientific direction of the Institute, the specialized Scientific Committees are more involved with the hiring of researchers and the development of research contracts in their particular area of interest. Parallel to these councils there are also, as of 1970, some *ad-hoc* councils (23 since 1973) appointed for a period of three years which supervise research efforts in some selected research areas.

The actual biomedical research activities (*Actions thématiques programmées*) are performed either at the Institute itself or at research laboratories developed by the Institute (research units) or at research centres located in universities or public hospitals or other organizations such as the Pasteur Institute.

A division of the Institute is involved with health services research (see below).

As of 1973 some 125 research units were operating in this way, for example, one unit active in the area of ophthalmology, eighteen units active in the areas of immunology.

As of 1 January 1973, 975 researchers were associated with the Institute on a full-time basis together with 1,739 technicians. However other researchers from other organizations, for example, universities and the National Centre for Scientific Research, can also work within the Institute: their number slightly exceeds the number of the Institute's own research staff.

Centralized administrative services and central services for scientific support such as an automated medical information system and central microfilm archives exist at Institute level.

The Central service for Radiation Protection is attached to INSERM.

For its projects the Institute's budget is mainly provided by the Ministry of Health and Social Security and partly by other public and private agencies.

The Health Services Research Division itself is directed by Dr L. Laporte.

The division has eleven sections: the most important ones being:

1. Section of Statistics, Epidemiology, and Information Sciences (F. Hatton).
2. Section of Mortality and Morbidity Statistics (M. Guidevaux).
3. Section of Public Health Strategies (F. Davidson, F. Chicou, and D. Minvielle).

Other sections exist on Cancer, Cardiology, Communicable Diseases, Psychiatry and Mental Health, Mother and Child Care, and Nutrition.

The Division's objectives are fourfold:

1. Public health statistics: data collection and data processing on mortality and morbidity statistics, institutional as well as non-insti-

tutional. All WHO French language classifications are developed here.

2. Epidemiological research.

3. Psycho-sociological research relating health care problems to their social and cultural environment.

4. Public health strategies: preventive care, health care priorities, special programmes (such as drug addiction programmes, etc.). Much of the health input into the consecutive National Plans is prepared by this Division.

The Division has an information, research, and implementation role with regard to each of these four objectives. As of 1974, some 23 full-time researchers of the Institute are working within the Division. In addition, some 23 part-time researchers are also engaged annually in Division research. The technical staff consists of 45 technicians and the administrative staff of 43 administrative personnel. The Division's budget can be estimated at some 10 per cent of the Institute's budget or at about £900,000.

Health services research projects of the Division include:

1. Epidemiological and serological research concerning the effectiveness of two anti-influenza vaccines (p. 216).
2. An operations research analysis of perinatal care (p. 205).
3. A PPBS approach to perinatal care programmes (together with the PPBS and Operations Research Section of the Office of Research and Planning of the Ministry of Health) (p. 204).
4. Treatment costs of multiple trauma patients at the Raymond Poincaré Hospital in Garches (p. 206).
5. Economic analysis of the effects of chronic bronchitis and nicotineism upon job absenteeism (p. 206).
6. Health care problems of migrant workers in an urban area (p. 219).
7. The conceptualization, organization, and management of an automated vaccination record file (p. 222).
8. The development of an information system for preventive care purposes (p. 221).
9. Systematic and periodic medical examination: critical and analytical study of the proposed available systems (p. 220).
10. The morbidity of hospital emergency care patients (p. 214).

11. The development of an automated standardized medical information system for hospital admissions (p. 221).
12. A survey of the health problems of a fast-changing urban population (p. 225).
13. Analysis of public health facilities necessary in a regional principal town (p. 219).
14. Comparative study of average lengths of stay in public and private hospitals (p. 215).
15. Analysis of a mobile emergency care system (p. 218).

Projects in progress include:

1. Permanent national inquiry into general morbidity (continuous).
2. Study on the morbidity of elderly persons (in progress).
3. Study on public health and sanitary problems among selected population groups (in progress).
4. Contribution to the study of the efficiency of the health system's efficiency (in progress).
5. An efficiency analysis of medical action and individual care.
6. Differences between public and private hospital admissions (in progress).
7. General practitioners' attitudes to medicine (in progress).
8. Patients' attitudes to medicine (in progress).

National Centre for Scientific Research (Centre National de Recherches Scientifique: CNRS)

The Centre's primary objectives are to develop, guide, and coordinate the whole of scientific research. In this respect the Centre is primarily a regulating and supporting body which has been discussed elsewhere (p. 149).

However as the Centre can also, in pursuing its objective of encouraging and facilitating research, associate itself with particular laboratories or particular research teams, the Centre is also a research setting. These laboratories or teams associated with the Centre are units under the direction of a university scientist, professor, or leading researcher working in premises which do not belong to the Centre.

Each laboratory is associated (*laboratoire associée*) for four years (renewable) and provides the frame of reference for one or more teams collaborating in the same scientific field.

Each research team (*équipe de recherche associée*) is formed for three years (renewable) and consists of five to ten researchers working on a joint programme. Both laboratories and research teams submit yearly applications for the necessary personnel (including scientists as well as technicians) and the funds for projects, equipment, consultancy fees, and so on, to fulfil their programmes. The researchers themselves have to carry out the bulk of the research programme to which they have been delegated.

This implies that they cannot belong to more than one unit or team at the same time. Also, applications from individual researchers are not funded. Hence although it is not possible to speak of research centres actually belonging to the National Centre, the close link which they have with the National Centre must be recognized; the expression used is: 'created within the National Centre' (*créé au CNRS*).

Research Centre for Social Trends (Centre d'études des mouvements sociaux)

The Centre which is part of the Ecole Pratique des Hautes Etudes (Practical School for Higher Education) is headed by Professor A. Touraine and has a professional staff of forty, five of them working on health care problems. During the last two years the Centre has become interested in the socio-psychological impact of health care problems.

As of 1 January 1975 the Research Centre has been joined by the health sociology group of the Laboratory of Social Psychology (p. 180). In addition to support from the National Centre for Scientific Research, the Centre also receives research grants from the Committee for the Organization of Applied Research on Economic and Social Development (p. 144).

Projects include:

1. The hospital organization and its hierarchy (p. 210).
2. The hospital system: evolution and structural changes (p. 213).
3. Medical referral patterns for socio-economic classes in view of medical care availability (p. 216).
4. Medical referrals of patients and their influence on the offer of care (current).
5. Changes in the public hospital and hospital policies (p. 211).

Centre for Sociological Research (Centre d'études sociologiques)
The Centre is a partner in a co-operative research programme of the National Centre for Scientific Research called: 'Medicine and society' (*RCP Médecine et Société*).

The research staff involved with this research effort numbers ten and is directed by J. Maitre. The Centre's research deals primarily with the psychological and sociological aspects of health care.

The Centre is primarily funded by the National Centre for Scientific Research.

Recent research projects are:

1. The analysis of change in the hospital nurse's profession (p. 231).
2. Sociological study of health care needs (p. 226).
3. The reform of public assistance (in progress).
4. Institutionalized psychotherapy (in progress).
5. The psychiatrist's role in developing a mental health care policy (in progress).
6. Sociological study of the driving forces which take social and other problems in and out of the medical care system (in progress).
7. Popular concepts and practices with regard to health (p. 232).
8. Medical sociology (in progress).

Laboratory of Social Psychology—Health Sociology Group
(Laboratoire de Psychologie Sociale—Groupe de Sociologie de la Santé)

The Health Sociology Group is a small research group within the Laboratory of Social Psychology of the Ecole Pratique des Hautes Etudes (Practical School for Higher Education). The Group is directed by C. Herzlich. Major financial support comes from the National Centre for Scientific Research.

As of 1 January 1975 the Group as such joined the Research Centre for Social Trends (see p. 179).

Research projects include:

1. The conflict between physicians and the social security agency: an analysis of the physicians' arguments (p. 228).
2. Medicine, illness, and society (p. 224).
3. Health and illness: an analysis of a socially based model (p. 225).

4. A psycho-social analysis of the relationships between hospitals and patients (p. 228).

Centre of French Ethnology (Centre d'ethnologie française)

The Centre of French Ethnology is a small research group which besides other research interests concentrates on problems related to medical sociology, the demand and supply of health care.

Its staff include F. Loux and F. Lautman. Research projects include:

1. Popular practices in hygiene and the prevention of illness (p. 232).
2. Medical sociology (in progress).
3. The sociological environment of medical care demand (in progress).
4. Hospital references in the popular press (p. 233).
5. The real world of medical care demand (p. 227).

Centre of Sociological Research into Innovations (Centre de Sociologie de l'Innovation).

Although the Centre could also be listed under universities as it is located within the National Mining Technology College (*Ecole Nationale Supérieure des Mines*) it is listed here as its existence is primarily determined by its association with the National Centre for Scientific Research. The Centre's staff of two researchers is directed by M. L. Karpik. The Centre's group on health care problems is directed by H. Jamous. Project work in the domain of health services research includes: The sociology of decision-making: changing the medical curriculum and the hospital organization (p. 227).

Centre for European Sociology (Centre de Sociologie Européenne)

This Centre is a small research group whose research in sociology also touches on health services research.

Its staff consists of: Boltanski, Castel, and Bourdieu. Research efforts include: medical consumption as related to the human body (in progress).

The Laboratory of Work Economics and Work Sociology
(Laboratoire d'Economie et de Sociologie du Travail)

This is a research institution associated with the University of Aix-en-Provence/Marseilles. Its Group on Health is linked to the Centre of Health Economics of the University and is directed by Professor J. Brunet-Jailly and has a professional staff of three full-time and two part-time economists. It is primarily funded by the National Centre for Scientific Research, the Committee for the Organization of Applied Research into Economic and Social Developments, and the Ministry of Health. The same Group is also closely co-operating with the Institute of Economic Research and Planning of the University of Social Sciences of Grenoble (p. 170) and the Association for the Promotion of Study and Research at the Aix/Marseilles University (p. 186).

The Laboratory has a particular research interest in work economics and work sociology of the medical and nursing professions.

Health services research projects include:

1. Health planning and economic planning (together with the Institute of Economic Research and Planning) (p. 211).
2. The nursing profession in the hospital (p. 231).
3. The impact of work conditions on the health status of the population and on their health expenditure (in progress).
4. Health-related absenteeism (in progress).
5. Indicators of health and economic growth (in progress).
6. Health insurance and medical utilization (in progress).
7. Economic and social costs of alcoholism (in progress).

COMMERCIAL AGENCIES

Research Centre for Welfare and Well-Being (Centre de Recherche sur le bien-être: CEREBE)

This Centre was founded in 1970 and is under the directorship of J. Dupuy. It has a professional staff of six. The Research Centre's objectives are primarily the identification of factors of influence in the area of medical care, medical care consumption, and social security. At present this research is primarily concerned with problem formulation and involves the identification of quantitative as well

as qualitative relationships. The Centre is primarily funded by the Planning Division attached to the Prime Minister's Office.

Research projects include:

1. A qualitative analysis of the growth of medication utilization in general practice: a first approach.
2. Relationships between health care expenditure and mortality and morbidity (p. 193).
3. The consumption of medical drugs: a psycho-socio-economical analysis (p. 229).
4. Quantitative and qualitative analysis of the growth factors for health care expenditure (p. 192).
5. Medical practice and the hospital system (p. 224).

Study Centre of Prospective Studies of Econometrics Applied to Planning (Centre d'études prospectives de l'économie mathématique appliquées à la planification: CEPREMAP)

This private study group operates on a commercial basis and investigates any problem involving an econometric approach.

Occasionally research work is done in the area of health services research.

The Centre's staff involved with this research numbers about four and includes F. Fabre and A. Nataf. Health services research work is funded by the Planning Commission, the Delegation for Scientific and Technical Research, and the Ministry of Health and Social Security.

Research projects include:

1. An economic analysis of cervical cancer screening programmes and preventive care (p. 203).
2. A financial analysis of a cervical cancer screening policy (in progress).

Company for Economics and Applied Mathematics (Société d'économie et de mathématique appliquée: SEMA)

This private company was founded in 1964 as a consulting firm. Between 1964 and 1967 some research projects were developed investigating the economic aspects of health care problems. This research was funded by the Ministry of Health and Social Security in view of the Fifth French National Plan.

In 1969 a survey of a thousand families was organized for the Federation of Private Hospitals (*Fédération Intersyndicale des Etablissements d'Hospitalisation Privée*).

No further health services research has been reported.

SEDEIS

This small private research organization directed by B. and H. de Jouvenel is primarily involved with the analysis and projection of economic phenomena. A single study was done in 1970-1 which touches on health services research: Social indicators.

Association for Pure and Applied Research

(Association pour la Recherche pure et appliquée: AREPA)

This private company was involved in 1967 with a study on cost evaluation of illnesses in the surgical ward of the Caen hospital.

No further health services research has been mentioned.

Company for the Promotion of Non-Military

Operations Research (Société pour l'avancement et l'utilisation de la recherche opérationnelle civile: AUROC—CEGOS)

This private company was involved during the period 1963-7 with operations research in health services projects of the Ministry of Health and Social Security. In 1973, the company also investigated scheduling and admissions policies in the anti-cancer centre in Caen.

Society for Studies and Research in Social Sciences

(Société d'études et recherches en Sciences Sociales: SERES)

This private company directed by R. and M. Fichelet has six full-time academic researchers and is active in the areas of urban planning, transportation planning, political attitude polling, and health services. Main support comes from governmental grants.

Most research is of a qualitative psycho-sociological nature and is analytical and basic or developmental.

Research activities include:

1. Physicians facing postgraduate training.
2. Physician attitudes towards pain and anxiety.
3. Therapeutic innovations and information as seen by the hospital medical staff.

4. Therapeutic innovation in the psychiatric field.
5. The future of medicine and the health system as seen by young physicians and medical students.

Research Centre of the Loire for Applied Sociological Research (Centre de recherches et d'études sociologiques appliquées de la Loire: CRESAL)

Although some sociological research related to health has been reported no project work could be identified.

Institute for Social Science and Social Research (Institut de sciences sociales et de recherches sociales)

Although some health-related social research has been reported, no project work as such has been done.

Institute for Applied Economic Research (Institut de sciences économiques appliquées: ISEA)

Although health economic research has been reported, no health services research projects have been done. The Institute is directed by Perroux.

Centre for Study, Research, and Development of Organizations (Centre d'études et de recherches et de formation institutionnelle: CERFI)

This private research centre has been marginally involved with health services research projects.

Two have been reported:

1. The institutionalization of a collective work force in a psychiatric care hospital (p. 223).
2. Kindergarten and family life.

Association for the Promotion of Study and Research at the Aix/Marseilles University and for the Promotion of Applied Research (Association pour le développement de l'enseignement et des recherches auprès de l'Université d'Aix/Marseille et pour l'information et la promotion de la recherche appliquée: ADERAM—ASSIPRA)

This agency has close connections with the Laboratory of Work Economics and Work Sociology (p. 182). One project marginally related to health services research has been reported: research into social indicators relating to working conditions (in progress).

INDEPENDENT AGENCIES

Medical Sociology and Demography Centre (Centre de Sociologie et Démographie Médicale)

The Centre was founded in 1960 as a non-profitmaking private organization. Its research objectives are demographic, although for each project the group stays in close contact with sociologists and economists of various other centres, such as: INSERM, CREDOC, and CNRS.

These contacts explain the many reports of CREDOC's or INSERM's research projects in the Centre's quarterly *Cahiers de sociologie et de démographie médicales*.

The small research staff (three full-time and four part-time) is headed by D. Bui-Dang-Ha.

Its resources are provided by contracts and other financial grants. Projects included are:

1. A tentative approach to planning for health professionals (p. 223).
2. Medical demography in France and in the German Federal Republic (p. 231).
3. Structural shifts in the medical profession in France: 1963-8 (p. 230).
4. Women in private practice: some demographic hypotheses (p. 230).
5. Diffusion and new techniques in medical practice: opinions and attitudes of French general practitioners (in progress).

The International Centre of Socio-Economic Research and Studies on Health (Centre international d'études et de recherches en socio-économie de la santé: CIERSES)

This Centre is a new research organization, founded in July 1973, within the 'Foundation Royaumont', which is also its primary funder.

Additional funds are also provided by commercial firms such as 'Co-ordination of Hospital Economics and Management: CHEMA'.

Its staff, which numbers twelve, is directed by P. Gorecki. The group's objectives are to start a research centre to study among other areas, individual and collective modifications in the field of health, within their actual context: social, economic, and demographic.

To attain these objectives, they plan to promote the publication of all relevant results, hold regular conferences and provide training for people capable of ensuring the practical application of research results. One research project has been started: elderly persons: marginal individuals (in progress).

Medical Economy Section of the Centre for Research and Documentation of Consumption (Division d'économie médicale du Centre de recherches et de documentation sur la consommation: CREDOC)

The Centre was founded in 1954 as a research organization sponsored by the Planning Commission of the Ministry of the Prime Minister.

Half its Board of Governors are appointed by the Minister of Economics and Finance. The other half are elected members. The President, currently J. Dumontier, is always one of the first half. The Centre is directed by E. Lisle and co-directed by R. Coste and G. Rösch. The Centre consists of six sections or research groups each dealing with one particular research area:

1. Analysis of family behaviour, life style, and buying patterns.
2. Market research on individual and collective goods and services.
3. Housing and education.
4. Savings and savings behaviour.
5. Medical utilization and socio-medical economics.
6. Income redistribution, elderly persons, projections of life styles.

In addition to these six research sections, there are two technical sections: a computer centre and a library. The Centre's administration is taken care of by one administrative and financial group and one public relations group. The Centre's professional staff consists of eighty full-time members to whom are added a variable number of part-time and affiliated researchers. The Centre initiates any research project commissioned by either private or public organizations. However, the major part of its work is done for the Planning Commission itself. The Centre works closely with the National Institute of Statistics and Economics of the Ministry of Economics and Finance (*Institut National de Statistiques et d'Economie: INSEE*).

The Centre's budget in 1972 stood at about £600,000 of which 34 per cent is a flat subsidy and the rest is contract work.

The Centre's Medical Economy Section is undoubtedly the single most important group active in the area of health economics in France and on the continent. The section is headed by G. Rösch and has a professional full-time staff of twelve including A. Foulon, S. Sandier, A. and A. Mizrahi, and A. George.

Eighty-five per cent of the Section's budget is public money from agencies such as the Planning Commission, the National Health Insurance Agency, and the Committee for the Organization of Applied Research on Economic and Social Developments. The rest is provided by such organizations as the National Federation of Pharmaceutical Industries and Kodak. The Section's budget can be estimated at about £150,000 or one-quarter of the total budget.

The Section's research activities are fourfold:

1. Macro-economic analysis of health accounts. This research activity in co-operation with the National Institute of Statistics and Economics develops and analyses all financially relevant health and health care flows within the context of a consistent framework of national accounts. The concurrent databanks will be updated yearly and computerized. The section expects to promote parts of its methodology on an EEC level. Part of this research is already operational.

2. Macro-economic analysis of the health care system. The system looked at includes demand variables as well as supply variables. Three projects are being worked on:

- (a) Analysis of social security data: this analysis expands the

national health accounts project on a much more detailed level (by type of services, type of consumer, etc.) and also serves as an input into the national health accounts research.

The data is also collected on a regional basis (ninety French departments). This databank extended over ten years allows a wide variety of hypotheses regarding to medical utilization to be tested.

(b) International comparison. An extensive comparative analysis has been done, comparing the detailed statistics developed in this research effort with similar statistics drawn up in the USA. Other countries will also be looked at in as much detail as possible.

(c) Projections. The databank set up allows for projecting trends and developments on the national (national plan) as well as on the regional level. Particular attention has been paid to all radiology utilization.

3. Medical care utilization. This research analyses the amount of as well as the structure and the functioning of medical care utilization. Three groups of variables are looked at:

(a) Economic and social variables.

(b) Variables related to pathological incidences.

(c) Supply determining variables.

A survey of 10,000 families spread over 600 communities involving 24,000 persons and 300 diagnoses was carried out in 1970-1. In 1973 a more detailed survey looked at medication and drug consumption. In 1974 a more detailed survey of medical care acts in patient-physician encounters was carried out.

The main hypothesis upon which the survey is based states that medical utilization is determined by the structure of medical care demand.

Hence actual supply and demand are determined by the interaction between accessibility and availability on a regional scale. Many hypotheses are being continuously tested based upon the databank developed through these surveys.

4. Miscellaneous studies. The study of work patterns of general practitioners can be classified in this category.

The Section's research activities are well documented and have recently been partly published in book form (73). Health services research projects and reports discussed include:

1. Survey of work patterns of general practitioners (p. 200).
2. Analysis of the medical care system (p. 198).

3. A prognosis of medical production and medical utilization during the Sixth Plan 1971-5 (p. 197).
4. A comparative analysis of projections and actual figures of medical care utilization (p. 197).
5. Economic analysis of the activities of the medical profession (p. 200).
6. Analysis of regional differences in the health care system (p. 199).
7. Medical utilization (p. 194).
8. The impact of socio-economic factors upon drug consumption in 1970 (p. 196).
9. The impact of demographic factors upon the evolution of medical utilization (p. 195).
10. Study of the costs of protecting human life from a medical point of view (p. 201).
11. National health accounts (p. 194).
12. The health care coverage of the population under the different social security programmes (p. 217).

HEALTH SERVICES RESEARCH PROJECTS

ECONOMY-ORIENTED HEALTH SERVICES RESEARCH (32)

Study of the economics of health (Essai sur l'économie de la santé)

In 1967, J. Brunet-Jailly, while a student at the *Department of Law and Economic Sciences* of the University of Paris started a four-year research project, partially funded by the Ministry of Education and the Social Security Agency of Strasbourg to investigate health and health care problems from an economic point of view.

This very extensive, analytical, basic, and developmental research was part of the author's doctoral thesis. The methodology of this research is primarily the economic analysis of different areas related to health:

1. Regarding private medical offices the author hypothesizes that the actual financial and operational structures of these offices do not correspond at all with their actual health care activities.
2. This same hypothesis also holds for the hospitals. In this case a conflict of interest could also be identified between public officials and hospital care practitioners.
3. The pharmaceutical industry, though controlled, is still the most flexible in following the economic rules of supply and demand.
4. Based upon this framework, the author investigates from a micro-economic point of view the different production units in the health care system: private offices, nursing units, pharmacy offices, etc. Inputs as well as outputs are investigated and a system of parameters is worked out in each case.
5. The research also looks at the education, research, and investment costs which go into each of these production units. A comparison is made of the actual running costs.
6. Regarding those factors which influence medical utilization, the author investigates and proves the preponderance of disposable income—as a surrogate for cultural level—availability of facilities and social security coverage in explaining these utilization patterns.
7. The author also hypothesizes the ineffectiveness of governmental policies which try to slow down medical utilization. Though all prices are controlled and all volumes of supplies are limited the individual production units, including the pharmaceutical industry are actually operating on an open-market basis. Hence one should tackle these open-market conditions rather than their boundary constraints.
8. In order to do this, the study tries to relate health care costs to their efficiency and effectiveness. Two approaches are made: the identification of economic costs of job accidents and the identification of economic costs of job inactivity.
9. The author is well aware of this limited economic approach for an economic analysis of health of two still unmeasurable objectives:
 - (a) The fight of the economic system to keep its human performers as long and as well as possible.
 - (b) The fight of the human race against death.

Many of the topics mentioned here have been worked out in great detail in the study (5).

Health economics (Economie de la santé) and A methodology for an economic analysis of health expenditures (Methodologie pour l'analyse économique des dépenses de santé)

In 1972, the *Institute for Research into Economic and Social Development* of the University of Paris-I finished two small-scale research endeavours, the first one being carried out by Le Than Kai, the second by Nguyen Huu Chan.

Both projects look at health and health care expenditure within the framework of the national economy. The role of health is compared with the role of educational programmes and programmes for national development. Some descriptive analysis which highlights the importance of health to the national economy is provided.

Qualitative and quantitative analysis of the growth factors for health care expenditure (Analyse qualitative et quantitative des facteurs de croissance des dépenses de santé)

In 1972, the *Research Centre for Welfare and Well-Being*, published a research proposal by F. Gibert, F. Fagnani, A. Letourmy, and J. Dupuy to investigate the growth factors of health care expenditure.

The methodology of this developmental and analytical research consists of:

1. The development of an open-system model identifying the elements, the relationships, and their causal structure, of health care related expenditure and its growth.
2. The quantification of the elements and their relationship by way of indicators available or yet to develop.
3. An in-depth single case-study to investigate the feasibility of the model and to enumerate its parameters. A single region of 500,000 people will be thoroughly studied by means of already available statistics and future questionnaires in order to validate the model.
4. Experimental use of the model to investigate alternative actions and strategies.

This study follows up the initial initiative described on p. 193: 'Relationships between health care expenditure and mortality and morbidity.' Many relationships have so far been quantified. However

their causal structure is not yet fully established, but has been extensively discussed by the researchers. The research results are published in two documents (30, 37).

Relationships between health care expenditure and mortality and morbidity (Relations entre dépenses de santé, mortalité, et morbidité)

In 1973, the *Research Centre for Welfare and Well-Being* published the results of a research endeavour in support of a Special Task Force within the Ministry of Health and Social Security. This one-year special research effort was directed by J. Dupuy and tried to formalize and identify the many relationships which link health care expenditure to mortality and morbidity. The methodology of this analytical and developmental research effort consists of:

1. A critique of available health care expenditure-mortality-morbidity models based upon primarily French and US findings.
2. The formulation of a basic model: its elements, its relationships, and the causal structure of these relationships.

Though no final version of the model has as yet been elaborated, the research itself investigates some of the most important relationships which constitute the model. This research endeavour has been documented (24).

The effect of health insurance upon the redistribution of disposable income (Les transferts de revenus provoqués par l'Assurance-Maladie)

In 1973, the *Centre for Economic Research and Management* of Lille University received a one-year £26,560 research grant from the National Centre for Scientific Research, to investigate disposable income and its distribution in a sample of families subject to different types of health insurance. The research staff includes among others J. Saily, F. Calcoen, M. Biart, F. Babe, and R. Delfosse and is directed by M. Falize.

The methodology of this descriptive and developmental research project will be based upon an analysis of the socio-economic data collected from a sample of 1,200 families in the north-west of France. No results are as yet published.

National health accounts

One of the three major research efforts of the *Medical Economy Section* of the Centre for Research and Documentation of Consumption relates to the elaboration of a system of national health accounts.

This research effort has been encouraged by the National Institute of Statistics and Economic Research.

The principal investigator is A. Foulon.

The methodology of this descriptive and application-oriented research deals primarily with the development of computerized files and their structure. Three subfiles have been studied for the years 1950-72: statistics on medical utilization and its financing; census data; other data pertaining to GNP, socio-economic indicators, etc.

Special attention is given to fitting these health statistics into an over-all system of national accounts.

The main objectives of this research are the flow analysis and the trend analysis of health care expenditure. The research staff also envisages extending its research effort on a European scale: a system of national health accounts for the countries of the European Economic Community. No results, however, of this last endeavour are yet published. The French research effort is well documented (27, 33).

Medical utilization

One of the three main research efforts of the *Medical Economy Section* of the Centre for Research and Documentation of Consumption relates to the analysis of medical utilization, its volume and its constituent elements. This micro-economic research effort which, because of its scope, is geared more towards the identification of relevant parameters than towards the analysis of trends is done in co-operation with the National Institute of Statistics and Economic Research, the National Social Security Agency, and the National Association of Pharmacists.

The principal investigators of this ongoing research effort are A. and A. Mizrahi. The methodology of this descriptive, analytical, and developmental research endeavour consists of:

1. The development of controlled field experiments in order to collect data relating to medical utilization. A special technique has been developed in this respect involving use of social security data.

At present a sample is being investigated of about 10,000 families in 600 communities representing 24,000 persons encompassing about 300 main diagnoses, with a view to the determination of their use of medical services.

In 1973, an extensive sample of pharmacists was also investigated with a view to an in-depth analysis of medication and drug consumption in France. In 1974, a sample of 400 general practitioners, spread over four French regions, was followed up, with a view to an in-depth study of general practitioners' medical care utilization.

2. The analysis of the data collected regarding the identification of factors and parameters relating to:

- (a) The economic behaviour of the consumer.
- (b) The pathology of the patient.
- (c) The availability and structure of medical care supply.

Occasionally some sub-projects are done but always in the framework of the general approach, for example, medical utilization by elderly persons.

The research staff also aims to extend its sub-project on the use of medication to other countries of the EEC. Some of the sub-projects or topics which have been published are for instance:

Consumption of medication in 1970 (52).

The effect of age and sex on medical utilization (67).

Morbidity and its effect on medical utilization (40). This last sub-project is being carried out by C. Guillot, A. and A. Mizrahi, and G. Rösch and contains a survey of the prevalent and incidental morbidity in a test sample of 1,062 people living in Paris. This research also studies the variation in frequency of the use of services in relation to the type, the seriousness, and the duration of the disease.

Critical evaluation of survey methods (41). This sub-project by C. Guillot and A. and A. Mizrahi develops the sampling technique used in the main project.

The impact of demographic factors upon the evolution of medical utilization (Les facteurs démographiques et la croissance des consommations médicales)

One of the three main research efforts of the *Medical Economy Section* of the Centre for Research and Documentation of Consumption relates to the analysis of medical utilization and its factors of in-

fluence (p. 194). This project on the impact of demographic factors upon the evolution of medical utilization is part of the over-all research effort and is directed by A. and A. Mizrahi and S. Sandier.

The methodology of this retrospective, comparative, and analytical developmental research work consists of:

1. The development of statistics which link demographic characteristics with medical utilization. French and American health statistics are used.
2. The analysis of previously developed statistics based upon comparative tables and graphs.

Many conclusions are reported which highlight the impact of demographic factors upon medical utilization.

The comparison between French and US experience also allows to some extent the identification of effects of medical care organization, the financing of medical care, and access to medical care upon medical care utilization.

Several publications refer to this project (66, 67, 68).

The impact of socio-economic factors upon drug consumption in 1970 (Influence des facteurs socio-économiques sur la consommation pharmaceutique en 1970)

One of the three main research efforts of the *Medical Economy Section* of the Centre for Research and Documentation of Consumption relates to the analysis of medical utilization and its factors of influence (p. 194).

This project on drug consumption directed by T. Lecomte is part of the major research effort and deals with the identification and quantification of factors which influence drug consumption. The methodology of this comparative and retrospective developmental research project is straightforward:

1. A field survey records all drug consumption of a sample of the general population. Drug consumption is classified by drug therapy, prescriptions or not, and quantity involved. The population is categorized by age, family size, income level, and educational level.
2. An analysis by two-way classifications: significant differences in type of utilization by social group are defined.

The study reveals many interesting hypotheses and conclusions relating to drug consumption in general (51).

A prognosis of medical production and medical utilization during the Sixth Plan 1971-5

(Projections de la production et de la consommation de soins médicaux VI^{ème} Plan 1971-5)

In 1970, the *Medical Economy Section* of the Centre for Research and Documentation of Consumption started a one-year research effort to develop a sensible and coherent prognosis of the parameters of medical production and medical utilization for the Sixth Plan (1971-5 period).

The principal investigators were B. Couder, S. Sandier, and F. Tonnellier.

The methodology of this analytical, prospective, and developmental research project consists of the elaboration of sensible constraints and relationships among the relevant parameters. A linear programming formulation could be obtained which has been determined for the following areas of application: hospital services, physician services. Results are published (16, 19).

A comparative analysis of projections made and actual figures of medical care utilization

(Comparaison des projections faites pour le VI^{ème} Plan (1970-5) et de l'évolution récente (1969-72) de la consommation de soins médicaux)

This research work of the *Medical Economy Section* of the Centre of Research and Documentation of Consumption is primarily a midway evaluation of earlier projections made within the framework of the previous research project.

The main investigators were B. Couder and S. Sandier.

The methodology consists of a straightforward comparison of projected annual figures and actual annual figures with regard to physician care. The authors proved their previous research work and the model which they developed in this context to be very accurate.

Long-term projections, however, seem to be more accurate when based upon relative values, while short-term projections seem to be more accurate when based upon absolute as well as relative values (17).

Analysis of the Medical Care System (Analyse du fonctionnement du système de soins médicaux)

One of the three main research efforts of the *Medical Economy Section* of the Centre for Research and Documentation of Consumption relates to a macro-economic analysis of the medical care system on the basis of extensive and detailed social security data covering the ninety regions in France over a ten-year period.

The principal investigator of this descriptive, analytical, and developmental research project is S. Sandier.

The methodology of this research consists of a statistical analysis of the social security data. Techniques used are regression analysis, factor analysis, and cluster analysis. The research also aims at developing relevant social indicators and at testing hypotheses about medical utilization patterns. Several sub-projects are also either in progress or proposed by the research staff:

International comparison of medical utilization patterns. US data is already analysed. Canadian, British, and Dutch data will also be looked at (forthcoming).

Prognosis of relevant medical utilization indicators. This sub-project is being carried out in view of the Sixth Plan (p. 197).

Health care coverage of the population under the different social security programmes.

Production figures of private general practitioners who use the national health insurance agency rates (p. 217). This sub-project done by B. Guibert, Ch. Lenoir, and S. Sandier is expanded in another sub-project: Economic analysis of the medical profession's activities (p. 200).

Activities, turnover, and income of the private doctors in France 1962-6-9 (34).

Utilization and production of medical radiology (18). This sub-project, by B. Couder and S. Sandier, looks at regional characteristics for 1972 and trends for the period 1949-72 of medical radiology in France.

Analysis of regional differences in the health care system (p. 199).

Analysis of regional differences in the health care system (Analyse départementale du système des soins médicaux)

In 1972, the *Medical Economy Section* of the Centre for Research and Documentation of Consumption started a two-year research effort to investigate regional differences in medical care utilization in relation to its availability. An extension of this study which would also include socio-economic variables is anticipated. The main investigators are S. Sandier and F. Tonnelier. The methodology of this descriptive, analytical, and developmental research project encompasses the following stages:

1. An analysis of regional medical care utilization parameters, for the year 1971 and a trend analysis for the period 1962-71. The techniques used are factor analysis and cluster analysis of hospital data (length of stay and number of admissions in the public and private hospitals) and social security data on regional utilization by type of medical treatment.
2. An analysis of regional medical care utilization parameters in view of medical care availability parameters for the year 1971 and a trend analysis for the period 1962-71. Techniques used are again factor analysis and cluster analysis. The data bank developed consists of physician density data and regional consumption data by type of medical treatment.

The study is very extensive and well documented. Many parameters of the medical utilization patterns are identified. The study is a fairly successful attempt to identify the salient characteristics of medical care utilization. Though the notion of medical care substitution—one type for another—should be carefully dealt with, several complementary types of medical care could be identified, for example, general practitioner medical care versus specialist medical care, private office versus public hospital medical care. The study also states that physician density is related to the type of care received but hardly at all to the growth-rate of medical utilization (75, 76).

The development of indicators to measure the economic consequences of public health improvement (Utilisation d'indicateurs pour la mesure indirecte des conséquences économiques de l'amélioration de la Santé Publique)

In 1970, J. S. Cayla of the *National School of Public Health* started a short-term research project to investigate the different indicators which have been used to evaluate the economic consequences of public health improvement. This short-term research project is much more an analysis of available indicators in other countries than the development of any new areas. The argumentation is presented. No hypotheses are tested (9).

Economic analysis of the activities of the medical profession (Etude économique de l'activité des médecins)

In 1970, the *Medical Economy Section* of the Centre for Research and Documentation of Consumption started a one-year research project to investigate the activities of physicians during the years 1962-9. The research staff included A. Foulon and S. Sandier. The methodology of this descriptive and developmental research is straightforward:

1. The development of relevant statistics.
2. Statistical analysis and hypothesis testing with regard to type and number of particular professional activities.
3. Trend analysis of the data.

Many interesting conclusions are obtained relating to the production level and the productivity of physicians and general practitioners as well as specialists.

An extensive analysis of physician income and its evolution is reliably estimated by two different methods and also included in this study (34, 35, 39).

Survey of work patterns of general practitioners (Enquête sur les comportements patrimoniaux des médecins exerçants en pratique libérale)

In 1966 a major effort was begun to investigate the work patterns of general practitioners. The main responsibility for this research is held by A. George of the *Medical Economy Section* of the Centre for

Research and Documentation of Consumption. A sample of 400 general practitioners spread over four French regions was surveyed in this research.

All practitioners were affiliated to two of the Unions belonging to the Confederation of Medical Unions (*Confédération des syndicats médicaux*). Part of the research was sponsored by the Committee for the Organization of Applied Research on Economic and Social Developments.

The survey itself was conducted by H. Faure of the CREP-Institute.

The methodology of this comparative and developmental research consists of:

1. A survey of type and number of different professional activities including actual hours worked by general practitioners.
2. A survey of the internal organization of these general practitioners' practices: differences in professional expenses, group practice or not, etc.
3. A survey of external factors and regional differences.
4. A survey of individual physician characteristics.
5. A factor analysis of the data obtained with a view to the classification of the physicians surveyed.

Though several results and conclusions have already been obtained, none of them have been published. The research is still considered top secret.

Study of the costs of protecting human life from a medical point of view (Recherches sur le coût de protection de la vie humaine)

In 1969, the *Medical Economy Section* of the Centre for Research and Documentation of Consumption received a one-year research grant from the Committee on Scientific and Technical Research to investigate the costs and profits of particular medical activities from a micro-economic as well as from a macro-economic point of view.

The principal investigator was L. Lebart.

The methodology of this analytical and developmental research consists of:

1. A methodological analysis of cost-benefit analysis *a priori*: the projection of parameters, and *a posteriori*: the statistical estimation of parameters.

This analysis concentrates on micro-economic cost-benefit studies.

2. Subsequently, different examples of medical activities are investigated using a cost-benefit analysis *a posteriori*. These examples include non-French as well as French cases. They highlight:

(a) The costing mechanism for medical activities.

(b) The diffusion of medical technology.

(c) The strategic value of medical policy in view of general economic policy.

3. A methodological analysis of cost-benefit analysis from a macro-economic point of view. Special attention is paid to those difficulties which stem from the aggregate character of the data at hand.

4. Subsequently, this macro-economic cost-benefit analysis is applied to different examples:

(a) Cost-benefit analysis applied to time series data.

(b) Cost-benefit analysis comparing different social classes.

(c) Cost-benefit analysis applied on the international and inter-regional level.

This study is based on existing data sources, no new data have been collected. Special attention is paid to the estimation of cost-benefit analysis parameters such as quantifying benefits, etc.

In many instances, this quantification is either interval or ordinal, based upon a factor analysis and cluster analysis technique.

This study is also to a certain extent a methodological analysis of the research work of the Medical Economy Section of the Centre for Research and Documentation of Consumption.

Many new grounds for further research are tentatively explored (49).

The cost of illness in hospital. A proposal to evaluate hospital costs by two converging methods
(Le coût de la maladie à l'hôpital. Essai d'évaluation directe du coût de l'affection au niveau de l'Unité de soins—
Méthode d'estimation indirecte appliquée au niveau global)

In 1973, R. Boyer and M. Liess of the University of Paris-X developed a proposal to investigate hospital costs by way of two converging methodologies. The first method consists of a detailed single case analysis of the hospital analytical accounting costs in relation to the characteristics of the patient load as reflected in medical records on nursing units. The second method consists of a statistical and

cross-sectional analysis of a sample of several public hospitals linking up the over-all hospital costs with available morbidity statistics. No results are as yet published, beyond the methodology stage (4).

Economic impact of the health care sector: evaluation methods (Contribution économique du secteur de la santé—méthodes d'évaluation)

In 1968, J. Bourdin, a student at the *Department of Economics* of the University of Caen started to investigate the methods applied in the evaluation of the economic impact of the health care sector.

This master thesis work was directed by Professors Pasquier, Levy, and Matringe. The methodology of this developmental, analytical, and primarily theoretical research consists of two parts:

1. The analysis of different methods to determine and evaluate productivity in the health care sector, particularly physicians and hospitals.
2. The analysis of different methods to determine and evaluate the efficiency of alternative health care programmes.

The research report is predominantly a comprehensive survey of available methods (3).

Economic analysis of cervical cancer screening programmes and preventive care (Etude économique de la prévention et du dépistage précoce du cancer du col de l'utérus)

In 1968, the *Study Centre for Prospective Studies of Econometrics Applied to Planning (CEPREMAP)* was commissioned by the Planning Office and the Studies and Budgets Bureau of the Ministry of Social Affairs to do a one-year research project on the economic implication of different cervical cancer screening programmes.

This study was financed by the Delegation for Scientific and Technical Research. The main investigators of this analytical and application-oriented research were F. Fabre and J. Grandmont.

The methodology consists of:

1. The elaboration of the epidemiological data relating to the incidence of cervical cancer and its different phases.
2. The cost calculation of different screening programmes in function of the screening costs and their effectiveness.

3. A net cash flow model of costs and benefits of one alternative screening programme based upon foreign incidence and therapeutic data.

Results have been published (29).

Psychiatric care hospitalization costs in Bourgogne and Franche-Comte (Les coûts de l'hospitalisation en milieu psychiatrique en Bourgogne et en Franche Comté)

In 1972 the *Institute of Econometrics* of Dijon University started a two-year research project to investigate hospital costs for psychiatric patients in two French regions. This project was funded by the National Centre for Scientific Research. The main investigators were Professor C. Ponsard, M. Gadreau, G. Dagrás, M. D'Intignano, J. Chevailler, and Professor M. Mougeot. The methodology of this descriptive and developmental research project consists of:

1. A cluster analysis technique to determine the hospitalization costs of several diagnostic groups.
2. A cluster analysis technique to relate diagnosis to socio-demographic characteristics of the patient population.

Several interesting conclusions about the incidence rates of psychiatric diagnoses in different socio-economic groups and the resource utilization of these groups are presented.

One report has been published on psychiatric care hospitalization costs in the regional hospital centre of Dijon (36).

A second report compares this centre with the Besançon centre and the Novillars neuro-psychiatric centre (70).

A PPBS approach to perinatal care programmes (La périnatalité—étude de rationalisation des choix budgétaires)

At the beginning of 1970, the Ministry of Health and Social Security started a five-month research effort to analyse and define the impact of alternative decisions which could be taken by the Ministry regarding perinatal care programmes. The project director was B. Vignier and the research staff included M. T. Chapalain, M. Farcat, Rumeau-Rouquette, and M. Fagnani, and F. Chicou of the *Division of Health Services Research* of the National Institute of Public Health and Medical Research.

The methodology of this analytical and application-oriented research is centred around a PPBS approach.

Seven sub-programmes are identified and evaluated relating to a set of indicators reflecting the stated objectives.

1. Medical training.
2. Statistics and research.
3. Anti-rubella vaccination programme.
4. Prenatal surveillance.
5. Delivery care surveillance.
6. Labour room resuscitation.
7. Newborn baby resuscitation intensive care unit.

This research, which represents the first real effort in the area of PPBS with regard to health care programmes in France, has been implemented within the national fiscal budget of 1971. The many unsolved problems which emerged out of this research effort led to the following research project. Results of this PPBS formulation are published (69, 71).

An operations research analysis of perinatal care (La périnatalité: analyse sous l'angle de la recherche opérationnelle)

In 1971, the *Health Services Research Division* of the National Institute of Public Health and Medical Research received a one-year research grant to investigate (1) the organization of assistance to newborn babies and (2) to analyse the data now available in the field of perinatal care at the national level.

The research staff included J. Bessis, F. Chicou, M. Depagne, F. Fagnani, A. Radenac, and A. Tenaillon.

The methodology of this analytical and developmental research consists of:

1. A systems analysis to identify and interrelate the different problem areas of perinatal care.
2. An analysis of existing data on 1,568 newborn deaths and of a sample of 20,000 pregnancy cases. The analysis has been used to quantify the model's parameters. A factor analysis is performed on the experimental results (1).

Economic analysis of the effects of chronic bronchitis and nicotinism upon job absenteeism (Etude économique sur les retentissements de la bronchite chronique et du tabagisme sur l'emploi)

In 1974, F. Chicou of the *Health Services Research Division* of the National Institute of Public Health and Medical Research begun an investigation of the economic impact of chronic bronchitis and nicotinism by use of the job absenteeism rate. The methodology of this analytical and developmental research project is so far sketchily defined, as the project has only just been initiated. A controlled sample survey is anticipated, and a public relations campaign to highlight the results is envisaged.

No results are yet available.

Treatment costs of multiple-trauma patients at the Raymond Poincaré Hospital in Garches (Coût de traitement des polytraumatisés à l'hôpital Raymond Poincaré de Garches)

In 1972, D. Minvielle, MD, of the *Health Services Research Division* of the National Institute of Public Health and Medical Research started a two-year research project, with a grant of £1,200 from the Institute, to investigate the treatment costs of multiple trauma patients.

The research staff included M. Depagne, Moulères, J. Tordeux, and D. Cebe.

The methodology of this analytical and developmental research consists of:

1. The operationalization of detailed treatment cost identified in personnel costs, physician fees, medication, medical equipment costs, and hospitalization costs.
2. An experiment to evaluate these costs.
3. The comparative analysis of the detailed treatment cost differences among the patients (grouped by severity) with the standard fees charged in the conventional way.

Major discrepancies could be established. The authors conclude nevertheless that a real treatment costing mechanism would be very cumbersome (61).

The economic and social costs of chronic bronchitis in France (Le coût économique et social de la bronchite chronique)

In 1972, the *Centre for Economic and Social Research* of the University of Paris-X received a nine-month research grant from the Directorate for Social Affairs of the Commission of the European Economic Community to develop the methodology to (1) formulate a model of the impact of chronic bronchitis and (2) work out policies and strategies to deal with chronic bronchitis.

The research staff included E. Levy and R. Pariente.

The methodology of this analytical and developmental research consists of:

1. The development of a model to pinpoint the many causal relationships among the factors and mechanisms of chronic bronchitis.
2. Data collection; inconsistencies are resolved by use of foreign data.
3. Cost evaluation: economic and social cost data are linked to the model.

The social costs are deliberately calculated in a rudimentary way and emphasis is put upon the economic cost data (54).

A cost-benefit analysis of mental illness programmes (Maladies mentales: coût-avantages de deux organisations de soins pour les malades mentaux)

In 1969, the *PPBS and Operations Research Section* of the Office of Research and Planning of the Ministry of Health and Social Security started a cost-benefit analysis of alternative programmes relating to mental illness.

The project was carried out by staff members of the section, under the directorship of M. Chapalain.

The methodology of this analytical and developmental project is a straightforward PPBS approach. Much research effort has been expended in the identification and measurement of relevant parameters with regard to mental illness (58).

The public health and social impact of different types of child care centres (Les incidences sanitaires et sociales de modes de garde des enfants de 0 à 3 ans)

In 1972, the *PPBS and Operations Research Section* of the Office of Research and Planning of the Ministry of Health and Social Security started a one-year research project to investigate the impact of different programmes for child care centres taking into account their public health and social impact.

The investigators were all staff members of the section and were directed by M. Chapalain.

The methodology of this analytical and developmental research consists of the following stages:

1. An analysis and inventory of the present types of child care centres.
2. An evaluation of the present types of child care centres including the mothers' viewpoint.
3. The operationalization of objectives: free choice of work for women; the children's development.
4. The analysis of comprehensive alternative programmes with a view to their contribution to the stated objectives.

No single alternative is selected as this will depend upon the Minister's preliminary decision regarding the general orientation of his policy (47).

An economic analysis of a nightly vertebral traction therapy programme against scoliosis (L'intérêt économique de traitement des scoliozes par traction vertébrale de nuit)

In 1973, the *PPBS and Operations Research Section* of the Office of Research and Planning of the Ministry of Health and Social Security started a six-month research project to investigate the costs and benefits of a particular therapy against scoliosis.

This analytical and developmental research was done by M. Chevailler.

Its methodology is straightforward:

1. A model of scoliosis incidence and its different stages for different age-groups.

2. The cost-benefit analysis of the therapy envisaged.

Research results have been published (12).

Analysis of programmes to prevent suicides
(Pour une politique de la santé: le suicide)

In 1970, the *PPBS and Operations Research Section* of the Office of Research and Planning of the Ministry of Health and Social Security started a one-year PPBS analysis of alternative suicide prevention programmes.

The principal investigators of this analytical and developmental research project were Geiger and Voiteiller, M. Chapalain and M. Mermilliod. This staff was directed by M. Vivies.

The methodology consists of:

1. The collection of data to quantify the different parameters of suicide: incidence rates, mortality rates, referrals by psycho-social centres, etc.
2. A cost evaluation of suicide.
3. The definition of objectives.
4. The evaluation of alternative preventive programmes.
5. The development of alternative administrative strategies.

Research results have been published (78).

Economic efficiency analysis of the BCG vaccine against tuberculosis
(Etude économique sur la rentabilité de la vaccination BCG)

In 1968, the Office of Collective Facilities of the *Directorate of Planning* of the Ministry of Economic Affairs started a one-and-a-half-year research project to investigate the economic efficiency of a BCG vaccination programme against tuberculosis.

This analytical and developmental research was done by the Office's staff, which included B. Vignier and M. Chapalain. Its methodology consists of the development of a net cash flow analysis of costs and benefits of three anti-tuberculosis programmes:

1. General BCG vaccination.
2. RX-preventive.
3. Treatment of cases only.

Results of this PPBS approach have been published (28).

Health protection of schoolchildren (La protection de la santé des enfants d'âge scolaire)

In 1971, the *PPBS and Operations Research Section* of the Office of Research and Planning of the Ministry of Health and Social Security started a one-year research project to develop and prepare alternative decisions for the Minister relating to the health protection of schoolchildren.

The main investigators were all staff members of this section and were directed by M. Chapalain.

The methodology of this analytical and developmental research project consists of:

1. An evaluation of the health care deficiencies of schoolchildren and their impact on the community: morbidity study.
2. An analysis and evaluation of the present preventive care system: legal and administrative aspects, implementation difficulties.
3. The development of alternative courses of action: their costs and anticipated effectiveness.
4. The analysis of the administrative and economic consequences of the single alternative selected.

The alternative selected has not been implemented because of political considerations (72).

ORGANIZATION-ORIENTED HEALTH SERVICES RESEARCH (25)

The hospital organization and its hierarchy (Organisation et hiérarchie hospitalière)

In 1972, the *Social Trends Research Centre* received a one-year research project from the Committee for the Organization of Applied Research into Economic and Social Developments, to investigate from a sociological point of view the characteristics of internal hospital organization and its hierarchy.

The main investigators of this descriptive, analytical, developmental, and theoretical study are A. Touraine and A. Chauvenet. The methodology of this research is primarily a theoretical analysis of internal hospital organization and hierarchy in view of recent trends in hospital medicine.

The medical staff is divided into an autonomous body of super-specialists, a body of staff members dependent upon the first group, for example, anaesthetists, and a body of staff members dependent upon the hospital administration, for example, clinical biologists.

Patients are informally divided in the same way: a group considered as consumers of services who are treated in a semi-industrial way and a group considered as research material.

This differentiation of staff and patients is also reflected in the hierarchy of departments.

This informal hierarchy has resulted in the creation of power groups, the main ones being the superspecialized physicians and the administration, and the nursing staff. Other hospital personnel such as pharmacists, paramedical staff, etc., are subordinated to these power blocks. This research is primarily theoretical. No recommendations for change are developed (11).

Health planning and economic planning (La planification sanitaire intégrée à la planification du développement économique général)

In 1966 G. Destanne de Bernis and the *Laboratory of Work Economics and Work Sociology* received a one-year research grant from the National Centre for Scientific Research to investigate how to link health planning to economic planning in general.

The methodology of this analytical and developmental research consists of:

1. A model which interrelates the different health care programmes and health care services with regard to their role and function.
2. An analysis of the drawing-up of priorities for the public authorities.

This research looks at health planning from a macro-economic point of view and takes little account of driving forces active in the health care field. This research is, primarily, a contribution to the field of developmental economics (21).

Changes in the public hospital and hospital policy (Transformations de l'hôpital public et politique hospitalière)

In 1972 J. Saliba and F. Steudler of the *Social Trends Research Centre* received a one-year research grant from the Committee for

the Organization of Applied Research into Economic and Social Developments to investigate the changes which the public hospital was experiencing at that time and to try to arrive at guidelines for general hospital policy. The methodology of this primarily descriptive and applications-oriented research project is:

1. A detailed single case analysis of the Paris public hospital system upon the assumption that the Paris experience can be extended to the rest of France.
2. An analysis of the changes the Paris public hospital system has been through in recent years.
3. An analysis of the effect of changes in the organization of the Paris public hospital system, of changes in hospital policy, and of changes in social life upon the operations of the Paris public hospital system.

This research is primarily of a descriptive nature based on a sociological point of view. Few guidelines are developed (74).

Technical, economical, and social differences between public and private hospitals (Differentiation technique, économique et sociale de l'hospitalisation publique et privée)

In 1973, the *Laboratory of Economics and Management of Health Organizations* of the University of Paris-IX received a two-year £33,200 research grant from the National Centre for Scientific Research to investigate technical, economical, and social differences between public and private hospitals.

The research staff includes P. Bonamour, M. Liess, G. Dumenil, M. Picard, Herve, Chr. Laffarge, M. Bloch-Lemoine and is directed by E. Levy.

The methodology of this comparative and developmental research consists of:

1. Data collection from a sample of ten pairs of hospitals by: (a) a specially prepared questionnaire and interviews about patients, physicians, and personnel; (b) medical records; and (c) financial and accounting data.
2. The analysis of the data.

The experiment has been started. No results are as yet published.

Introducing change in health care: a proposal of methodology (L'innovation dans le domaine de la santé: Proposition pour une méthode d'analyse)

In 1972, J. Dumoulin of the *Institute of Economic Research and Planning* of the University of Social Sciences of Grenoble received an eight-month research grant from the Committee for the Organization of Applied Research on Economic and Social Developments to investigate the interrelationships between innovations, production, and utilization in the health care system.

The methodology of this analytical and developmental research consists of:

1. The development of an approach by which to determine the role and impact of innovation; innovation results from the work of some individuals or change agents who develop new medical techniques.
2. An analysis of the interrelationship between the health system and the social system (industrialization).

This research which results in a proposal looks at health innovations as a way of social reproduction. Although this analysis was very preliminary, the research was subsequently continued through a research grant from the Ministry of Education. This subsequent research is much more detailed (22).

The hospital system: evolution and structural changes (Le système hospitalier: évolution et transformation)

In 1972, the *Social Trends Research Centre* received a one-year research grant from the Committee for the Organization of Research into Social and Economic Developments to investigate the evolution and changes which could be perceived in the French hospital system.

The main investigator of this analytical and developmental research project is F. Steudler. The methodology consists of:

1. An analysis of the traditional hospital system; its social role, its non-profitmaking character, the influence of local and national government, its marginal role for the physician.
2. An analysis of French medical professional activities: the evolution of medical sciences and social security, and their effect upon the activities of the medical profession.

3. An analysis of the present hospital system and its important trends: the trend towards technological excellence which dominates individual medical activity; the trend towards rationalization which imposes planning upon the hospital system itself as well as between the hospital system and other economic sectors; the trend towards integration which relates the hospital system to other segments of the medical care system. This research is primarily of a theoretical nature (77).

Research into public health indicators and their trends (Recherche d'indicateurs sur l'état de santé de la population et de son évolution).

In 1972, E. Levy of the *Centre for Economics and Social Research* of the University of Paris-X received a one-year research grant from the Office of Research and Planning of the Ministry of Health and Social Security to investigate and implement some health indicators with a view to the refinement of planning objectives. The methodology of this prospective, analytical, and developmental research consists of:

1. The feasibility study of existing, and the development of new, health indicators with a view to the analysis of their trends.
2. An analysis and evaluation of the interrelationship between the health status of the population and other aspects of socio-economic life based upon the indicators developed.
3. An analysis of the functioning of the health care system based upon the indicators developed.

Part of this research was conducted at the University of Paris-X, part of it at the University of Paris-IX (55).

The morbidity of hospital emergency care patients (Morbidity des arrivants en urgence à l'hôpital)

In 1972, Dr M. Guidevaux, of the *Health Services Research Division* of the National Institute of Public Health and Medical Research started a three-year research project to:

1. Estimate on a national scale and by type and severity, hospital emergency care patients.
2. Develop an efficient emergency care information system for medical as well as administrative purposes.
3. Develop a standardized medical record system for hospital admissions.

The project is funded by the Ministry of Health and Social Security at a cost of £14,600.

The research staff includes Dr Radenac, B. Delpit, F. Derrienic, B. Barros, M. Bouvier, and B. Morando.

The methodology of this analytical and application-oriented research consists of:

1. The development of an emergency care information recording scheme.
2. A trial test on 18,000 emergency care patients.
3. The analysis of the data recorded.

No research results are as yet published.

Comparative study of average lengths of stay in public and private hospitals (Etude comparative des durées moyennes de séjour en clinique et à l'hôpital)

In 1970, the public health activities section of the *Health Services Research Division* of the National Institute of Public Health and Medical Research started a one-year research project to investigate the differences in average lengths of stay between public and private hospitals. The project was funded by the Institute itself at a cost of about £3,600.

The project staff was directed by Dr D. Minvielle and included B. Morando and J. Tordeux.

The methodology of this comparative and application-oriented research project consists primarily of statistical analysis of the data recorded from a sample of surgical patients.

The sample itself covered 402 public hospital patients from 8 hospitals and 541 private hospital patients from 14 private hospitals in the same region.

The data were concerned with: length of stay; age; waiting time before first surgical operation; number, type, and nature of surgical operations.

Some conclusions are included in the report, the major one being that any differences in average length of stay could very well be explained by the number and severity of surgical interventions deemed necessary for the patient (65).

Epidemiological and serological research concerning the effectiveness of two anti-influenza vaccines
(Etude épidémiologique et sérologique de l'efficacité de deux vaccins anti-grippe)

In 1974, the *Health Services Research Division* of the National Institute of Public Health and Medical Research received a £2,100 research grant from the Ministry of Health and Social Security to start investigating the effectiveness of two anti-influenza vaccines. The research staff was directed by G. Martin-Bouyer, MD.

The methodology of this comparative research project centres around a comparative analysis of two controlled population groups upon which the two anti-influenza vaccines were tried out with regard to their morbidity patterns.

A serological study on a subsample is also being considered.

No results are as yet published.

Medical referral patterns for socio-economic classes in view of medical care availability (Les filières médicales suivies par les malades et l'offre de soins)

In 1972, the *Social Trends Research Centre* received a two-year research grant from the Committee for the Organization of Applied Research into Economic and Social Developments to investigate the role of medical care institutions in determining medical care utilization patterns of socio-economic classes.

The principal investigator of this descriptive, analytical, and developmental research project is A. Chauvenet. The methodology consists of a qualitative and statistical analysis based upon a field experiment to test the following hypotheses:

1. Distinct socio-economic classes show different referral patterns.
2. The availability of medical care institutions determines these referral patterns.
3. The socio-economic classes are aware of these referral patterns and their medical utilization is geared towards these patterns. The report on this project will be published shortly.

Health care coverage of the population under the different social security programmes (Les modes de protection de la population par les systèmes sociaux en 1970)

In 1970, the *Medical Economy Section* of the Centre for Research and Documentation of Consumption started a three-year research project to look at the health care coverage of different sections of the population under different social security programmes.

The main investigator of this descriptive and developmental research project was B. Guibert. The methodology of this project consists of the statistical analysis of a sample of families followed throughout the year 1970, categorized by socio-economic class and sampled by region (38).

Medical background of physically handicapped persons and its effect on the poverty of the family (Handicap de Santé et Pauperisation)

In 1972, the *Centre for Economic Research and Management* received a two-year £21,400 research grant from the National Centre for Scientific Research to investigate the impact of a physical handicap upon the poverty level of the individual's family. This research was part of a research programme on 'life-styles'.

The research staff was directed by M. Falise and included E. Liefoghe, Reyns, P. Jacob, J. Saily, M. Autes, F. Calcoen, F. Galloo, E. Samyn, and C. Harzo.

The methodology of this descriptive, analytical, and developmental research includes the following steps:

1. The development of an economic as well as a sociological definition of poverty generated by a physical handicap caused by traffic accidents, job accidents, professional diseases, etc.
2. The economic and sociological analysis of 600 physically handicapped families based upon their medical records and other socio-economic variables collected by questionnaire.
3. An in-depth study of a subsample of 60 heads of families in order to develop recommendations about the integration of physically handicapped people into society.

The first and second parts of the study have so far been published and contain an extensive and detailed straightforward statistical analysis (two-way and three-way tables) of the sampled data.

The methodological approach—both sociological and economical—to the operationalization of poverty developed here should be emphasized as well as the appearance of certain relationships between physical handicap and poverty.

The relevance for health services research of this particular study will be shown in the third part, which will be published shortly, through the detailed study of individualized health care procedures in order to rehabilitate as much as possible each type of physically handicapped person identified in the preceding parts (31).

Analysis of a mobile emergency care system (Etude du système mobile de secours et soins d'urgence)

In 1968, the Public Health Activities Section of the *Health Services Research Division* of the National Institute of Public Health and Medical Research started a three-year research project to investigate possible ways to improve the effectiveness of a mobile emergency care system for traffic accidents.

The project was funded by the Institute at a cost of £11,000.

The research staff was directed by Dr D. Minvielle, and included F. Fagnani, Brenot, Courcol, Chassaingne, and Meilleire.

The methodology of this analytical, developmental, and prospective research project is as follows:

1. The development of a systems model to look at traffic accidents and the modes of medical care which they generate. A Markovian-type transition matrix was developed in this respect.
2. The collection of traffic accident and emergency care data on a regional and sampling basis according to measurement scales which were especially developed.
3. The analysis—systems as well as financial—of alternative courses of action including the facilities and personnel which these courses of action imply.

The project results in the development of recommendations for emergency care control which shows enough flexibility and variety to control the environment it is supposed to control.

Though not all problems are as yet solved, especially those of implementation, a methodology to tackle them has nevertheless been successfully developed (62, 63).

Health care problems of migrant workers in an urban area (Problèmes de santé des travailleurs migrants dans une zone urbaine)

In 1973, Dr G. Martin-Bouyer, of the *Communicable Diseases Division* of the National Institute of Public Health and Medical Research started to investigate the health care problems of migrant workers in an urban area. This long-term project is funded by the Delegation for Scientific and Technical Research at the annual rate of £4,500.

The methodology of this analytical and application-oriented research consists of:

1. The socio-economic identification of the migrant workers population group.
2. A survey by questionnaire to estimate the health care problems subjectively perceived by migrant workers.
3. Medical examination of a subsample to estimate objectively the health care problems of migrant workers.
4. A health care utilization survey in existing health care institutions concentrating on migrant workers.
5. An analysis of the data obtained in the previous steps.

No results are as yet available.

Analysis of public health facilities needed in a regional principal town (Etude des équipements collectifs de santé dans une ville siège de région)

In 1973, the Public Health Activities Section of the *Health Services Research Division* of the National Institute of Public Health and Medical Research started a five-year research project to investigate and determine the efficiency of particular public health facilities in a given regional principal town.

The project is funded at the rate of £13,500 a year by the Institute itself and the Delegation for Scientific and Technical Research.

The research staff is directed by Dr D. Minvielle, and includes Dr Maguin, A. Leclerc, C. Ernst, A. Philippe, and J. Bruand.

The methodology of this descriptive and prospective research project follows that developed in an earlier research project: 'A survey of the health problems of a fast-changing urban population' (p. 225).

This project, however, concentrates more on the adaptation pro-

cesses necessary to optimize the available public health facilities in view of public demand, its socio-economic characteristics, and trends in these respects. Results will soon be forthcoming.

Systematic and periodic medical examination: critical and analytical study of proposed available systems (Examens de santé systématiques et périodiques: étude critique et analytique des systèmes utilisables proposés)

In 1972, F. Chicou, of the *Health Services Research Division* of the National Institute of Public Health and Medical Research started a three-year research project to develop an effective systematic and periodic medical examination record. The project is funded at a cost of £11,000 by the Institute and by the Ministry of Health and Social Security. The research staff also includes F. Fagnani and H. Radenac. The methodology of this analytical and developmental research project is so far geared towards the conceptualization of measurement tools with regard to the medical action induced by different situations rather than the different epidemiological situations themselves.

A multifactorial experiment is being developed:

1. To test the validity of these measurement tools on the basis of their predictive power.
2. To formulate a prediction model based upon the measurements obtained.

The project description has been published (15).

The development and implementation of a computerized record system for handicapped persons and their health care needs (Mise au point de la forme et du fonctionnement des fichiers départementaux des handicapés en vue d'une évaluation des besoins)

In 1971, the Statistics Section of the *National School of Public Health* received a four-year research grant from the Ministry of Health and Social Security to develop and implement a computerized record system for handicapped persons in order to improve their care facilities and the planning for these facilities.

The main investigator of this analytical developmental and application-oriented research project was G. Masse.

The methodology is straightforward.

Special attention is paid to the recording and analysis of socio-demographic data and the data about referrals.

The record has been tried out on a regional scale in one of the ninety French departments (60).

The development of an information system for preventive care purposes (Project d'étude d'un système informatique appliqué à un service de prévention)

In 1971, F. Hatton, of the *Epidemiology Division* of the National Institute of Public Health and Medical Research started a two-year research project to develop an integrated information system for preventive care.

The project was funded by the Institute and the National League against tuberculosis. The research staff also included S. Perdrizet, G. Burghard, and R. Petitjean.

The methodology of this analytical and application-oriented research project consists of:

1. The analysis of the existing diffuse information system which relates to the prevalence and incidence of tuberculosis.
2. The development of an integrated effective information system.
3. The development of health indicators and health statistics concerning tuberculosis.

The results of this research have been implemented in the Bas-Rhin region tuberculosis information system (42).

The development of a computerized standardized medical information system for hospital admissions (Prise rapide d'informations standardisées sur les entrants)

In 1972, Dr F. Chicou, of the *Health Services Research Division* of the National Institute of Public Health and Medical Research started a one-year research project to develop an efficient and cost-reducing system to record medical information upon hospital admission.

The project is funded by the Institute and the Paris Community Health Authorities at a cost of £1,800.

The methodology of this analytical and application-oriented research project consists of:

1. The development of a standardized and computerized medical information recording scheme.

2. Trial experiments to evaluate the proposed scheme using a selected group of patients in comparison to a control group which did not use the scheme.

Results so far indicate that the computerized information recording scheme is applicable to 40 per cent of all hospital admissions and is effective in indicating clinical tests required and severity indexes, based upon a computerized comparison with the existing file, for about 64 per cent.

Several shortcomings could already be made good. The system is still being refined in other field experiments (13, 14).

The conceptualization, organization, and management of a computerized vaccination record file (Conception, organisation, et gestion d'un fichier vaccinal par ordinateur)

In 1972, Dr G. Martin-Bouyer of the *Communicable Diseases Division* of the National Institute of Public Health and Medical Research started a one-year research project funded by the Institute to develop, a more efficient and computerized vaccination record file for public health. The project staff included H. Veiga-Pires, G. Pavillon, R. Lew, and S. Mahe. The methodology of this analytical and application-oriented research project was as follows:

1. The analysis of the existing information and its flow.
2. The development of a computerized vaccination record file for public health management based upon the results of (1).
3. The development of health indicators and other relevant information (for example individual vaccination notices) for the management of vaccination programmes.

No implementation is yet reported. The file however has been described (59).

The health care professions: factors relating to their organization and job content (Les métiers de la santé: facteurs explicatifs des structures et contenus d'emploi)

In 1972, the *Institute of Economic Research and Planning* of the University for Social Sciences of Grenoble started a one-year research project to investigate the health professions, their organization, and their job content in view of an increasing shortage. The principal investigators of this one-year research project were J. Blanc and J.

Dumoulin. The methodology of this descriptive, comparative, and developmental research was as follows:

1. The formulation of problems relating to the organization and the job analysis of the health professionals.
2. Organizational analysis. Different indicators are developed on a sample of five hospitals to highlight the differences and peculiarities among these hospitals. The type and intensity of care is shown to be the main factor.
3. Job analysis. Based upon a sample of seventeen hospital departments in those five hospitals a rather crude and qualitative task and job analysis is developed.

Several recommendations are put forward though most relate to the need for further research. An elementary health manpower planning model is nevertheless included (2, 23).

A tentative approach to planning for health professionals (Esquisse d'une planification des personnels de santé)

In 1972, J. Bui-Dang-Ha Doan of the *Centre for Demography and Medical Sociology* started a short-term research project to develop a tentative approach to planning for the health professionals.

The methodology of this basic and analytical research project consists primarily of the identification of some relevant variables which should be taken into account in any planning attempt (6).

The institutionalization of a collective work force (the case of a psychiatric clinic) (L'institutionalisation des collectifs de travail: Monographie sur la Clinique de la Borde à Cour Cheverny)

In 1972, A. Cotlenko, G. Grass, O. Kiel, L. Mozere, and M. T. Vernet-Stragiotti, from the *Centre for the Study, Research, and Development of Organizations* received a one-year research grant from the Committee for the Organization of Applied Research on Economic and Social Developments to investigate the feasibility of an institutional reorganization based upon a teamwork approach rather than upon a division of labour approach.

The methodology of this analytical and applications-oriented research develops and tries to implement an institutional set-up which stresses a team approach rather than a division of labour. This ex-

periment is conducted at the psychiatric clinic of La Borde at Cour Cheverny. No results are yet published.

Medical practice and the hospital system (Pratiques médicales et système hospitalier)

In 1974, J. Ferry-Pierret and S. Karsenty of the *Research Centre for Welfare and Well-Being* published the results of a research endeavour trying to develop a future scenario for hospital development.

The methodology of this analytical and prospective study consists of:

1. A historic analysis of hospital development.
2. The identification of important trends and existing or projected conflict situations.
3. The elucidation of two future scenarios based upon the results of (1) and (2).

One scenario which is called linear, extrapolates from existing trends and identifies anticipated problems. The second scenario, which is called the breakdown scenario, sketches an alternative development. The researchers, however, have great difficulty in identifying the critical conditions which may generate this alternative development.

The research is heavily socio-political in nature and puts great emphasis on the economic and sociological driving forces which direct hospital development (32).

SOCIOLOGY-ORIENTED HEALTH SERVICES RESEARCH (17)

Medicine, illness, and society (Médecine, maladie, et société)

In 1970, C. Herzlich of the *Laboratory of Social Psychology: Health Sociology Group*, was supported by the National Centre for Scientific Research in investigating and publishing in France a sample of US and UK research projects on health related psychology. Though this publication is not the result of a health services research project as such—its value is only documentary—it opened up new perspectives for a still uninvestigated problem area in France (44).

Health and illness: an analysis of a socially based model (Santé et maladie)

In 1965, C. Herzlich of the *Laboratory of Social Psychology*: Health Sociology Group was supported by the National Centre for Scientific Research to start a long-term research project to investigate the ideas, opinions, and personal behaviour which individuals have or demonstrate about health and illness.

The methodology of this analytical, descriptive, developmental, and theoretical research consists of:

1. Eighty semi-directed interviews with white-collar workers and professionals.
2. The analysis of these interviews with a view to the conceptualization of prevalent opinions and attitudes.

The author states that illness is much more a psycho-social phenomenon than an organic malfunction. The individual's behaviour with regard to illness will be determined by his social behaviour (43, 45).

A survey of the health problems of a fast-changing urban population (Enquête sur les problèmes de santé dans une agglomération urbaine en mutation Boulogne-Bilancourt)

In 1968, the Public Health Activities Section of the *Health Services Research Division* of the National Institute of Public Health and Medical Research started a four-year research project, involving £18,000 of its own funds, to investigate in a given, though fast-changing, urban region:

1. The health care problems experienced by the population and their resultant behaviour as related to their socio-economic characteristics.
2. The actual availability of medical care resources and their utilization rates.
3. The relationship between (1) and (2), more specifically the 'supply-demand' inadequacies.

The research staff was directed by Dr D. Minvielle, and included P. Aiach, A. Leclerc, J. Piesset, D. Cebe, J. Chassin du Guerny, J. Ripoche, and J. O. Bouton.

The methodology of this descriptive as well as analytical, basic as well as developmental research project consists of three parts:

1. A demographic analysis based upon census data to classify:
 - (a) The population with regard to its socio-economic variables.
 - (b) Medical care resources.
 - (c) Social aid resources in terms of their size, location, type of service, age, etc.
2. The development of a computer-oriented automatic sample stratification procedure based upon a cluster analysis of the socio-economic data and suitable for any given type of survey.
3. The development and implementation of procedures for the measurement of health problems involving primarily:
 - (a) A family health survey based upon interviews.
 - (b) Medical examination of a subsample of the family members interviewed.
 - (c) The development of indicators to quantify any discrepancies between (a) and (b).

The stratified sample involved about 1,600 families and 400 family members aged 45 and over who were medically examined.

The results of the experiment are statistically analysed and many conclusions are reported in terms of age, type of illness, socio-economic background, type of medical service available, etc. (10, 50, 64).

Sociological study of health care needs (Etude sociologique des besoins de santé)

In 1973, J. Maitre of the *Centre for Sociological Research* received an eighteen-month research grant from the Committee for the Organization of Applied Research into Economic and Social Developments, to investigate the sociological reasons for which the boundaries between illness and health seem to change over time and to differ among sociological groups. Co-researcher is M. Cabane.

The methodology of this analytical and developmental research consists of:

1. A single case experiment—one neighbourhood—in which all medical behaviour and attitudes, individual and collective, are recorded, as well as all available medical facilities.
2. An analysis to highlight the interdependencies between health care problems and social, economic, and cultural life.

3. An analysis of particular topics, for example, work problems at school with a view to the identification of the mechanism by way of which these problems are transferred from their original environment to the health care system in order to be solved.

This research should eventually result in the formulation of strategies and recommendations to redirect medical care demand to care centres more appropriate than medical care centres.

No over-all results however are as yet published (p. 232).

The real world of medical care demand (La demande de soins et son contexte)

In 1972, F. Lautman of the *Centre of French Ethnology* received a one-year research grant from the Committee on Sociology and Demography of the National Centre for Scientific Research to investigate the decisive factors which influence medical care demand. The methodology which this descriptive developmental research proposes consists of:

1. An in-depth sociological analysis of the patient population of a single health care centre.
2. The formulation of hypotheses with respect to the spheres of influence—from a sociological point of view—of this particular health care centre.

Many hypotheses are tentatively formulated and certainly need further checking.

The sociology of decision-making: Changing the medical curriculum and the hospital organization (Sociologie de la décision—la réforme des études médicales et des structures hospitalières)

In 1969, H. Jamous, J. Commaille, and B. Pons-Vignon of the *Centre of Sociological Research on Innovations* published the results of a two-year research effort funded by the Delegation for Scientific and Technical Research.

This analytical and developmental research investigated the decisions which were taken around 1960 to reorganize medical education and hospital organization in a single case experiment. The authors try to identify the socio-historical conditions which provoked these decisions. The methodology of this research consists of:

1. A problem definition based upon Max Weber's sociological theory of political decision-making.
2. The identification of the relevant change agents: full-time hospital practice, the interaction between medical school and university hospital, etc.
3. An analysis of the actual all-encompassing decisions made and their authorization.
4. The development of a theory based upon previous research results. This research is primarily a sociological exercise in decision-making analysis; it is of secondary importance that the area of research is that of health care (48).

Conflict between physicians and the social security agency: an analysis of the physicians' arguments
(Les conflits entre médecins et sécurité sociale, analyse de l'argumentation médicale)

In 1973, the *Laboratory of Social Psychology: Health Sociology* Group was funded by the National Centre for Scientific Research to investigate from a psycho-social point of view the arguments put forward by the physicians during a recent conflict between the physicians and the social security agency. The main investigators are C. Herzlich and M. Weinberger. The methodology of this analytical and developmental research consists of:

1. Collection from a sample of physicians of data relating to their argument in the conflict mentioned, especially relating to the patient-physician relationship.
2. The analysis of the data by use of an automatic interaction detection technique.

No results are as yet published.

A psycho-social analysis of the relationships between hospitals and patients (Psycho-sociologie des relations malade-hôpital)

In 1969, the *Laboratory of Social Psychology: Health Sociology* Group received a two-year £6,200 research grant from the Delegation for Scientific and Technical Research to investigate the hospital as an institution in which the patient's social role is structured in terms of his illness and the institution's own guidelines. The

main investigators were C. Herzlich, J. Borrin, and J. Wesseluis. The methodology of this analytical descriptive, developmental, and theoretical research consists of an analysis of interviews and observations done in two hospital services in Paris. The author states that the transition from a classical medical practice to a modern medical practice based upon specialists generates a conflict between the physician's demand for autonomy and the institutions need to operate by a set of strict rules.

The patient's behaviour tends to be subordinate and submissive in his reaction to this conflict situation.

This research is primarily of a theoretical nature; no recommendations for change are developed (46).

The consumption of drugs: a psycho-socio-economical analysis (La consommation de médicaments: Approche psycho-socio-économique)

In 1970, the *Research Centre for Welfare and Well-being* (CEREBE) received a two-year research grant from the Research and Planning Office of the Ministry of Health and Social Security to study the level of drug consumption at a particular moment in time and to evaluate this consumption on the basis of the role of drugs in the physician-patient relationship. The main investigators of this analytical, descriptive, and developmental research were J. Dupuy, J. Ferry, S. Karsenty, and G. Worms. Its methodology consists primarily of a theoretical analysis based upon previous studies in an effort to formulate the role of medication and the parameters which influence its usage.

The research concentrates on private medical practice. Two types of patients are identified: the ones who are looking for recovery and the ones who are just looking for help.

The first group considers medication as one instrument of medical therapy, the second group looks upon it as a goal in itself. Physicians are characterized as simply trying to keep pace with progress. They consider drugs as just another technical instrument which moreover does not cost them very much personally.

Medication is a mutually accepted compromise for many therapies. With regard to his colleagues, the physician is primarily concerned about which new medication his colleagues have prescribed and how effective this therapy has been. He is under continuous pressure not to behave in an outmoded way. He is afraid of 'psychological ob-

solescence'. This attitude is continuously enhanced by the laboratories which cash in on it.

The authors state that the only two effective ways to hold back the galloping costs of drug consumption are: (1) cutting down on the number of 'new' drugs; (2) developing new and less costly therapies to perform the non-technical functions of medication.

Though the research is quite theoretical, the authors are nevertheless very much concerned with developing and formulating feasible and manageable alternatives. The research results are extensively documented (25, 26).

Structural shifts in the medical profession in France (1963-8) (Variations structurelles de la profession médicale française)

In 1968, J. Bui-Dang-Ha Doan of the *Centre of Demography and Medical Sociology* started a one-year research project to investigate the situation and evolution of the different types of medical practitioners in view of the density of population in their areas of practice.

The methodology of this descriptive research project consists of a detailed analysis of the availability and growth trends of general practitioners, specialists, and hospital physicians in terms of the population density in their practice (7).

Women in private practice: some demographic hypotheses (Les femmes dans la médecine libérale: quelques hypothèses démographiques)

In 1971, J. Bui-Dang-Ha Doan of the *Centre of Demography and Medical Sociology* started a four-month research project to investigate some trends related to the introduction of women in private practice.

Co-researcher was C. Ducasse. The methodology of this descriptive and prospective research consists of:

1. Data collection relating to the age, distribution, retirement rate, death rate, inactivity rate, etc., of the medical profession.
2. An analysis of some data with a view to the determination of significant trends.

The authors state that the introduction of women into the medical profession will enhance the importance of salaried¹ medicine (8).

Medical demography in France and in the German Federal Republic (La démographie médicale en Allemagne Fédérale et en France)

In 1968, J. Bui-Dang-Ha Doan of the *Centre of Demography and Medical Sociology* started a short-term research project together with R. Leutner of the Federal Office of Statistics of the German Federal Republic, to compare available data in France and Germany relating to the density and evolution of medical manpower in both countries.

The methodology of this descriptive research project consists of an analysis of:

1. The over-all situation.
2. The situation and development of private practice.
3. The evolution of the role of hospital physicians.
4. The evolution of the role of women in the medical profession.

Several similarities and dissimilarities could be established (53).

The nursing profession in the hospital (La profession infirmière dans l'institution hospitalière française: première partie).

In 1972, the *Laboratory of Work Economics and Work Sociology* received a one-year grant from the Committee for the Organization of Applied Research into Economic and Social Developments to investigate why hospital nurses are not becoming more aware of their work situation.

The main investigators are A. Degenne and J. Duhart.

The methodology of this analytical and developmental research investigates nursing care needed and actual care received from the point of view of the patient.

The first part of this mainly sociological research project has been made available (20).

The analysis of change in the hospital nurse's profession (L'analyse du changement dans la profession d'infirmière hospitalière)

In 1972, the *Centre for Sociological Research* of the National Centre for Scientific Research received a three-year research grant from the Committee for the Organization of Research into Social and Econ-

omic Developments to investigate the changing working conditions of hospital nurses. Chief investigators of this analytical and developmental research project are J. Duhart and J. Maitre.

The methodology consists of:

1. The analysis of data previously collected relating to the division of labour in the hospital, to identify new patterns in hospital nurses' activities.
2. An analysis with a view to the identification of reasons why nurses do not revolt against existing working conditions although the climate seems more than favourable to encourage such a revolt.

The researchers suspect that an implicit and unformulated understanding between nurses and nursing aides, centred around the patient's needs, brings about this behaviour, but they also suspect that changes in the hospital's institutional hierarchy will be needed in order to allay this latent state of revolt in the future.

No results are as yet published.

Popular concepts and practices relating to health (Représentations et pratiques populaires relatives à la santé)

In 1972, J. Maitre of the *Centre for Sociological Research* received a two-year research grant from the National Centre for Scientific Research as part of its programmed research activities to investigate the public opinions and popular practices relating to health.

The methodology of this analytical and developmental research runs parallel with the methodology of the project *Sociological Study of Health Care Needs* (p. 226).

This project aims to develop the recommendations of the previous project with a view to the planning of health care facilities. No project results are yet published.

Popular practices in hygiene and the prevention of illness (Pratiques populaires d'hygiène et de prévention de la maladie)

In 1973, F. Loux of the *Centre of French Ethnology* received a one-year research grant from the Sociology and Demography Committee of the National Centre for Scientific Research to investigate public education about hygiene and the prevention of illness. The methodology of this descriptive and developmental research consists of:

1. A sociological analysis of changes in people's ideas and conceptions about health and illness.
2. The formulation of different hypotheses for different social classes with a view to a more effective education in hygiene and the prevention of illness.

This work is primarily of a historical nature, looking at what has been done rather than at what should be done (56).

Hospital references in the popular press (Les représentations de l'hôpital à travers la presse populaire)

In 1972, F. Loux of the *Centre of French Ethnology* started a six-month research project to investigate the way in which the most popular newspapers and magazines refer to hospitals. The methodology of this comparative and developmental project is straightforward:

1. A content analysis of thirteen periodicals during a one-year period.
2. A descriptive list of problem areas recognized by the public at large with regard to hospitals and their operations.

Though the results are quite interesting, no recommendations for change have been developed (57).

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FEDERAL GERMAN REPUBLIC

HEALTH SERVICES RESEARCH SPONSORS

Health services research in the Federal German Republic so far has mainly been sponsored by the state agencies, through the state allocations for university research, the employers or employers' organizations, primarily though not exclusively hospitals, and co-ordinating semi-governmental agencies.

The role of independent foundations in health services research is limited. The same holds with respect to industry.

Nevertheless, the role of the Federal Government in sponsoring health services research is developing fast and is increasing. Its total impact, however, is still marginal as this trend has only recently emerged. Fig. 1 develops a diagram of health services research sponsoring agencies in Germany. The type and the objectives of the institutional bodies involved are discussed below.

Governmental agencies

As Germany is a federation of states, a clear distinction has to be made between federal bodies and state bodies.

Federal agencies

Federal Ministry for Youth, Family, and Health Affairs (Bundesministerium für Jugend, Familie, und Gesundheit). The role of the Federal Ministry for Youth, Family, and Health Affairs with respect to health services research is expanding but still minimal from an over-all point of view.

The prospects are that the Federal Ministry will try to co-ordi-

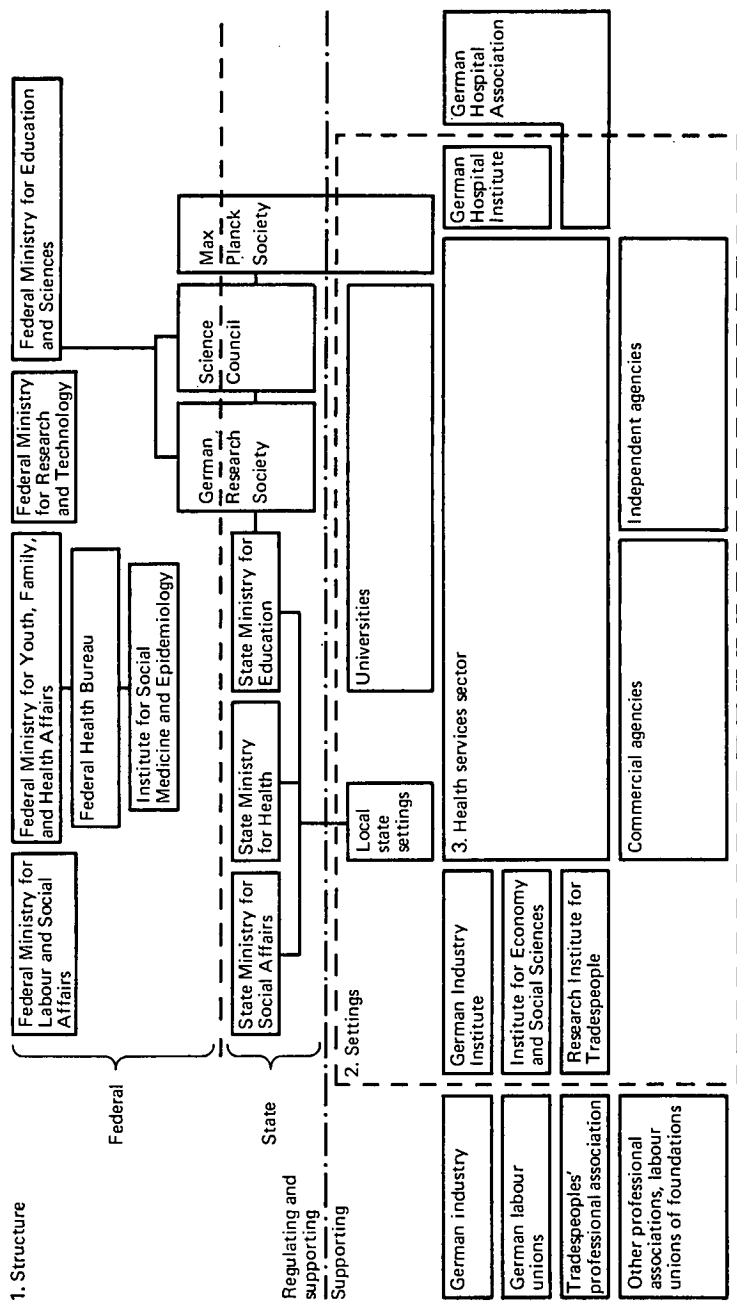


FIG. 1. Health services research in the Federal German Republic.

nate research efforts by sponsoring those studies which it deems particularly necessary for health services management and development in Germany.

In order to formulate this essentially long-term policy, the Federal Minister has commissioned a study from the Research Group on Systems Research of the Ruprecht-Karl University of Heidelberg. In order to follow the formulation of this long-term policy, a special Task Force on Health was set up within the Federal Ministry (pp. 285 and 323). The major difficulty however which faces the Federal Minister is how to underpin this long-term federal policy with the short- and mid-term policies of the eleven states which one should keep in mind are quite independent with respect to health and health services problems.

It is anticipated that the money flow will be the major federal leverage applied in implementing this long term policy.

The Federal Ministry has several agencies and councils operating within its sphere of influence.

Federal Health Bureau (Bundesgesundheitsamt). The Federal Health Bureau represents the administrative branch of the Federal Ministry of Youth, Family, and Health Affairs.

Its influence on health services research is incidental.

Occasionally some research projects are commissioned which pertain to problem areas of special interest to the Bureau's activities. The Bureau's role itself, however, is usually limited to the role of sponsoring agency rather than to the role of actual contractor. The commissioned agency retains indeed a large degree of independence. It is likely, however, that the Bureau's role will expand. Indeed, some additional £33 million have been earmarked to finance this expansion in the immediate year ahead.

The Institute for Social Medicine and Epidemiology (Institut für Socialmedizin und Epidemiologie). This recent (about 1969) institute has primarily a health administration task (morbidity statistics, mortality statistics, epidemics, etc.). However, the Institute is directed by E. Jahn, vice-president of the Federal Health Bureau, who is also associated with the Institute for Economy and Social Sciences of Düsseldorf (p. 294) and co-directed by M. Pinding who is also associated with the Institute for Social Research of the J. W. Goethe University at Frankfurt (p. 282).

It is not easy to draw the line in this situation between 'supporting agency' and 'research setting'.

Indeed an increasingly more important role may be expected for this Institute. So far, the Institute has been involved with the collection of statistics and still as of yet on a sampling basis of limited scope. Eventually, the data bank which will evolve will be used for health services research purposes in the areas of social medicine, epidemiology, and preventive medicine.

Federal Ministry for Labour and Social Affairs (Bundesministerium für Arbeit und Sozialordnung). The Federal Ministry for Labour and Social Affairs has a purely circumstantial role with respect to health services research. Occasionally, some research projects are commissioned out to outside research institutions, which help in formulating the Federal Ministry's policy. Some of this research incidentally involves health services research as it touches on problems related to health care providers, for example physicians and nurses.

Federal Ministry for Education and Sciences (Bundesministerium für Bildung und Wissenschaft). The Federal Ministry for Education and Sciences has undoubtedly the most important role on the federal level in supporting research, which also includes health services research.

1. The Federal Ministry has power in allocating funds among its own federal research institutes (p. 253).
2. The Federal Ministry has also a subtle role in co-ordinating the medium-term financial plans (mittelfristige Finanzplanung: MIFRIFI) which the individual states recalculate each year and which constitute the university's basic source of financing in each state.

One should add however, that this federal influence has so far primarily been felt in diminishing differentials between so-called rich and poor states.

3. The Federal Ministry also intervenes in the financing of the German Research Association (p. 257) and of the Max Planck Society (p. 260).
4. The Federal Ministry is also represented on the Science Council (p. 263) in which capacity it can sponsor research in areas lagging in research activity.

Federal Ministry for Research and Technology (Bundesministerium für Forschung und Technologie). This Federal Ministry, though actively involved with health research of a biological and clinical nature, has so far not been actively involved with health services research beyond its representation on the several councils of, for example, the German Research Association, the Max Planck Society, and the Science Council.

Very recently, however, the Ministry has started a research project on the application of electronic data-processing (EDP) in the health services: the project DOMINIK.

It is expected that the project will cost somewhere between £6,250,000 and £15,625,000 over the next couple of years.

This recent project involves three sub-projects:

1. EDP in private practice, commissioned to the Central Institute of the Association of Health Insurance Physicians (Zentralinstitut der Kassenärztlichen Vereinigung) and the German Hospital Documentation Centre (Deutsche Krankenhausdokumentation).
2. EDP in hospitals, commissioned to the Data Centre of the State of Hessen (Hessische Datenzentrale).
3. EDP in public health, commissioned to the Free University of Berlin.

State agencies

Germany is a federation of eleven states (including Berlin). Each state has a high degree of autonomy with respect to its universities and its health services. This autonomy has resulted in a variety of institutions, settings, and disparities with respect to quality among the eleven states. Health services research, as mentioned before, is heavily financed through the universities. It follows therefore that each state ministry of education has a sponsoring role. The mechanism is explained below.

State Ministry of Education (Different denomination according to the state: Staatsministerium für Bildung, Senat für Bildung, Forschung und Wissenschaft, etc.). The prime mechanism for the sponsoring of health services research is through the universities.

Under the German federal system, the universities come under the states (Länder) from which they draw their whole operational budget.

Up until 1968, the individual professor (*Ordinarius*) counted even more than the university itself, hence financing was not arranged at university level but below. The professor himself negotiated with the local government the terms and conditions of his employment (salary, equipment, number of assistants, etc.).

The university budget was consequently voted by the state legislature and could easily be broken down to the level of the institute or chair.

The universities traditionally submitted to the State Minister proposals for professional appointments. The Minister then went into a long discussion with the candidate about his teaching responsibilities as well as about his institute. This sometimes resulted in a kind of bidding between individual authorities. Once he was appointed, the ordinary professor (*Ordinarius*) received his funds directly from the state government. He was also responsible for recruiting and paying his own staff, especially 'assistant and associate' professors (*Privatdozenten*). On top of this, he was also almost free to select his own successor. The university was thus in essence a collection of micro-universities (chairs and institutes) over which the university had no supervision. This institutional weakness was perpetuated by the system of selecting a new university rector each year from among the ordinary professors. In no instance did any university succeed in obtaining a block vote for its budget in its state legislature, nor does it seem likely that a majority could be found within the university to favour such an arrangement.

This situation has slightly changed since 1968. Although professors are still appointed by the State, they are nevertheless selected by the university and the department concerned after a public announcement of the vacancy. The individual negotiations between potential candidates and State Minister are now confined to salary and no longer include work facilities. The individual Ministers of Education of the eleven states are moreover trying to co-ordinate their salary policies to avoid unnecessary overbidding.

The over-all important *supporting* role of the State Ministries for research in general and health services research is through their own research institutes which some of them have developed and some of which are involved with health services research (see below) or through project work (pp. 309, 311). Another way in which ministries sponsor health services research is through financial contributions to such organizations as the German Research Society and the Max

Planck Society (p. 260). Finally, yet another way is through representation on the management boards of some research organizations.

Other state agencies. There are also other state agencies which differ in style, etc., and may be involved with health services research either as sponsoring agencies or as research settings.

State research settings as such which could be identified are covered in the section on health services research settings in Germany, for example, the Hamburg Economic Institute (city-state of Hamburg) (p. 295).

Other state agencies which have actually sponsored health services research are listed below.

The State Ministry of Social Affairs, Health, and Sports (Ministerium für Soziales, Gesundheit, und Sport) of the State of Rheinland Pfalz. This agency has commissioned a project to develop a hospital plan for its state (p. 314).

The State Council of the State of Hessen. This agency has commissioned a project to investigate the feasibility of a single-class hospital (p. 331).

State Bureau for Research of the State of Nordrhein-Westfalen. This agency has commissioned a study on the remuneration of physicians' fees and hospital costs (p. 311).

Co-ordinating semi-governmental agencies¹

Germany has, as will be shown, three all-important semi-governmental agencies which sponsor and give direction to research including health services research.

Their role is all-important as they operate independently of the federal and state governments. They are national agencies, a point of some importance in a federal state such as Germany as they can override the wealth or poverty of the individual states on which the universities are dependent for their operational budgets.

German Research Society (Deutsche Forschungsgemeinschaft: DFG). The DFG is an independent association which is equally

1. OECD, *The Research System—Comparative Survey of the Organization and Financing of Fundamental Research*, volume 1: *France, Germany, United Kingdom* (Paris: OECD, 1972). Much of the material used in this paragraph is compiled from this work.

financed by the federal government and by the state governments. The DFG is concerned with the whole research sector and its sole function is to provide support for researchers on top of the support provided for by State governments.

The DFG provides assistance in many different forms:

1. It subsidizes individual research projects.
2. It helps postgraduate students.
3. It facilitates the purchase of heavy apparatus.
4. It facilitates the formation of libraries.
5. It supports missions abroad.
6. It supports the publication of scientific works.
7. It also supports several science laboratories and some research units, particularly in the field of medical, biological, and clinical sciences.

Three procedures are developed to provide assistance:

1. A normal procedure (Normalverfahren) where the individual scientist whoever he may be and wherever he may work, takes the initiative.
2. A priority procedure (Schwerpunktprogramm) started in 1952 to enable German science to fill the gap resulting from the Second World war. The DFG itself selects the priority research sectors which in its view merit exceptional assistance whether they belong to the scientific, administrative, or industrial world.

Such projects last on the average for about four to six years though the DFG is the sole authority to decide that projected goals have been attained. From 1963 onwards, however, the DFG claims to take account of all the concerns of the State and of business circles in determining these priority sectors. As a general rule while the normal procedure is mainly of assistance to the human sciences, the priority procedure is chiefly concerned with the natural sciences.

3. The third procedure with which the DFG is involved, deals with the special research sectors (Sonderforschungsbereiche: SFB) specified by the Science Council (p. 263). In this case as will be shown, the DFG as such has no decision-making power but only executes, and thus sponsors, the decision taken by the Science Council.

The DFG has two types of bodies:

1. The Senate (Senat) consists of 33 scientific members of which

30 are elected for four years, by the General Assembly of the Society, plus the Chairman of the Max Planck Society (p. 260), the Conference of (German University) Rectors, and the Working Group of German Academies. The Senate meets three times a year and its essential role is to orient, advise, and define the society's policy. It also advises the administrative bodies on scientific matters and protects the interest of German research abroad. It currently has twenty-three commissions which deal with subjects rather than with disciplines. One of its committees deals with the special research sectors (SFB) of the Science Council, on which the Senate is in close collaboration with this same Council.

2. The Central Committee (Hauptausschuss) has 15 scientists from the Senate, a maximum of 12 representatives from the Federal Government and State authorities and 2 representatives of the Donor's Association for German Science.

All are appointed by the Federal administration and the eleven states. The Central Committee is responsible for the financial support of research, draws up the DFG budget and makes allocations to its sections.

There are currently 26 of these sections which are further subdivided into 150 specialized committees (Fachausschüsse) whose members give an opinion on applications and offer research grants. In 1970, 338 experts (336 of them professors and PhDs) were members of these sections.

These members are elected for a single term of three years by the whole body of recognized research workers both within and outside the university (some 30,000 people).

The specialized subcommittees, hence the Central Committee deal with disciplines rather than with subjects. One of these subcommittees for instance, is the Subcommittee on Medical Epidemiology and Social Medicine (p. 342).

In the normal grant procedure each specialized committee is divided into a number of sections which each have two to four members who together with the chairman must give an opinion on the applications within their competence.

In 1969, for instance, the 338 experts (Gutachter) examined more than 5,300 applications of which 4,600 were approved to the amount of £15 million.

Beneficiaries of grants must submit an annual report which is re-

examined by the same experts. Choices are nearly always the outcome of concordant individual decisions and are taken rather quickly.

The organization of the DFG into specialized subcommittees along disciplinary lines tends to confirm and continue well-trodden patterns. Their work is without influence on university structures and the orientation of research. For instance, the DFG has not managed to challenge the dominant position of the ordinary professor or to go beyond the stage of the individual and individualistic grant.

These same trends are characteristic for much of the university-based health services research: small and unco-ordinated health services research projects, located in small individual institutes without much long-term commitment.

The special research sectors (SFB) are an essential means of reforming this classical university research (p. 263) and to overcome the limitations of the DFG. No wonder, the DFG has been particularly opposed to these SFB.

Max Planck Society (Max Planck Gesellschaft: MPG). The Kaiser Wilhelm Society, now the Max Planck Society was founded in 1911. The Society is a non-profit institution under private law which groups many non-university research institutes in Germany.

These institutes are not only financially supported by the Society but are inherently part of it. The institutes themselves are actually rather like research units, each one of them with one or more institute directors, with researchers and assistants of different disciplines.

Up until 1965, 81 institutes had been founded (which takes two to three years), 31 of them had been wound up or had been transferred to the university. In the period 1965-71 four new institutes were founded. At this moment in time, the 51 institutes of the Society count about 160 institute directors, 200 researchers, and 1,800 assistants.

The average career pattern may be illustrated by the young graduate who starts at one of the Society's institutes.

After finishing his dissertation, he goes back to the university to make a career in higher education. A few years later, however, he may again join the Society to direct or codirect an institute where he stays on for the remaining part of his career, while he may or may not keep his teaching appointment with the university.

The MPG, like the DFG, is partly financed by the states and partly

by the Federal Government from the budget of the Federal Ministry of Education and Science.

The Society includes 200 scientific members, a few of whom are foreigners, out of some 1,900 research workers (plus about 650 foreign and 1,500 German fellowship holders grouped in the Max Planck Society).

These 200 members (including the directors of the institutes) constitute the Scientific Council, which is divided into three sections: biology and medicine; chemistry, physics, and technology; and the humanities which advises the Senate and the Management on scientific matters. This Council meets in General Assembly with about 1,150 supporting and scientific members of the Association to elect the Senate of the Society for a six-year term.

The Senate has 43 members and is composed of scientists as well as eminent individuals from State and Federal Government, industry and commerce. The scientist members of this Senate have been appointed exclusively from among members of the institutes and professors over the last five years. The Senate draws up the organization's budget, makes decisions concerning the establishment of the institutes and appoints directors and scientific members.

The committees (scientific members' committees, Council sub-committees, etc.) deal solely with research in the Society's institutes. As such the Society operates completely independently of the DFG or any other agency.

The composition of the committees indicate the academic style of approach, which inherently brings about a shade of ivory tower mentality. Indeed, the Society has been reproached in the past for not having filled the gaps in important sectors.

Conscious of the potential risk of a policy based upon institutes directed by eminent professors with an established reputation, the directors of the institutes have for some time past expressed the intention of laying stress on interdisciplinary projects.

When an institute director dies or retires, it is always the institute's existence which will be questioned. Relations between German companies and the institutes, though always good, have been strengthening over the past few years. This phenomenon arises from a certain shift of interest from the university to the independent peripheral research system. The present difficulties of the universities are also leading scientists to seek attachment to an institute independent of the university.

Opinions of a specific character are addressed to those concerned and not published; those of a general character, addressed to the Federal Government, the States, or the universities are published.

The membership and rules of procedure of the Council indicate that every decision must receive wide support, particularly from the official representatives. This no doubt slows down discussion; but, on the other hand, it facilitates the implementation of the suggestions made through the medium of the Federal and State representatives. The Council can influence the decisions of the special committee responsible for allocating the funds required by the DFG and the MPG. Decisions are more delicate when only the States are concerned, since local legislatures may oppose their implementation. The decisions of the national bodies as to the allocation of resources are nevertheless always affected by the opinion of the Council.

The Council's over-all policy is to create centres of gravity and to renew and rationalize scientific activity with a view to improving its organization. It thus opposes an excessive concentration of research projects in the Max Planck Society to the detriment of the universities; it also tries to offset the lack of co-operation among the universities themselves which fall within the German Research Society's sphere of influence. In fact, in 1962 the Science Council recommended the development and creation of centres of gravity in the German universities. This proposal in conflict with long tradition and essentially a means to reform university research, met with little response although the German Research Society (DFG) subsequently adapted a more active policy to support underdeveloped research sectors (p. 257). Further appeals however led the Council to the initiation in 1968 of the first special research sectors (SFB) as instruments which could stimulate a concentration of efforts in fields traditionally supported by the German Research Society. It was small wonder the same society was initially particularly opposed to these special research sectors.

Nevertheless, the SFBs have grown in importance since: in 1972 a network of 148 high-quality interdisciplinary centres had already been funded compared to only 77 in 1970.

The funds involved are always administered by the German Research Society (p. 257).

The basic allocation covers staff, equipment, buildings, etc., and is provided by the State through the university's operational budget. The special allocations (funds in excess of the basic allocation) are

allotted by the German Research Society directly. These special funds only amounted to £203,125 in 1968. By 1970, they stood at £10 million and the estimate for 1975 amounts to some £55 million.

The role of the Max Planck Society is all-important with respect to medical research in Germany and is still increasing. About half of the institutes are involved with medical research and its basic sciences such as biology, biochemistry, etc. This research, however, is primarily of a biological and clinical nature. The interest in psychiatry, chronic diseases, environmental illnesses, and the social aspects of illnesses which has recently been expressed (p. 269) may eventually shift some attention to health services research.

Science Council—Special Research Sectors (Wissenschaftsrat—Sonderforschungsbereiche: SFB). The Science Council was created in 1957 and has great independence. It has not only consultative functions but executive responsibilities as well. This national council is a quite original institution both inside the German system and compared to other countries. It exerts a very strong influence on the country's scientific life, as will be shown, for it is responsible for advising the national authorities on scientific affairs and on the organization of higher education. In order to cope with this twofold responsibility, it consists of:

1. A Scientific Commission, consisting of sixteen academics and six distinguished national figures (industrialists, bankers, trade unionists) appointed in their personal capacity;
2. An Administrative Commission consisting of ten Ministers of Education and one Minister of Finance from the States and six Under-Secretaries of State from the Federal Government.

Each of these Commissions has 22 votes. Together they form the Science Council which takes its decisions by a two-thirds majority. This stipulation means that there must be a certain agreement in each of the Commissions, though it need not necessarily be total.

Specialized committees are so far set up under the chairmanship of a member of the Council, for special studies. A small secretariat, amounting to 26 in 1970, deals with the proceedings of the Council.

About two-thirds of all money involved comes from the Federal Government and about one-third from the State Governments.

The SFBs are chiefly distinguished by their institutional nature and their longevity. This institutional status is harder to achieve in

the humanities than in science or technology. The Science Council therefore proposed that the DFG should henceforth aim at the more vigorous promotion of research in the humanities and human sciences under its normal and priority programmes (p. 258).

Proposals for SFB may come through various channels, which are fairly precisely defined, thus reflecting the need to reconcile the interests of the Federal Government, the States, and the universities.

In general, a team of university researchers submit a collective project. In such cases, the proposal is first considered by the governing body of the university, usually the Senate, before being submitted for comment to the State Ministry of Education.

The proposal is then forwarded to the Science Council which transmits it to the DFG for examination and evaluation in the light of criteria laid down by the Council.

The final decision, however, rests with the Council, with the restriction that:

1. It cannot overrule an adverse decision of the State Ministry of Education involved.
2. It cannot overrule an adverse decision by the German Research Society.

Proposals may also be presented by the Federal Government, the States, the Max Planck Society, or the DFG. They are then submitted to the Science Council, with particulars of the object of the research and, if possible, the university and team to which the work could be assigned. After examination by the Council, the views of the DFG, the competent Ministry of Education, and the proposed university are invited. If all parties are interested in the project, an official proposal is called for and passes through the normal channels.

In 1970-1 for instance, the Council examined 2,300 proposals and adopted 1,400 of them.

Only approved special fields of research, as listed by the Science Council can apply for grants from the special fund created by the Federal Government and by the States.

Indeed, the Council is required to draw up, publish, and revise at regular intervals this list of research fields. Up to 1972, 170 of these lists had already appeared.

New sectors are included in the list in response to requests from the universities stating the grounds which are then referred to the Ministry of Education. The application must specify the content and

limits of the sector selected, in particular the proposed subjects of research, the research institutions and experts participating, the resources available, and the grant which appears necessary.

The German Research Society (DFG) decides if a proposal fits the list of special research sectors.

For the purpose of this list, as well as for other purposes, the Science Council has access to privileged information of the Federal Administration, it is kept informed by the representatives of the Federal Government who take part in its work and it can tender unsolicited advice to the Ministers of Education and Science.

Clearly, the Council is a body for selective action and not for permanent supervision: for instance, the length of time for which support will be extended to these special research sectors (SFB) still remains to be specified.

As has been indicated, the role of the SFB has been expanded enormously in the last couple of years. Although its impact on health services research has not been felt yet, its potential is enormous. Three special research sectors should be indicated:

1. SFB no. 63 involves a yearly grant of £410,000 to Professor Linde of the University of Stuttgart to investigate University Construction. Part of this research effort deals with the construction of university teaching hospitals.
2. SFB no. 159 has been granted to Professor Poelzig of the Institute for Hospital Building (Institut für Krankenhausbau), at the Free University of Berlin.
3. A third SFB grant is now on the drawing board, which as has been indicated could take several years, which would be given to S. Eichorn and P. Schwertz of the University of Dusseldorf, and of the German Hospital Institute. This SFG would involve twenty projects and fourteen different project directors. All these projects would deal with hospital and hospital management problems.

Foundations, professional organizations, and labour unions

Different professional associations and labour unions of particular categories of personnel have supported one or two occasional health services research projects.

German Hospital Association (Deutsches Krankenhausgesellschaft). This single most important foundation has a long and im-

portant history of support for health services research through its financing of the German Hospital Institute (p. 290).

As the Association is also directly involved with health services research, it is discussed elsewhere (p. 289).

Institute for Documentation and Information on Social Medicine and Public Health. This Institute, directed by O. Nacke, is clearly a supporting agency and is not involved in health services research as such.

The support it provides is of an intangible nature and does not involve any money. It tries to keep an up-to-date list and description of current health research projects in Germany, including health services research projects, with a view to general publication.

The Institute itself is almost totally supported by (other supporting) governmental agencies, Federal and State ministries, and the German Research Society.

Hartmann-Union (Hartmannbund). The Hartmann-Union, currently directed by H. Bourmer, is the 'labour' union of German physicians. The Union is solely involved with the lobbying for the physicians' interests.

As such, it has had an all-important influence and impact on the development of the German social security system.

The Union itself has of yet not been involved with any health services research.

Federation of German Associations of General Practitioners (Bundesverband des Verbandes der niedergelassene Ärzte Deutschlands). This Federation groups the professional state organizations of physicians on the Federal level. As a professional association its main activity deals with the organization of seminars, meetings, etc.

It has, however, a small health services research supporting function though not at all as developed as for instance its Dutch counterpart (p. 320).

German Library Association (Deutsches Bibliotheks Verband). This federal association of state professional library associations has supported one health services research project (p. 343).

Research Institute for Tradespeople (Institut für Mittelstands-

forschung). The sociology department of this research institute of the professional association for tradespeople has supported two health services research projects (pp. 350 and 351).

Association of Hospital Administrators (Fachvereinigung der Verwaltungsleiter Deutscher Krankenanstalten). Two projects have been supported by this union of hospital directors (pp. 341 and 346).

Association of Hospital Medical Directors (Verband der leitenden Krankenhausärzte—Chefartzverband). One project has been supported by this professional Association of Hospital Medical Directors (p. 341).

The Opticians' Society of Munchen. This professional society has supported one research project (p. 329).

German Union of Hospital Personnel (Verwaltungsleiter Deutscher Krankenanstalten). The research foundation (Studienstiftung) of the German Union of Hospital Personnel has supported one health services research project (p. 353).

German Federation of Labour Unions (Deutsches Gewerkschaftsbund). The German Federation of Labour Unions supports health services research indirectly through the support it provides to its Research Institute for Economy and Social Sciences (p. 294).

Central Organization of Labour Unions/South-German Union of Woodworkers (Hauptverband der Gewerblichen Berufsgenossenschaften/Süddeutschen Holz-Berufsgenossenschaft). This local craft union has supported one health services research project (p. 330).

Industry

There are several industry-sponsored foundations in Germany which indirectly support research, health research, and health services research, through the mechanism of the semi-governmental agencies mentioned above.

Donor's Association for German Science (Stifterverband für die Deutsche Wissenschaft). The Donor's Association for German

Science is an independent foundation which has two votes in the Central Committee of the German Research Society and in this way supports university research, including health services research.

The foundation groups other organizations or the research interest of these other organizations, industrial as well as non-industrial.

Donor's Association of the German Industry (Stifterverband der Deutschen Industrie). This organization of German foundations set up by industry acts as an intermediary between industry and university.

It supports university research on industry's behalf but does not attach any strings to its help and does not bring the two together.

Its influence is indirect and of a non-controversial nature; hence, although it covers a minute part of university research, it is very much appreciated.

Organization of German Industrial Research Centres (Arbeitsgemeinschaft Industrieller Forschungsvereinigungen). This organization groups the industrial research centres directly. Its influence on or support for health services research is very much indirect.

Industrial foundations such as Volkswagen Foundation, Krupp Foundation, IBM-Data Processing, Boch Foundation. These foundations though less wealthy than their American counterparts, have essentially the same role.

In distributing money for fundamental research, they do not take industrial needs into account. However, industry knows from past experience that it acts in its own long-term interest by helping to preserve a high standard of university teaching. The impact of these foundations on health services research is so far rather limited. Two exceptions, however, are:

1. IBM-Data Processing has supported several health services research management information systems projects in Germany, for example, with the Christian Administrative Centre for Computing (Kirchliche Gemeinschaftsstelle für Datenverarbeitung).
2. Hoechst Inc., which pays £95,000 a year to Excerpta Medica Inc. to compile all hospital data and which allows the German Hospital Institute to use the same data bank.

German Industry Institute (Deutsches Industrie Institut). Though the Institute is no foundation as such, it is nevertheless supported by industry and is itself directly supporting health services research in its own research setting. The Institute is discussed elsewhere (p. 294).

HEALTH SERVICES RESEARCH STRATEGIES

With the exception of the German Hospital Institute, health services research efforts were scattered and diluted until about 1968 in an unco-ordinated way over some 45 institutes and chairs in about half of the 30 German universities. Since the latter years of the 1960s, however, a deliberate effort has been started to streamline and co-ordinate health services research in larger and co-ordinated research projects which may involve different research institutes, even in different universities.

The approach to this strategy is interesting.

1. Two basic characteristics of the German system are its federal structure and the commonly accepted principle of a self-regulating and autonomous scientific community. In fact, the traditional German professor was a little entrepreneur. He was directly paid by the State Government, usually without interference from the university. He was involved in teaching as well as in research for which purpose he had self-initiated his own institute. This institute was run by the professor himself: he employed assistants, he accepted or refused students at will, he established relations with other institutes if he wished to do so. This dispersion of many, small, and local research institutes where each individual retained a very large measure of independence, was supported by the stipulation of the German constitution which explicitly assigns the responsibility for education, and concurrent research, to each individual State. This system is still prevalent in Germany but things have begun to change.

2. In 1962, the Science Council (p. 263) started to stress the need

(a) To foster particular research areas which had been lagging.

(b) To develop and create centres of gravity within the German research community.

This policy by the Science Council has slowly but surely in-

fluenced German research (hence, health services research) strategy. A first tangible result was the reorientation of the priority procedure of the German Research Society (p. 257) towards the underdeveloped research fields.

A second tangible result of major impact has been the creation in 1968 of the first special research sectors (SFB) (p. 263). Both programmes have started to earmark money beyond the basic operational expenditures, whatever this may be, into co-ordinated and spearhead or mission-oriented research efforts which were geared towards research areas rather than toward research disciplines.

Although one could and still can observe a certain reluctance on the part of the traditional German research community—which has always shown a preference for a spontaneous mechanism to foster economic freedom and the development of research without government intervention—against this inducement into specific areas, one also has to agree that this trend which has been put in motion, will continue and further develop to be the driving force in any research policy.

The impact of these special research sectors upon health services research is still marginal but this is solely due to the relative youth of these special research sectors.

Indeed, the evolution of the financial means involved (p. 263) demonstrates this sufficiently. Undoubtedly, these special research sectors or the mission-oriented research strategy will thoroughly influence health services research in the near future. Several plans are already on the drawing-board.

3. Another trend is emerging which runs parallel to the development of these special research sectors and which though less often exposed, will certainly be equally important to health services research developments.

Indeed, the traditional structure of Germany during the two decades following the Second World War and the traditional structure of the German university research community since its origin has always lacked a central high-level administrative agency; the Max Planck Society (p. 260), founded in 1911 by the emperor of the time to provide for this type of centrally organized high-level authority has only been a powerful surrogate which operates on the outskirts of the university community. At the same time the German Research Society with its primarily administrative and

financing role has always fostered the independence of the German university community.

Now, the creation of the special research sectors along the proposals of the Science Council have highlighted the need for a central high-level administrative agency. The only agency which could perform this function was the Federal Government and it has done so. As a result the research responsibilities of the German Federal Government have rapidly expanded over the last decades, and this in spite of a certain reluctance of the traditional partners involved with research policy and strategy.

The process by which the Federal Government has acquired an increasingly more important role in determining research policy and strategy manifests itself in two ways:

1. First, the Federal Government has developed its impact upon the organization and the administration of research policy and strategy through:

(a) Representation on the governing boards of the German Research Society (p. 257).

(b) Representation on the governing boards of the Science Council (p. 263).

(c) Representation on the agencies involved with the planning of national, including higher, education.

Indeed, it is only very recently, since 12 May 1969, following an amendment to the German constitution that the Federal Government has any influence and can start to plan for national education in a co-operative effort with the States (MIFRIFI, p. 254).

2. Secondly, the Federal Government has fostered its impact upon the development of national research policy and strategy through its financing capabilities.

The money flow into research administered by Federal Government has gained strongly, absolutely, and relatively to the money flow from the States.

This is best illustrated by the special research sectors money flow.

These three characteristics (the decreasing role of the diffused university research system, earmarked money in special research areas, the ascending role of Federal Government), of recent German research policy are particularly manifest in areas such as health research and health services research which have always been within the sphere of influence of the public authorities.

1. It will indeed become apparent by the survey of actual health services research projects in Germany that many of these were side-activities of existing sociological and/or economic institutes within the university system of research and that only a minority of them could be associated with centres which solely devote their activities to the health services research area.

2. The increasingly more important role of the Federal Government in organizing research should also be enhanced by, for example, the recent foundation (in 1969) of the Institute for Social Medicine and Epidemiology within the Federal Health Bureau and the important financial injections which this last bureau has recently received.

3. The increasing financial strength of the Federal Government has had its effect on the health services research area. This is illustrated by the several special research sectors being started or still on the drawing-board. Again, several health services research projects of recent date were commissioned by the Federal ministries.

With the assumption of this important role by the Federal Government, it is quite interesting to note what particular topics the Federal Government has in mind with respect to health research and health services research. There are two indicators.

The first deals with the results of the study on *Problems and Critical Areas for Reform of the German Health Care System* (p. 323) commissioned and financed by the Federal Minister of Youth, Family, and Health. This project established a tentative priority list based upon the opinion of some sixty-two experts in the field. Research areas which received highest priority were: geriatrics, rehabilitation, and psychological aspects of illnesses. Other important areas mentioned are environmental diseases, chronic diseases, psychiatry, perinatal care, social aspects of illnesses, the impact of illness on professional life, and prevention. Research on institutions and institutional organization, medical statistics, and information statistics received distinctly lower priority. Still lower on the scale were, for instance, pharmacology, biology, biochemistry, and genetics. The areas of highest priority mentioned all have important organizational and managerial aspects.

The second indication of the Federal Ministry's interest in particular health services research topics is given in the information sheets published by the Ministry. Five topics were identified:

1. Problems dealing with hospital bed capacity (planning, programming, construction problems, investment problems).
2. Problems on nursing and the nursing professions, especially how to deal with the shortage problem.
3. New ways to induce co-operation among physicians.
4. The development of census data with a view to health care planning including personnel planning.
5. The development of criteria to allocate public funds among health care programmes.

Further research along these particular lines can be expected.

HEALTH SERVICES RESEARCH EXPENDITURE

It should be stressed from the start that it is impossible to arrive at an exact figure of health services research or even health services expenditures in Germany. The best which can be hoped for is an estimate. There are several reasons for this:

1. The lack of any centrally placed administrative agency in Germany prohibits the compilation of nationwide statistics. Indeed, the traditional prerogatives of the States have created different financial accounting schemes from State to State. There is also a certain reluctance on the part of the States to open up their books to the Federal Government: also education as well as public health has always been subject to the decision-making power of the local States. It is interesting, however frustrating it may be for our purposes, to note that even the German national accounts do not give a breakdown of health care expenditures in, for instance, drugs and other medical products, hospital care, and physician fees, whereas those of any other EEC country covered in this survey could provide this particular breakdown.
2. The lack of comprehensive university accounts also prohibits a study of the finances of the individual departments, as the professor used to deal directly with the State Minister of Education about his salary, financial means for his institute, etc. At one time there was even something like a market for university professors in which the States would bid against each other to attract particular professors.

One can understand the secrecy in which this market operated.

3. The same mechanism has also resulted in a particular type of bookkeeping: it is customary to look at a university professor's financial means in two separate accounts. The first account covers basic or operational expenditures; whatever may be understood by this. These operational expenditures usually cover buildings, maintenance, the professor's salary, some secretarial salaries, etc., though this may be different from professor to professor. The second account covers additional expenditures and here again it is not always clear what may be meant by this. Usually these expenditures cover expenses which can be directly linked to the particular project involved, for example, the salary of some temporary assistants, equipment, computer costs for data compilation, publication money, etc. The problem arises because of the fact that the State agencies have always and still, even under the new financing mechanisms, have jealously kept the first account within their administrative responsibilities while the second account was dealt with by such agencies as the German Research Society or the contracting party.

4. Again, as will be shown below, many health services research projects, because of the myriad of institutes associated with individual professors in their lifetime, are circumstantial or marginal efforts by professors whose main activity was in sociology, economics, and management sciences. There is just no way in which basic or operational costs can be broken down among health services research activities and other research activities, as long as a complete survey of all research activities is not available.

On the other hand, if one cannot arrive at exact figures, the money flow patterns are clearcut. Fig. 2 shows these major money flow patterns.

Five important financial sources can be identified:

1. Basic, operational, finances of the universities are provided for by the eleven State governments.
2. Additional or supplementary university financing comes from the German Research Society and the special programme of special research sectors.
3. The Federal Government provides for additional research money through contract work or through its own institutes.

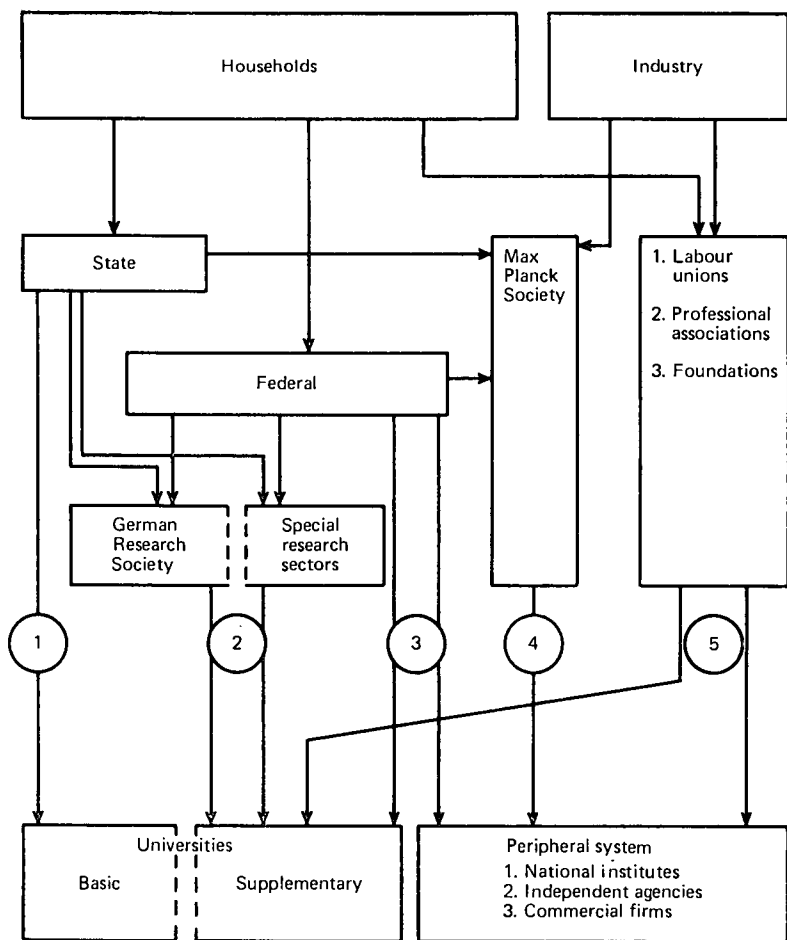


FIG. 2. Money flow patterns for health services research in Germany.

4. The Max Planck Society is a fourth source for additional financing.

5. The many labour unions, professional organizations, employers' associations, and industrial foundations constitute the fifth major financing source.

As has been indicated, an exact figure of expenditures on health services research is impossible: even health care expenditures in Germany are not exactly known and are based upon estimates.

However, an estimate will be made, based upon data and ratios for the years 1968 and 1970.

1. The GNP in 1968 stood at £84·375 million, in 1970 at £107,031 million.¹

2. Health-related costs were estimated in 1968 at £7,578 million² or 8·9 per cent of the GNP. However, this estimate:

(a) Excluded industrial production loss because of sickness which was estimated at £3,125 million and would increase health-related costs to 12·6 per cent of the GNP.

(b) Included on the other hand are costs of sickness consequences such as early invalidity pensions, sickness pay, wage compensation, etc., which are not health care costs in the narrow sense but which are health care related costs. These were estimated at £2,453 million. If these were excluded, one arrives at a health care expenditure estimate of £5,125 million or 6·1 per cent of the GNP.

3. Of these health care costs in 1968 about £391 million was spent on education and research related to health and health care. This would amount to some 7·6 per cent of all health care costs in the narrow sense.

4. Another way to check these estimates is by way of total expenditures on education, research, and development:

(a) Expenditures on education (1970).³

(i) Public expenditure: £5,218 million

(ii) Private expenditure: £602 million

(estimated at 14 per cent of
public expenditure)

Total

£5,820 million

or 5·4 per cent of the GNP

(b) Expenditure on research and development (1970).³

(i) Public expenditure: £945 million

(ii) Private expenditure: £1,078 million

Total

£2,023 million

or 1·9 per cent of the GNP

1. EEC statistics.

2. Professor Dr Szameitat, 'Was kostet die Gesundheit?' in *Baden-Württemberg in Wort und Zahl*, no. 5/1970 referred to by the Federal Minister for Youth, Family, and Health.

3. UN statistics.

Note. In 1967 this percentage was 1.7 per cent, the 1974 estimate is 2.0 per cent.¹

Based upon these and previous statistics, one finds that 10.8 per cent of all public expenditures on education, research, and development is spent on education, research, and development in the health and health care area. This estimate corresponds to the estimate of 11 per cent made by the Federal Ministry of Education and Research.²

5. How much of these expenditures on health education and research go to research? Some estimates are available:

(a) Intramural research and development expenditure on medical research, 1963:³ £13,046,875.

(b) Health-related expenditure in research institutes (all public money) 1968:⁴ £15,625,000.

(c) Public expenditure on health research and development, 1970:² £123,437,500.

The apparent discrepancies can be explained as the third estimate includes universities and/or university institutes while the previous estimates do not.

Based upon this last estimate one finds that about 2.1 per cent of all health expenditures is spent on health research in Germany, in 1970.

Private expenditure on health research has not been included in these figures due to lack of data, though one can guess that these must be marginal with the exception of drugs and equipment.

6. A breakdown by financing source is as follows:

	1963 (£000)	1970 (£000)
Universities	?	96,000
German Research Society	2,531	4,660
Max Planck Society	5,406	6,250
Special research sectors	—	2,500
Federal ministries	2,031	9,370
State ministries	2,594	4,660
Other (private)	484	—
Total	13,046	123,440

1. OECD statistics.

2. Research communication of the Federal Minister of Education and Research—Forschungsbericht der Bundesminister für Bildung und Wissenschaft (April 1972).

3. Remarks of the Science Council with respect to the development of scientific institutions—*Empfehlungen des Wissenschaftsrates zum Ausbau der Wissenschaftlichen Einrichtungen*, vol. iii (1965).

4. See n. 2.

7. An estimate of the amount of health research expenditure spent on health services research is officially not available. In view of the information made available in this report, a rough estimate would be anywhere between 1 and 3 per cent or between £1,234,000 and £3,702,000.

HEALTH SERVICES RESEARCH SETTINGS

INTRODUCTORY REMARKS

Although health services research already had some tradition in Germany, it has only received its major impetus in recent years. Most settings started operations in the last decade and only a few can trace back to the immediate post Second World War years. These newer settings involve either universities or university departments which became interested in health services research or commercial agencies which were requested to help solve the health services' problems. The first category of settings still lacks sufficient professional manpower to be powerfully effective: indeed in many cases, these university settings rely solely upon one, two, or three full-time professionals. The second category of settings called in to work out immediate solutions for immediate problems does not guarantee sufficient interest to further develop the health services research field. Another characteristic of the university settings besides their limited professional staff is their regional dispersion. This regional dispersion is by the federal structure of Germany where each of the eleven States sponsors only its own universities.

For these three reasons, limited staff and regional dispersion enhanced by a federated structure, the exchange of ideas, concepts, methods, or techniques on health services research is still quite limited and even minimal among the German university-based health services research settings. The same also holds, although to a lesser extent, for the other types of health services research settings.

This lack of co-ordination or non-co-operation brings about two characteristics of the health services research projects in general:

1. The range in the quality of the research endeavours produced is great. There are small-scale research settings able to produce

methodologically sound and technically very elaborate research products, but at the same time here are settings where the research is not of high quality.

2. In view of the topics addressed, health services research is not very balanced in Germany. Topics such as, for example, medical care reimbursement and physician payment, analysis of problems related to the nurses' shortage, are addressed by many research settings individually and separately from each other; yet such important topics as primary care, ambulatory care, or geriatric care have had hardly any attention.

Though the acuteness of the health services problems certainly determines topics to be investigated, the short history and uncoordinated growth of most of the research settings are undeniably contrasting factors in the apparent faults.

In the non-university-based research settings, there is a conspicuous lack of research interest on the part of the physicians, or physician associations, in both directly self-initiated research endeavours as well as indirectly commissioned research projects.

On the other hand, the labour unions and employee organizations have been rather active in the field of health services research. Interesting in this respect are the different research endeavours dealing with the problems of the shortage of nurses.

In 1966, the Research Foundation of the German Union of Hospital Personnel commissioned the commercial EMNID-institute to look into this problem.

In 1968, the German Hospital Association followed suit and in its turn commissioned the Commercial Research Group on Political Psychology and Communication Science (POKO), to investigate the same problem. In 1971, the German Industry Institute—the research branch of the German Industrial Employers Association—initiated a project along the same lines.

Subsequently, at the end of 1971, the university-based Institute for Research on Socio-Economic Structures was commissioned by the Federal Ministry of Labour and Social Relations to look into, once more, the same problem.

Finally in 1972, the Federal Ministry for Youth, Family, and Health requested a third commercial research organization (the Infratest Institute) to start investigating the shortage of general practitioners. The physicians and/or the physicians' associations

had done little hitherto, neither did they demonstrate a research interest.

These brief remarks indicate the need for co-ordination and subsequently co-operation among the German health services research settings, and the eventual streamlining of their research efforts. The survey of German settings conducted in the framework of this intelligence report, did identify 43 organizations more or less actively involved with health services research: 24 of these are university based or university affiliated, 5 are national, which implies that they cover the whole federation of states, 9 are commercial agencies, and 5 are independent non-profit-oriented organizations.

UNIVERSITY-BASED HEALTH SERVICES RESEARCH

Free University of Berlin

The Institute for Sociology of the Free University of Berlin (Institut für Soziologie der Freien Universität Berlin) has recently started to allocate some of its research resources to the domain of health services research.

This research activity is still very much unstructured, and is mainly the result of an *ad hoc*, part-time, and interdisciplinary co-operation between some fifteen sociologists, medical students, physicians, and nurses which fluctuates depending on the interest of the people involved.

The interest of the interdisciplinary team for health services research as such stems also from the interest of the Institute for Sociology in any problem related to the welfare and well-being of the working-class population.

Research efforts reported on, are discussed under Project with Respect to the Analysis of the Health Care System (p. 351).

The Central Institute for Social Medicine (Zentralinstitut für Soziale Medizin-Zentralinstitut für Lehre und Forschung). The Institute founded in 1970, is a research and teaching institute of the Medical School of the Free University of Berlin.

It is charged with research and teaching on social sciences in medicine. Its focus is primarily psychology, more particularly social psychology, medical sociology, health economics, health systems,

and medical education. The Institute is staffed with two full professors, two associate professors, and ten lecturers.

No health services projects are yet reported beyond the seminar-type paper.

Institute for Finances, Taxes, and Social Policy (Institut für Finanzen, Steuern und Sozial Politik) is a research institute of the Free University of Berlin which integrates the former Institute for Socio-Political Research (Institut für Sozialpolitische Forschung) as its Social Political Research Unit (Fachrichtung Sozial politische Forschung).

The Institute is directed by Professor Dr J. Zerche. The socio-political research unit which has at the moment a very limited professional staff is mainly concerned with the economic theory of social policy and has shown an active interest in the socio-economic aspects of health services research.

This research interest primarily involving F. Gründger is, however, still mainly of a theoretical, descriptive, and investigating nature. Current projects include:

1. Questions on investment and financial planning of publicly owned health care institutions (in progress).
2. An economic theory of the health care system (in progress).

Ruhr University at Bochum

The Institute of Social Medicine and Medical Sociology (Institut für Sozial Medizin und Medizin Sociologie) of the Ruhr University at Bochum started its activities about 1965 when the University was started. The director is Professor H. Viefhues who is also since 1965 the president of the German Association for Social Services in the hospital.

The department has a professional and interdisciplinary staff of about five people. However, the department draws on other co-workers inside or outside of the University depending on the project being investigated, for example, the Institute of Social Law (Institut für Sozial recht) of the same university, the Research Institute on Social Security and Income Politics of the University of Köln (p. 287).

The department's research is primarily financed through the State Bureau for Research. Recent projects reported on, deal with:

1. A new medical fee and hospital cost remuneration scheme (p. 311).
2. Towards a service industry economy (p. 309).
3. The nurse shortage in the German hospitals (p. 336).

J. W. Goethe University at Frankfurt

The Institute for Social Research of the J. W. Goethe University at Frankfurt is under the directorship of Dr M. Pinding who is also associated with the Institute for Social Medicine and Epidemiology of the Federal Health Bureau. A close working relationship exists between the two institutes. The Institute for Social Research has a staff of about five full-time professionals though outsiders are often involved with particular project work for the Institute.

The main interest of the Institute is research in the area of social medicine and sociology so far primarily limited to hospital care and hospital-related problems.

Recent projects are:

1. Nursing: some aspects of nursing practice and nursing research.
2. Nursing education (p. 339).

Albert Ludwigs University at Freiburg

The Institute for Balneology and Climatophysiology (Institut für Balneologie und Klimatophysiologie) of the Albert Ludwigs University at Freiburg is directed by Dr W. Ranscht-Froemsdorff.

Its interest in health services research as such is marginal. A research project however was done to investigate the influence of an increasing amount of leisure time on the future type of health services needed and the management problems in this respect. This project is discussed under Leisure Time Medicine, Sociology, and Psychology (p. 355).

At the same university, a doctoral dissertation on regional hospital planning has also been published. This dissertation is discussed under regional hospital planning (p. 312).

Medical University of Hanover

The Task Force on Hospital Research (Arbeitsgruppe Krankenhausforschung und Krankenhausorganisation) of the Medical University of Hanover is a recently founded group within the Medical

University. Its research interests are solely in the domain of health services research. The driving force behind the Task Force is R. Schicke who is also director and teaches at the Medical University.

Though occasionally different co-workers are engaged, its full-time professional staff as such is very limited. All research activity is self-initiated.

Recent projects include:

1. The Swedish regional health care system (p. 322).
2. Organizational metamorphosis of the health services in England since the beginning of this century (p. 323).
3. Physicians and health care in social security systems: a comparison between Germany, England, and the USA (p. 319).
4. The pharmaceutical market and prescription drugs in the Federal German Republic-International Comparisons (p. 314).
5. The organization of the ambulatory health sector: an international comparison (in progress).

The Department of Biometrics and Medical Information Science (Abteilung Klinische Informatik) of the Medical University of Hanover consists of two divisions, one on biometrics directed by Professor Dr B. Schneider, and one on clinical information science, directed by Professor Dr L. Reichertz who is also chairman of the department.

The first division concentrates on teaching and research in the areas of biostatistics, biosignal processing, and biomathematical modelling; the second division concentrates on the development of a hospital information system and teaching and research in the areas of medical information sciences and computer sciences related to medical applications.

The hospital information system developed for the medical university hospital by the department is well known.

A health services research project is reported on the potentiality of data processing in medicine (p. 343).

The Department of Biomedical Engineering and Hospital Technology (Abteilung Biomedizinische Technik und Krankenhaus-technik) of the Medical University of Hanover is directed by Professor Dr O. Anna. Its research interests touch marginally on

health services research and involve the economics, safety, reliability, and management of hospital technology.

Ruprecht-Karl University of Heidelberg

The Clinic for Psychiatry and Neurology (Psychiatrische und Neurologische klinik) of the Ruprecht-Karl University of Heidelberg has recently developed an interest in health services research with a view to the reorientation of psychiatric care and the management of psychiatric care institutions.

A small number of professionals of this same clinic (about three) have been involved with this health services research endeavour. All research is self-initiated. Occasionally, the help of outsiders such as physicians' associations, associations of psychiatric care institutions, etc., is called for.

The clinic member who is most involved with this health research activity is Dr D. Von Zerssen.

Current projects include:

1. Institutional psychiatric care in Bayern from a viewpoint of planning.
2. A report on psychiatric care in Bayern, including the education of personnel (p. 329).

The Clinic for Social Psychiatry (Sozial psychiatrische Klinik) of the Ruprecht-Karl University of Heidelberg, has been active in the field of health services research for about the last ten years, although this is not its main activity. The clinic is directed by Professor Dr H. Hafner and has a quite extensive staff of whom about five professionals are actively involved with health services research. Funding comes primarily through the university.

Recent and current projects with respect to health services include:

1. Hospital communication (p. 348).
2. Hospital sociology (in progress).
3. The standardization of psychiatric diagnostic instruments with a view to psychiatric-epidemiological research.
4. Methodology of psychiatric care out-patient data collection (has been published by WHO).
5. Sociometrical analysis of group dynamics in a social psychiatry clinic.

6. Study of the social behaviour of elderly people in a community hostel.

The Research Group on Systems Research (Studiengruppe für Systemforschung) of the Ruprecht-Karl University of Heidelberg has been recently founded as an interdisciplinary institute, affiliated to the university, with a view to research work long funded by outside sources. It groups about ten professionals from the university's departments on a part-time basis, depending upon the research projects in progress.

Though the group has also a research interest in areas other than health services, its recent endeavours have very much been in this area.

Recent and current projects in the domain of health services research are:

1. Analysis of problems and critical areas for reform of the German health care system (p. 323).
2. Changing the health care system in Germany (in progress).

The Task Force on Planning of the Medical Faculty (Planungsgruppe der Medizinischen Fakultät) of the Ruprecht-Karl University of Heidelberg has been founded in 1966 within the medical faculty with a view to the elaboration of guidelines and recommendations for medical school planning purposes.

The Task Force is directed by Professor Dr W. Hardegg and M. Jacubeit. It counts three full-time researchers. Professionals from within the faculty are used upon an *ad-hoc* basis.

The Task Force closely co-operates with the Research Group on Systems Research of the same university.

Its research work so far has been mostly funded by the Commission on University Education of the Ministry of Education of Baden-Württemberg as well as other institutions concerned with educational planning. Research projects include:

1. Financial requirements for the implementation of the new accreditation regulations for physicians: a methodological approach (p. 309).
2. Financial requirements for the expansion of the medical research and training facilities until the year 1980 with regard to the new accreditation regulations for physicians (study done for the States of

Niedersachsen, Schleswig-Holstein, and Nordrhein-Westfalen) (p. 309).

3. Basic aspects of the structure of and data for medical schools—a design of a class of models applicable to planning for medical schools (in progress).

Christian-Albrechts University of Kiel

The Medical Clinic of the City Hospital of Kiel (Medizinische Klinik der Stadtischen Krankenhauses Kiel) started in 1972 with some research endeavours in the domain of health services research.

The Medical City Hospital itself is affiliated with the Christian-Albrechts University of Kiel.

Three staff members, Professor Dr K. Engelhardt, Dr A. Wirth, and Dr L. Kindermann, originated this activity which is so far completely self-supported. There are reports of work on hospital patients: limits of medico-technical hospital care, a new approach (p. 349).

University of Cologne

The Institute for Research on Professions (Institut zur Erforschung sozialer Chancen-Berufsforschungsinstitut) of the University of Cologne has been active in the field of health services research since about 1968 although its interests are not limited to this area.

The Institute is directed by Dr W. Kaupen and has a professional staff of four.

The Institute has also a close working relationship with the Research Institute for Tradespeople (Institut für Mittelstandforschung) and the Research Institute for Sociology of the same university.

Its major funding source is the State although occasional help is received from other agencies, for example help with the collection of data, help with the analysis of the data, etc.

The following research projects with respect to health services research were carried out in recent years:

1. The formulation of a medical school curriculum based upon the patient's expectations and the image of the medical profession (p. 340).
2. Stability and trends in the level of physician authority: a sociological exercise in physician-patient relationship analysis (p. 351).
3. Sociological problems of the medical profession (p. 350).

4. The referral of patients as a component of the medical interaction system (in progress).

The Research Institute on Social Security and Income Politics (Forschungsinstitut für Einkommenspolitik und Soziale Sicherung) of the University of Cologne is a recently founded research institute affiliated with the same university.

Its interest in health services research is developing but still marginal. The Institute has been involved so far through a co-operation with the Social Sciences and Health Sociology Department of the Bochum-Ruhr University (p. 281).

J. Niggermann of the Institute was responsible for this co-operation. This common project is discussed in a new medical fee and hospital cost remuneration scheme (p. 311).

The Department of Factory Health Care and Community Medicine (Abteilung für Arbeits- und Sozialmedizin) of the University Hospital of the University of Cologne is a department of the university, which is becoming engaged, though still marginally, with health services research. The department is directed by Professor W. Bolt and is primarily funded by the University. Research in the domain of health services is reported on: in a medicostatistical study on medical care problem areas based upon the experience of a medical care research centre of Cologne (p. 327).

Ludwigs-Maximilians University at Munchen

The Institute for Politics and Public Law (Institut für Politik und öffentliches Recht) of the Law Department of the Ludwigs-Maximilians University at Munchen has primarily an educational role.

The Institute is directed by Professor H. Zacher. Its research activities touch on health services research: legal aspects of social security, legal aspects of health services institutions and regulations, legislation on social services for personnel, etc.

The Institute is primarily funded through the State, though some funds are also provided for by private or professional societies. Research activities include: the provision of medical care, drugs, and other therapies, especially those provided by opticians and public health insurance (p. 329).

Westfälische Wilhelms University at Munster

The Central Institute for Regional Planning (Zentralinstitut für Raumplanung) of the Westfälische Wilhelms University at Munster, is involved with research in the domain of regional planning.

The Institute which has about fifteen professionals is directed by Professor Dr W. Ernst.

The Institute is primarily funded through the State and its interest in health services research has been developing in recent years. The Institute is interested in this respect in the sociological impact of health care institutions upon the community and the input of the community in shaping and managing its health care institutions.

This research is reported on regional planning and its relation to health care delivery (p. 355).

The Institute for Industrial Management Research (Institut für industrielle Unternehmensforschung) of the Westfälische Wilhelms University at Munster is marginally involved with health services research.

The Institute is directed by Professor Dr D. Adam and has two professionals who are involved with health services research. Funding comes primarily through the State.

Research includes hospital management caught between medical and managerial objectives (p. 303).

The Neurological Clinic (Nervenklinik der Universität) of the Westfälische Wilhelms University at Munster is directed by Professor Dr D. Habeck.

The Clinic has recently been involved in a research endeavour in the domain of health services research though this interest has been purely peripheral.

This research is reported as: people's opinions about psychiatric and medical facts and problems (p. 347).

University at Osnabrück

The Institute for Educational Research (Institut für Ausbildungsforschung) is affiliated with the University at Osnabrück.

Its interest in health services research is purely incidental: in 1973 the Institute received a grant from the recently founded Osnabrück University to develop the medical school curriculum. Three

staff members of the Institute are involved with this project, reported as: medical school curriculum and regional patient care—a model for Osnabrück (p. 339).

University of the Saarland

The Institute for Social and Economic Politics (Institut für Sozial und Wirtschaftspolitik) of the University of the Saarland at Saarbrücken is affiliated with the Law Department of the same University.

The Institute is directed by Professor Dr E. Liefmann-Keil and is primarily funded through the State. The Institute numbers about five professional researchers. Its interest in health services research stems from its research endeavours with respect to social security. The research project reported is: the pharmaceutical industry and the future development of social health insurance (p. 328).

University of Ulm

The Department of Medical Sociology and Social Psychology (Abteilung für Medizin-Soziologie und Sozialpsychologie) of the University of Ulm is primarily teaching-oriented and is as such State funded. However, occasionally some research projects are carried out.

Its director is Professor Dr H. Enke and its number of professional staff fluctuates around five. Besides health services research, the department's research interests are also in the domain of rehabilitation care.

Recent projects are:

1. Clinical rehabilitation.
2. Research on health care and hospital organization (p. 326).

NATIONAL INSTITUTES

German Hospital Association (Deutsche Krankenhausgesellschaft). The German Hospital Association represents twelve Federal and eleven State hospital associations in Germany or more than 99 per cent of all German hospital beds. Examples of the twelve Federal associations are: German Red Cross, German Caritas Association, German Association of Cities, etc. As such, it is the main lobbying force with respect to general hospital policy in Germany. The Association was founded in 1949 as a development of a similar associa-

tion which existed since 1937. The Association is governed by a general board, constituted by thirty-five elected members and as of 1 January 1974 this board is presided over by W. Bauer.

Six committees prepare and follow all decisions. These are: Committee on Personnel, Committee on Hospital Organization, Committee on Financial Problems, Committee on Hospital Drug Departments, Committee on Psychiatric Institutions, Committee on Hospital Statistics.

The Association also has a full-time staff for day-to-day operations. This full-time staff is managed on the Federal level by the secretary-general of the association, H. W. Müller (as of 1 May 1971). One full-time staff member also co-ordinates the Association's day-to-day operations in each of the eleven states (Berlin included). These States are, under German law, the main responsible agents for all health services operations in each of them. Though the Association's main objective is development of and lobbying for general hospital policy in Germany, it also has a much wider interest and this in all aspects of health services, including primary institutional health services. With respect to research and education, the Association has for instance a heavy interest and close working relationship with the German Hospital Institute. The Association also frequently commissions particular research projects from other agencies besides the German Hospital Institute.

However, occasionally some research is also done by the Association itself in preparation of its policies. Research projects proper to the Association and reported on, are:

1. Research into the objectives and the activities of the nursing profession (p. 337).
2. A survey of electronic data-processing applications in German hospitals (p. 342).
3. A survey of supply and demand of hospital personnel (p. 335).
4. A campaign strategy to attract nursing personnel (p. 337).
5. The development of a uniform hospital accounts reporting scheme (p. 308).

German Hospital Institute (Deutsches Krankenhausinstitut). The German Hospital Institute (DKI) is by far the single most important health services research setting in Germany. The Institute was founded as a registered society in 1953.

Foundation-members are: the German Hospital Association, Association of Leading Hospital Doctors of Germany, the Nurses Association of Germany, and the Association of German Hospital Administrators. The DKI's interdisciplinary activity in the field of teaching and research led to an affiliation with the University of Dusseldorf. The organs of the DKI are the meeting of all members, the board of curators, the management of the Institute (board of directors), and the scientific advisory council. The German Hospital Institute is currently directed by S. Eichorn and R. S. Sahl and codirected by K. Jeute and H. W. Müller, secretary-general of the German Hospital Association.

The Institute has about twenty full-time scientific staff members. It is the objective of the DKI's work to contribute to the improvement of the medical, nursing, social, and economic efficiency of hospitals by means of independent and scientific research. Based on this, the DKI's tasks consist of interdisciplinary research, documentation, training and education, and dissemination of information in the field of health and hospital services.

The DKI as a non-profitmaking, scientific institute of public benefit concerned with the administration of health and hospital services, works in co-operation with several universities, hospital owners, the associations of leading hospital professions, with hospital planners as well as with those authorities of the federal government and the provincial governments concerned with health and hospital services.

The Institute's activities includes:

1. *Research.* The research programme of the DKI consists of the following fields of research.

Development of the medical, economic, social, legal as well as technical basis of hospital or health services.

Requirements, demand, and organization of medical services, especially hospital services: categorization of types of diseases, diagnostics/therapy, and specialties. Potentialities and limits of specialization and super-specialization. Determination of requirements; structures of demand and supply.

Organization of medical services. Structure of personnel, supply of personnel, training and advanced training. Financial planning, regional planning, especially hospital services. Health economy analysis.

Planning, organization, and control of hospital operations and other institutions of medical services: methods and organization of programming and planning of buildings.

Structure and organization of decision-making processes.

Methods of management.

Information and communication in the field of health and hospital services: development of information systems and data banks.

2. *Education and professional training.* The DKI's engagement in training and education for hospital management includes the following activities:

Seminars on health and hospital services.

Two-year courses on hospital management and administration.

Problem-orientated short-term courses (for example, technique and application of EDP in hospitals, organization of nursing, organization of supply services).

Management courses: participation in training and education schemes of associations of hospital managers and administrators.

Co-operation with universities, seminars as well as training and education schemes for leading hospital professions, hospital architects, and hospital engineers.

Periodical organization of International Hospital Symposia (two-year rotation period in co-operation with the Institute for Hospital Building, Technical University of Berlin).

3. *Information service.* By giving advice and consultation, the DKI has also an important information activity. The DKI's assistance in solving impending problems is sought by hospital owners, leading hospital professionals, hospital architects and authorities in Germany as well as in European and non-European countries.

Studies have been carried through by the DKI in the following countries: Afghanistan, Greece, Ireland, Luxemburg, Central and South America, Nigeria, Austria, Switzerland, Spain, Tanzania, and Turkey. The DKI is also active on behalf of the World Health Organization (WHO) and the Organization for Economic Co-operation and Development (OECD) as well as of the Council of Europe.

4. *Documentation.* Evaluation of findings and experience—from the field of sciences relevant to hospital services as well as from practical experience—is done in the DKI documentation department.

Review of 250 periodicals in the field of hospital services as well as other publications from Germany and foreign countries is coming out in association with the Institute for Hospital Building of the Technical University of Berlin as well as with other hospitals documentation services in Europe and the United States.

An abstract service is published in this respect (*Informationdienst Krankenhauswesen*).

The Institute also has a close working relationship in view of its objectives and activities with the following institutes or organizations: Institute for Hospital Building at the Technical University of Berlin; Universities in Berlin, Bochum, and Cologne. Technical colleges in Düsseldorf and Giessen. German Hospital Association (p. 289) and its committees; Association of Leading Doctors; Nurses' Associations; Association of Hospital Administrators.

The Institute has also occasionally co-operated with several other German as well as non-German organizations.

Research projects of the Institute reported on are.

1. Hospital management theory and applications (p. 304).
2. Structure and organization of medical and nursing care (p. 333).
3. Hospital co-operation: organizational and judicial opportunities (p. 332).
4. Hospital maintenance: strategies and financing (p. 343).
5. The role of the head nurse in the opening of a new hospital (p. 334).
6. Management principles of hospital admission procedures (p. 332).
7. Organization and integration of hospital libraries (p. 343).
8. Inter-hospital comparison of hospital management statistics (p. 341).
9. Hospital morphology (p. 344).
10. Length of stay analysis in acute care hospitals (p. 333).
11. A projection of hospital bed shortage up until 1985 (p. 313).
12. Hospital management by objectives (p. 303).
13. Organizational structure and physical layout of nursing units (p. 335).
14. Shift work in patient care (p. 336).

Many of these reports are the result of different overlapping research endeavours within the Institute.

The Institute for Economy and Social Sciences of the Federation of German Labour Unions (Wirtschafts- und Sozialwissenschaftliches Institut des Deutschen Gewerkschaftsbundes) is the research branch of the labour unions in Germany.

The Institute is currently directed by Dr H. Markmann and F. Farthmann and has some thirty full-time professional researchers. The Institute is funded by the Federation of German Labour Unions.

The Institute's main activities are in the areas of social and labour problems and general economic policy. Its interest in health services research is marginal and always related to the interface with social and labour problems.

A project reported on is health policy in the Federal German Republic—an analysis and recommendations for change (p. 318).

Institute of German Industry (Institut der Deutschen Wirtschaft). The Institute of German Industry (before 1913, the German Industry Institute: Deutsches Industrie Institut) is a research setting directly supported by the German industrial community.

The Institute was reorganized in its present form after the Second World War and more recently in 1973.

The Institute has an extensive staff which deals primarily with research in the area of organization, management, social and economic policy as related to industrial enterprises.

The Institute is mainly funded by industry.

Though its interest in health services research can only be formulated as marginal, the Institute has nevertheless recognized the overall importance and impact of the health services, and social security, on the economic life of Germany. Hence, most health services research is done from an outside point of view and investigates the interface between the health services and the rest of the socio-economic life in Germany. Most health services research is done by the Social Research Department of the Institute. Most research projects are short-term and actively geared towards the popular issues in social security and health insurance. This does not preclude however their soundness, indeed it only reflects the Institute's

predominant interest in the dissemination of information rather than in basic and theoretical research.

Projects reported on include:

1. Current problems of health insurance: a survey of different viewpoints (p. 319).
2. Physician payment schemes (p. 321).
3. Problems of preventive health care (p. 325).
4. The single-class hospital (p. 330).
5. The drugs and prescription market in Germany (p. 316) (in progress).
6. Hospital costs and medico-technical progress (p. 317).
7. Health insurance and physicians (p. 345).
8. Recommendations towards a new hospital financing mechanism (p. 317).
9. Reforms long due: co-operation and cost reimbursement in health insurance (p. 345).

The Hamburg Economic Institute (*Hamburgische Welt-Wirtschaft-Archiv*) is a non-profit institution founded in 1908 which is affiliated to and funded by the city-state of Hamburg. The current director is H. Ortnieb. Although the Institute is by definition strictly State-related, it has nevertheless an interest and impact which transcends the State boundaries.

The Institute's objectives are to investigate and highlight socio-economic life through publication, information, and research. The Institute's main activities deal with the collection of documentation, literature survey, applied research, and basic research. Most research is empirical and of a socio-economic nature. The Institute's interest in health services research is secondary. One research project has been reported on: cost-benefit analysis of a health care programme (p. 306).

COMMERCIAL AGENCIES

The Institute for Survey Research—Allensbach (*Institut für Demoskopie Allensbach*) is a privately owned commercial company affiliated with International Research Associates Inc., founded in 1947, which is primarily involved in market research, social research,

political polls, legal evidence surveys, and similar studies. All projects are on a fee-for-service basis.

The company has 14 full-time professional researchers, 80 employees, and some 800 fieldworkers. It is directed by Professor Dr E. Noelle-Neumann.

All accepted methods of opinion research are used, including surveys, group discussions, and in-depth interviews. A specialized library, printing plant, and computer facilities are on the premises. Much work is commissioned by government agencies, welfare organizations, employers' federations, etc.

Health services research is part of the company's activities, although nearly always of a 'surveying' and hence primarily descriptive nature. Research projects in the domain of health services research number about ten and include:

1. Social work in the health service (p. 347).
2. The image of the German hospital (p. 346).
3. Opinions about hospitals (p. 347).
4. Housing conditions and well-being (p. 348).
5. Alcoholism in Germany (in progress).

The Infratest Institute (Institut für sozial- und wirtschaftsforschung: Infratest) is a privately owned company which is primarily involved with social and economic research and the development of management information systems and data banks in this respect. All projects are on a fee-for-service basis.

Its interest in health services research is purely circumstantial and is so far limited to two projects.

The first is being funded by the German Hospital Association, the German Hospital Institute, the Association of Hospital Directors, and the Association of Hospital Medical Directors. The second was funded by the Federal Ministry of Public Health, Youth, and Family.

These projects are reported on in:

1. A methodology towards the development of a German hospital index (p. 341).
2. Professional expectations and professional motivations of German physicians (p. 352).

Prognos AG is a privately owned Swiss economic research institute including the following departments: market research and marketing

consulting, management consulting, urban and regional planning, economic policy consulting, and general economic research.

The Institute was founded in 1959 and has a staff of eighty full-time professionals. Its interest in health services research has led to three projects:

1. Extended care facilities (p. 326).
2. Public investment in Germany up until 1985 (includes a chapter on public investments in the health care area—referred to on p. 326).
3. A comprehensive study on biomedical engineering in Europe (in progress).

The Research Group on Political Psychology and Communication Sciences (Poko-Studiengruppe für politologische Psychologie und Kommunikationsforschung) is a privately owned commercial company which is involved in market research, social research, political polls, and similar activities. Its main activity is in group discussions, in-depth interviews, mostly related to personnel management problems. All projects are on a fee-for-service basis.

The company has four subsidiaries in Germany. Its interest in health services research, though certainly within the scope of the firm's objectives is only circumstantial.

Its research endeavour started in 1968 and was funded and codirected by the German Hospital Association. This activity is reported on in the following projects.

1. A concept of a nursing recruitment technique (p. 354).
2. A campaign strategy to attract nursing personnel (together with the German Hospital Association) (p. 337).

The Emnid Institute (Emnid Institut) is a privately owned commercial company founded in 1945 which has been associated with the Gallup group since 1955. The Institute is involved in market research, social research, public opinion surveys, and electronic data processing.

All projects are on a fee-for-service basis. The Institute has a staff of seven full-time and five part-time professionals and calls upon field-workers for its surveying activities. The firm has so far been involved in 3,293 projects.

Its interest in health services research though certainly within the

scope of the firm's objectives, is, however, only incidental though developing. Several surveys in the field of health services have been held by this firm (as of 1975):

1. Hospital survey of 300 head nurses, 300 physicians and 300 administrators in 1969; of 300 administrators in 1971; of 300 administrators in 1974 (all of them in the area of market research).
2. Survey of 1,200 physicians in 1965; 200 physicians in 1969 and 1974; 50 pharmacists in 1974 (all of them in the area of market research).
3. Survey of 100 dentists in 1969, 1970, 1971, 1972; and 200 dentists in 1972 (all in the area of market research).

Its only research endeavour in health services research, however, was done in 1968 and funded by the Research Foundation of the German Union of Hospital Personnel.

It is reported on in: attitudes and opinions about the nursing profession in Germany (p. 353).

The Medical Consulting Bureau (Medizinische Beratungsgesellschaft) is a privately owned commercial engineering and technical consulting firm whose interest in health services research is purely circumstantial.

One research activity is discussed: the implementation of a management by objectives for hospitals, based upon the criterion of urgency of medical treatment (p. 305).

The Institute for Research on Socio-economic Structures (Institut für Sozioökonomische Strukturforchung) in Cologne is directed by L. Alex and is marginally involved with health services research. Three of its members have been involved with this research endeavour. The Institute is primarily funded through project work; its health services research endeavour has been funded by the Federal Ministry on Labour and Social Relations.

This research is reported in: job analysis and optimal manpower deployment in hospitals (p. 338).

The Medical Centre Group (Medizinisches Zentrum Verwaltungsgesellschaft founded in 1910) is a co-operative effort of, at this moment in time, fourteen professionals of different background. The Group as such offers consulting services with respect to the planning,

development, and management of medical care facilities: such as group practices, rehabilitation centres, and hospitals.

The Group is particularly interested, hence its health services research activities, in the conceptualization of health care models, such as integrated health care and ambulatory health care. The Group's financial resources (£100,000 in 1973) came primarily from consulting activities, and health care projects development.

The Group has two offices one in Cologne (J. Fehler, director; Dr H. Leich and Dr E. Kloss) and one in Berlin.

The Group's actual activities include:

1. The development of a rehabilitation centre.
2. The planning and implementation of an integrated health care system model for a particular region.
3. The conceptualization of ambulatory care.
4. The development and organization of an ambulatory care nursing unit in an acute care general hospital.

The Group also has a subgroup Task Force on Planning and Consulting for Health Care Institutions.

Task Force on Planning and Consulting for Health Care Institutions (Arbeitsgruppe zur Planung und Beratung von Einrichtungen des Gesundheitswesens—AZB Leverkusen). The Task Force was founded in June 1973 out of the Task Force Leverkusen (Arbeitsgruppe Leverkusen) as a subdivision of the Medical Centre Group (p. 298) to concentrate on research and development and planning of medical care institutions. The Task Force is directed by J. Fehler and Dr H. Leich both members of the original Task Force Leverkusen. The other members of the Task Force Leverkusen were Eichhorn-Raab and Hähnchen.

The staff of the Task Force on Planning and Consulting for Health Institutions is primarily constituted out of professionals who were many years active in the German Hospital Institute.

A research endeavour is developing within the Task Force in close co-operation with the Medical Centre Administration Group. No research projects, proper to the Task Force, have as yet been started.

INDEPENDENT AGENCIES

The Health Insurance Agency of Ratingen (Allgemeine Orstkrankenkasse Ratingen) is a non-profitmaking health insurance agency which provides its services to the local community. This agency directed by Bodrick has, accidentally, been involved with a health services research project: hospital planning in the north-western region of the Dusseldorf-Mettmann district (p. 313).

The German Institute for Rational Medicine (Deutsches Institut für rationale Medizin) is a recently founded independent non-profitmaking research setting which investigates on a project basis particular problems in the area of health services research. The Institute is presided over by Dr F. Voges and directed by Dr K. Roos and has a limited number of full-time professionals which fluctuates depending on the project work in hand. Funding is always on a project basis.

The project reported on is: models of physician payment schemes in insurance-based medical care (p. 322).

German Development Institute (Deutsches Institut für Entwicklungspolitik). The German Development Institute in Berlin is an independent scientific institution in the field of international development. It was founded in 1964 as a non-profitmaking organization by the German Federal Republic and the City-State of Berlin; both parties share the cost of the Institute.

The Institute has three functions:

Advisory and consulting services to public institutions dealing with international co-operation.

Research work in fields of current interest for international development.

Training of German postgraduates for assignments in German and international development institutions.

These activities are entirely financed from the regular budget of the Institute.

The Board of Trustees consists of thirteen members. Six of them are appointed by the Federal German Republic, three by the City-State of Berlin, and four are appointed jointly by both sponsoring partners. The Chairman is Hans Matthöfer, Parliament-State Secretary, Federal Ministry for Economic Co-operation, Bonn; the Vice-Chairmen are Dr Günther Brunner, Senatsdirektor, Senator

for Economic Affairs, Berlin, and the President of the German Institute for Economic Research, Berlin.

The GDI has at present a professional staff of seventeen full-time members, including the two directors, Dr Klaus Billerbeck and Dr Gebhard Kerckhoff. In addition the GDI offers two six-month posts annually to staff members from the administration of a developing country.

The research activities of the Institute are application-orientated. They concentrate on present and future needs of the practical work of national and international development policy, focus on activities in the public sector, and are closely linked with the consulting activities of the Institute for the respective ministries of the FRG, the European Community, UN institutions, and public bodies in developing countries.

Most of the consulting activities consist of the evaluation of development programmes and projects as well as of advisory services on current problems of international development co-operation. The Institute does not include in its programme the detailed technical planning of single development projects or theoretical and basic research, for example, a general scientific analysis of the development process.

At present the Institute works on the following subjects:

International trade, in particular world textile and sugar agreement, association policies of the EEC.

Planning of regional development programmes, in particular for the least developed regions.

Social planning, mainly social indicators and social sector analysis including health planning.

Methods of country programming in the context of aid policies.

Its interest in health services research stems from its interest in international development and its planning aspects.

Four health services research projects have been reported on:

1. Cost-benefit analysis—an instrument for rationalizing the allocation of funds for educational and health investments (p. 306).
2. Toward social planning in developing countries—indicators of social justice—method of health sector analysis (p. 315).
3. Health planning—the development of an information system—a simple case-study in the Departamento del Valle del Cauca, Colombia (p. 315).

4. Organization of decentralized health services in Latin America (p. 344).

The Institute for Documentation, Information, and Statistics (Institut für Dokumentation, Information und Statistik) of the German Cancer Research Centre (Deutsches Krebs Forschungszentrum—Stiftung des öffentlichen Rechts) is a non-profitmaking institution directed by Professor Dr G. Wagner of the University of Heidelberg. The Institute has eighteen full-time professionals and closely cooperates with the other seven research institutes of the German Cancer Research Centre for which all electronic data processing is done. The Institute is financially supported through projects commissioned by the Federal Government.

The Institute is doing research on cancer epidemiology and statistics; mathematical cancer models, statistical evaluation of animal experiments and clinical trials, electronic data processing, and related problems such as data security, man-machine dialogue, and medical record processing.

No health services research as defined in this document is reported on.

The Institute also disseminates cancer and cancer research related information.

The German Institute for Economic Research (Deutsches Institut für Wirtschaftsforschung) is an independent, non-profit-making research institute founded in 1925. Its primary objective is to investigate economic problems.

The Institute's director, Dr Klaus-Dieter Arndt, died recently and no successor has yet been named.

Its interest in health services research is secondary and is limited so far to a literature survey of alternative plans to reform the health care and the social security system, carried out by Dr P. Rosenberg.

HEALTH SERVICES RESEARCH PROJECTS

ECONOMY-ORIENTED HEALTH SERVICES RESEARCH (22)

Hospital management by objectives (Das Zielsystem des Krankenhauses—Durchführung organisatorischer Umstellungen im Krankenhaus)

In 1970, the *German Hospital Institute* published the results of a limited analysis by its director, S. Eichhorn, of how to develop a coherent system of hospital management objectives and to develop a hospital organizational structure accordingly.

The methodology of this analytical and developmental research endeavour basically applies some notions of modern industrial management theory to the world of hospital management (13, 14).

Hospital management caught between medical and managerial objectives (Krankenhausmanagement in Konfliktfeld zwischen medizinischen und wirtschaftlichen Zielen)

In 1972, Professor Dietrich Adam of the *Institute for Industrial Management Research of the Münster University* started to investigate hospital management with a view to the application of industrial methods to the development of new management methods and techniques for hospitals. The project staff also includes Fromming and Winkler.

The methodology of this analytical and basic research project which was funded by the Institute itself consists primarily of a theoretical analysis of different management theory concepts with respect to the situation particular to the hospital.

Several topics are covered, for example:

1. Management by objectives as a way to improve hospital efficiency.
2. Analysis of the hospital's decision-making processes.
3. Hospital objectives and the effect of the economic principle upon these objectives.

4. A model for hospital decision-making (this model is translated into a model for the hospital organization).

The author also identifies critical problem areas which he discusses from an economic point of view.

1. The effect of the average length of stay upon hospital costs and hospital manpower.

2. Resource allocation as a way to improve under-capacity.

3. Regional hospital co-operation as a way to decrease hospital costs.

4. Hospital productivity: including factor substitution, activity analysis, and management by production centres.

The author plans to develop a hospital accounting scheme based upon the theoretical treatise reported here. This basic study is purely economic.

It is shown that many commonly made assumptions upon which recommendations for improvement are usually based, are of very limited value (1).

Hospital management: theory and applications (Krankenhausbetriebslehre: Theorie und Praxis des Krankenhaus betriebes)

In 1963, Dr S. Eichhorn, director of the *German Hospital Institute* started on behalf of the Institute a major research effort to bring together and publish its own experience and the experience of its members with respect to hospital management.

The methodology of this analytical, descriptive, and very much applications-oriented research effort is straightforward and consists of a theoretical treatise on each of the topics covered and a set of applications in this respect.

The first part of the study, published in 1967 and revised in 1974, deals with hospital bed planning, hospital construction, personnel management, and the management of nursing units.

The second part of this study published in 1973 deals with the organization of the hospital in general, its objectives and its hierarchy, its information needs, hospital accounting as the basis for hospital information, the techniques and organization of electronic data-processing applications and informations systems in hospitals, hospital costing and financing procedures.

The third part which will tentatively deal with the medical departments is not yet published.

Though few new concepts are developed, the study excels through its thorough and all-encompassing outlook. Main attention is paid to the implementation of established solutions rather than to the development of new solutions (15, 16).

The implementation of a management by objectives for hospitals, based upon the criterion of urgency of medical treatment (Realisierung des Bedarfsdeckungszieles im Krankenhauswesen nach den Kriterium der Dringlichkeit der Medizinische Behandlung)

In 1971, Dr C. Lohfert of the *Medical Consulting Bureau* published the results of a research endeavour on the application of a management by objectives approach for hospital management.

This six-month research effort was commissioned by the same Bureau. The methodology of this analytical and developmental research consists of:

1. A problem formulation based upon an analysis of the classical hospital management system. It is indicated that the complexities of specialization and the interdependencies of the different new elements in the system have outgrown the possibilities of this classical management approach which is based upon a fee-for-service system and the sociological implications of this system. Sub-optimization which results from this classical management approach is widespread.
2. The development of alternative decision modes: the identification of objectives as well as the quantification of these same objectives in order to measure progress towards their achievement.
3. The in-depth analysis of a single decision model selected. The decision criterion of this model is the degree of urgency of any medical treatment.

This research is heavily theoretical and is an attempt at applying modern management theory to the field of medicine.

Cost-benefit analysis: an instrument for rationalizing the allocation of funds for educational and health investments (Kosten-Ertrags-Analyse-Ein Instrument zur Rationalisierung der administrierten Allokation bei Bildungs und Gesundheitsinvestitionen)

In 1967, Dr Klaus Billerbeck of the *German Development Institute* started a one-and-a-half-year research effort to define and analyse the difficulties met in applying cost-benefit analysis for determining public education as well as health investment projects.

This analytical and basic research project follows up on the investigator's field experience with the appraisal of a 100-bed hospital construction project in Ethiopia, funded by the German Federal Ministry for Economic Co-operation.

The author emphasizes among other things the need for a mixed model approach involving: (1) a commensurable quantitative analysis backed up by (2) a non-commensurable quantitative analysis rounded off by (3) a qualitative analysis where the intangibles are taken into account.

In any case the subjective decisions made all along by the analyst should be made explicit as much as possible. The author also develops a system of decisions to deal with other than purely economic goals in a coherent and systematic way.

Other topics paid special attention to are social opportunity costs; social discount rates; the substitution of shadow pricing techniques by techniques which use balance of payments and employment rate criteria instead; input-output analysis to determine specific external benefits. Further analysis is done on the specific problem of cost-benefit analysis, for the hospital construction projects.

Also a five-stage model is developed to highlight the role of cost-benefit analysis on the over-all decision-making process.

In an annexe a model for evaluating the direct monetary benefits of the particular 100-bed Ethiopian hospital mentioned before is added (4).

Cost-benefit analysis of a health care programme (Cost Benefit Analyse im Gesundheitswesen)

In 1968, Jürgen Wolfslast of the *Hamburg Economic Institute*, started a one-year research effort to investigate the costs and benefits of a pregnancy care programme in the Hamburg region. The method-

ology of this analytical and developmental research, follows common cost-benefit methodology. Though the operationalization of the cost measures was straightforward, major difficulty was encountered, as could be expected, with respect to the operationalization of the benefit measures, for example, the benefits of a lower mother and infant death-rate to the community, the differentiation between benefits advantageous to the individual mother and benefits advantageous to the community.

Eventually, the project resulted in the development of an optimal financial incentive scheme for preventive pregnancy care visits. The optimalization is based on the hypothesis that benefits can be discounted through the use of the average wage growth-rate (67).

Cost evaluation and financing of hospital activities (Kosten und Finanzierung der Krankenhausleistungen)

In 1972, J. Baumgarten published his doctoral dissertation on cost evaluation and financing of hospital activities. This doctoral research was done during the years 1970-2 at the Johannes Gutenberg University of Mainz.

The methodology of this analytical and developmental research consists of:

1. An economic analysis of hospital costs and hospital costing procedures. This analysis investigates in detail the effect of fixed and variable costs upon the total hospital costs.
2. An analysis of German corporate law in view of hospital financing.
3. A comparative analysis of different alternative hospital costing procedures.
4. An evaluation of the single-class hospital from the point of view of hospital costs.
5. An analysis of health insurance cost-sharing in view of hospital cost expenditures.
6. An evaluation of cost-efficiency analysis procedures as could be used in hospitals.

Different hypotheses are worked out with respect to hospital costs. Some recommendations are also included (3).

The development of a uniform hospital account reporting scheme (Erarbeitung eines Kontenrahmes für Krankenhauser-Finanzbuchhaltung und Betriebsbuchhaltung)

In 1973, the *German Hospital Association* started with a one-year research effort to elaborate a uniform accounts reporting scheme to be used by its members. About fifteen researchers of the Association, under the directorship of Professor H. Muller, are involved in this project. The methodology of this prospective, descriptive, and applications-oriented research project is straightforward. No results are as yet published.

Trend analysis and controllability of hospital costs (Die Ausgaben der gesetzlichen Krankenversicherung für Krankenhauspflege im Jahrzeit 1958 bis 1967)

In 1971, H. Schlauss of the *Law Department* of the Philipps-University of Marburg-Lahn published his doctoral dissertation on trend analysis of hospital costs and an analysis of factors which could influence the evolution of these costs. This dissertation was supervised by G. Gutmann and K. Hensel. The methodology of this analytical and developmental research consists of:

1. A problem definition to identify the relevant cost factors in the system of hospital cost reimbursement by health insurance.
2. The statistical analysis of hospital costs developments and trends.
3. The analysis of hospital costs and hospital income dynamics.
4. An analysis with respect to the identification and enumeration of factors of influence and control including those which have an effect on hospital planning.

This research endeavour goes into great detail in analysing existing cost data and in evaluation of different possible controls in view of their impact. A limited number of recommendations is included.

The following controls are particularly investigated:

- (a) Regressive reimbursement schemes.
- (b) Control of investment costs.
- (c) Control of hospital occupancy rates.
- (d) Control of medico-technical innovations.
- (e) Control through general economic policy: a business cycle policy.

The author indicates that the effect of future but foreseeable developments in health insurance coverage will be marginal upon hospital costs evolution. The author concludes by recommending a regressive patient day reimbursement scheme (57).

Towards a service industry economy: a systems and political analysis of hospital care costs (Zur Dienstleistungsökonomik—Systemanalyse und Systempolitik der Krankenhauspflagedienste)

In 1969, the *Institute of Social Medicine and Medical Sociology* of the Bochum-Ruhr University started a two-year research project to implement some new economic and social sciences methods in relation to hospital problems.

The objective of the study was to develop a theoretical and systematic as well as politically feasible plan for changing the hospital financing system.

The project as such is discussed elsewhere (p. 311).

This follow-up study refers to a book publication, a more systematized and more rigorous economic approach although basically the same problem area is dealt with.

Authors are Professor Dr Ph. Herder-Dorneich and Dr W. Kötz (29).

A method to determine the financial needs to implement the new accreditation regulations for medical personnel (Finanzbedarf zur Durchführung der neuen Approbationsordnung für Ärzte-Methodische Überlegungen zu seiner Ermittlung)

In December 1969, the *Task Force on Planning* of the Medical Faculty of the Ruprecht-Karl University of Heidelberg received a six-month research grant from the Medical Task Force of the Committee on Universities of the State Ministers of Education of Germany to develop a method:

1. To determine the future financial needs of the medical faculties.
2. To develop the financial control mechanism in this respect.

The methodology of this analytical and application-oriented prospective research project includes the following steps:

1. The development of a method and flow model to determine the personnel and facilities shortage of the existing medical programmes.

The quantitative guidelines in this respect were derived from the 'Recommendations of the Sciences Council for structuring and developing medical research and education', and the proposed law on medical accreditation. Several parameters with respect to class size, teaching beds per student, curriculum load, etc., are calculated and projected, based upon the Baden-Württemberg experience. Emphasis is put upon teaching and clinical research requirements rather than upon basic research requirements. The parameters allow the specification for a ten-year period.

2. A rigorous cost-accounting to determine the financial needs of the objectives developed.
3. The development of an implementation scheme for some alternative strategies which could be adapted by the state authorities.

Some of the interesting conclusions obtained are:

1. Few of the flow model relationships are linear: economies of scale are preponderant.
2. A medical school of 200 students is an optimal size medical school from the financing point of view.
3. Though finances play an important role, the fostering of a highly qualified group of faculty and staff to succeed existing faculty and staff is equally important.
4. Rationalization of existing medical schools would allow for a 30 per cent decrease in costs.
5. Non-university hospitals should be involved in the teaching of medical students. A proposal for structuring these relationships is developed in the report.
6. The critical issue is not so much the factual shortage of medical personnel as the rate by which this shortage is caught up with.

The study is quite rigorous and provides for a balanced approach to medical school planning.

Following this methodological approach, three case-studies on particular states have been done during the period 1970-4 which were financed by the respective ministries of education of Niedersachsen, Schleswig-Holstein, and Nordrhein-Westfalen.

The planning period under investigation was 1970-80, the research staff included V. Göbel, W. Hardegg, H. G. Ruth, R. Koser, G. Schneider, M. Günther, and B. Zielinski (27, 28).

A new medical fee and hospital cost remuneration scheme Reorganization of medical and nursing care accounts, decreasing hospital costs and subsidies for investment purposes (Honorarreform und Krankenhaussanierung—Dienstleistungsverbände, Pflegesatzenkung, Neutrale Subventionen)

In 1969, the *Bochum-Ruhr University*, started a two-year research project to implement some new economic and social sciences methods in relation to hospital problems. The study's objective is to develop a theoretical and systematic as well as politically feasible plan for changing the existing hospital financing system.

The project was funded by the State Bureau for Research at Düsseldorf-Main. Investigators were Professor Dr Ph. Herder-Dorneich, W. Gerdemann, Dr W. Kötz and H. Niederfahrenhorst, all of the same department and J. Niggemann of the *Research Institute on Social Security and Income Politics* of the University of Cologne. The methodology of this analytical, basic as well as developmental research project consists of:

1. A descriptive and quantitative analysis of the actual hospital deficits.
2. An analysis of hospital sources of income, and hospital costs including personnel and non-personnel costs and a comparison between the dynamics of both money flows.
3. An analysis of the flows of tax money which goes into hospitals.
4. An analysis of existing recommendations to decrease the hospital deficits.
5. The development and analysis of alternative financing mechanisms—relating to hospital costs as well as hospital incomes.

The methods, models, and techniques which have been applied in this research are quite extensive and draw from quite a variety of disciplines for instance from cybernetics, conflict theory, economy of non-profitmaking organizations, etc.

A single alternative is finally selected in the study. This alternative identifies three cost centres and develops for each a particular financing mechanism:

1. Hospital investment costs: subsidies in the framework of a German hospital plan.

2. Personnel costs: these should be paid for by health insurance agencies from their income from subscription fees and settled after discussions between the insurance agencies themselves and representatives of the hospital personnel organizations.

3. Non-personnel related hospital operating costs: these are paid for by health insurance agencies from their income from subscription fees and are settled after discussion between the insurance agencies and the hospitals.

The authors state that, according to the theoretical treatise worked out, this alternative promises best chances for a balanced hospital cost and medical fee remuneration system (30).

Regional hospital planning (Regionale Krankenhausplanung)

In 1970, Dr S. Bopp, student at the *University of Freiburg*, published her doctoral dissertation on regional hospital planning. This doctoral work was sponsored by the Research Society of Freiburg and advised by Professor Dr H. Müller and Dr V. Von Malchus.

The methodology of this analytical and developmental research consists of:

1. The problem definition of hospital planning in view of medical, sociological and legal prerequisites proper to Germany.
2. The cost-benefit analysis of two alternative hospital systems; the one being a network of hierarchically structured, small but easily accessible hospitals in the region, the other being a horizontal set-up involving one single large hospital—with its concurrent economies of scale—for the same region.
3. The development of techniques for optimal location of hospital facilities in the region in view of both hospital systems.
4. The development of a method and technique to determine hospital facility shortages in the region. The analysis, methods, and techniques of parts 2, 3, and 4 are based on actual data of the Breisgau region.
5. A comparative analysis of hospital planning in Germany, the UK, and USA.

This research endeavour is rather documentary, little analysis is included.

Some of its main conclusions, with respect to the German situation are:

1. Even by making abstraction of patient satisfaction, a horizontal hospital system (economies of scales) outweighs a vertical hospital system (accessibility and manageability) only if units of 200 beds or more are envisaged. This is not at all feasible for Germany because of historic developments.
2. A planning based upon inflexible, national, and compulsory bed planning guidelines is counterproductive and should be substituted for a flexible, systematic approach such as is prevalent in the USA and the UK (6).

Hospital planning in the north-western region of the Düsseldorf-Mettmann district (Studie zur Krankenhausplanung im Bereich des Nordwestlichen Teiles des Kreises Düsseldorf-Mettmann)

In 1972, the *Health Insurance Agency of Ratingen* started to investigate from its own funds and with its own staff the feasibility of a new hospital for the town of Ratingen.

The main reason was that a majority of the town population was insured by this single company. The methodology of this one-year research project is straightforward and very limited. Following a demographic projection and a survey of existing facilities and their utilization rates, an estimate is made of different services and the number of beds needed.

Some other services are also proposed on the basis of common sense and general desirability. Propositions are also worked out with respect to the role and the function which the competing hospitals should take in the event of a new hospital (9).

A projection of hospital bed shortage up until 1985 (Prognose des Bedarfs an Krankenhausleistungen für 1985)

In 1972, the *German Hospital Institute* started a six-month research effort to quantify the projected shortage of hospital beds and hospital facilities for the year 1985. The main investigator was S. Eichhorn.

The methodology of this prospective and developmental research is straightforward. Based upon the tentative formulation of some 'need' and 'utilization' parameters and their recent evolution, a projection is made with respect to the expected situation for the year

1985. Some recommendations for reconversion and reorientation of existing facilities are included (17).

A hospital plan for 1972 (Krankenhausplan '72—Krankenhaus Versorgung in Rheinland—Pfalz—Bestandsaufnahme und Planung)

In 1971, the *Ministry of Social Affairs, Health, and Sports of the State of Rheinland—Pfalz*—started a one-year research endeavour to develop a hospital plan for the year 1972. This descriptive and application-oriented prospective research was done by staff members of the Ministry itself.

The methodology of this project is straightforward:

1. An inventory of existing facilities.
2. An inventory of existing shortcomings, based upon statewide indicators, with respect to the availability of adequate facilities and with respect to the performance of the existing facilities.
3. A set of guidelines and recommendations which should be taken into account for the year 1972.

No new insights or policy recommendations have been developed in this study.

The pharmaceutical market and prescription drugs in the Federal German Republic: cross-national comparisons

In 1973, Dr R. K. Schicke, director of the *Task Force on Hospital Research of the Hanover Medical School* published the results of a research endeavour aiming at determining the socio-economic factors which influence the drug market in Germany.

The methodology of this descriptive and analytical research is based upon four approaches which are discussed by using available data on selected countries:

1. Drug expenditures and price level differences.
2. Differences among distribution patterns.
3. Differences in quality control and costs.
4. Differences in prescription levels and utilization levels.

The study concentrates on the development of hypotheses which influence the drug market in Germany.

**Toward social planning in developing countries—
indicators of social justice—method of health sector
analysis (Beiträge zur Sozialplanung in
Entwicklungsländern—Indikatoren der sozialen
Gerechtigkeit—Methode zur Analyse des
Gesundheitssektors)**

In 1972, Dr D. Schwefel of the *German Development Institute* published the results of a two-year study on the development of a set of indicators to assist in health care planning.

The methodology of this developmental and comparative research consists of:

1. The development of a three-dimensional system of indicators of social justice, satisfaction of basic needs, social quality, and social security.
2. The construction of a numerical index accordingly based upon an empirical comparison between Chile and Cuba.
3. The application of the proposed method in the area of health care planning: social justice is looked upon as the assurance of equal opportunity with respect to health and medical care.
4. A comparative analysis based upon the Turkish health care sector:
 - (a) National level: need and performance in view of the national development plan.
 - (b) Regional level: inter-regional comparison in terms of health status of the population and level of medical resources.
 - (c) Subsector level: a comparison of different health care programmes.

The methodology developed to check health care planning, priorities, and programmes concordant with national development is sound as demonstrated by the example of Turkey on which the same methodology is worked out in a step-by-step process (60).

**Health planning—the development of an information
system—A simple case-study in the Departamento
del Valle del Cauca, Colombia (Gesundheitsplanung im
Departamento del valle del Cauca)**

In 1972, Dr D. Schwefel of the *German Development Institute*, published the results of a one-year empirical study on the development

of a sophisticated health planning technique which solves some of the drawbacks of the CENDES-PAHO technique.

This CENDES-PAHO technique was developed by J. Ahumada in the Centre for Developmental Studies of the Central University of Venezuela in co-operation with the Pan American Health Organization.

Several researchers co-operated in this effort: V. Fink, R. Michalski, B. Rosenteil, H. Schmidt, H. Tantz, G. Wirth, and E. Schwefel. The methodology of this developmental and applications-oriented descriptive research encompasses the following steps:

1. The analysis of actual health care planning under two health care programmes which were running in the region since 1970 and 1971.
2. The development of some health care planning improvements in view of existing experience.
3. The development of a field experiment in Valle to apply this improved methodology.
4. The formulation of a linear planning model which incorporates the field results of 3 and the optimization of this model with a view to maximum programme achievement.
5. An analysis of the optimization results in view of data requirements, health priority preferences, uncertainty, etc.

This developmental research demonstrates the applicability of health care planning to sub-optimize the co-ordination between health care objectives and health care resources (60).

The drugs and prescriptions market in Germany (Der Arzneimittelmarkt in der BRD)

In 1972, V. Braun of the *Institute of German Industry* published the results of a one-year research project paid for by the Institute to investigate the drugs and prescriptions market in Germany.

The methodology of the descriptive and analytical developmental project encompasses the following steps:

1. An analysis of drug and prescription demand in Germany.
2. An analysis of drug and prescription supply in Germany.
3. An analysis of alternatives put forward by other organizations:
 - (a) Bauer proposal (Ministry for economy and finances).
 - (b) Liefmann-Keil proposal (p. 328).
 - (c) German Labour Union's proposal (p. 318).

(d) Proposal towards the development of patient co-operation.

The analyses themselves are rather superficial and are more geared towards the problem formulation rather than towards the formulation of solutions and an analysis of their implications (7).

Recommendations towards a new hospital financing mechanism (Neuordnung der Krankenhausfinanzierung)

In 1972, D. von Leszczynski was commissioned by the *Institute of German Industry* to investigate the impact of the new Hospital Financing Law of 1972.

The methodology of this descriptive and developmental research consists of:

1. A survey and analysis of previous hospital financing mechanisms.
2. An analysis of the particularities of the new law of 20 May.
3. An evaluation of the new law.

This research is rather documentary. Few hypotheses are checked or analysed. The evaluation is primarily polemic (42).

Hospital costs and medico-technical progress (Krankenhauskosten und Medizinisch-Technischer Fortschritt)

In 1970, the results were published of a one-year research project by K. Keldenich commissioned by the *Institute of German Industry*. This descriptive, analytical, and developmental project investigates the driving forces behind hospital cost increases looking at investment costs as well as running costs.

Several cost-pushing factors, nearly all related to medico-technical progress are identified and quantified.

Several recommendations for change are tentatively developed. Some of them are, however, highly debatable.

For instance it is hypothesized that shorter length of stays will decrease hospital costs (36).

ORGANIZATION-ORIENTED
HEALTH SERVICES RESEARCH (48)**Health policy in the Federal German Republic: an analysis and recommendations for change** (*Die Gesundheitssicherung in der BRD: Analyse und Vorschläge zur Reform*)

In 1970, the *Institute for Economy and Social Science of the German Federation of Labour Unions* received a two-year research grant from the federal direction of the Federation of German Labour Unions to formulate recommendations for change.

The research staff of this analytical, prospective, and developmental research project included Professor Dr E. Jahn, Professor Dr H. Jahn, Dr E. Krasemann, W. Mudra, Dr P. Rosenberg, and Professor Dr F. Rudolph. The projects methodology encompasses the following steps:

1. A qualitative and quantitative analysis of the actual structure of the health insurance system based upon existing data and facts. This analysis looks for the reasons behind existing shortcomings and functional discrepancies of existing institutions. The analysis itself centres around the different types of health care needed by all or particular group of individuals rather than on the different types of institutions or health care providers: preventive care, early diagnostic care, therapeutic care, ambulant care, institutional care, rehabilitation care.
2. Following this analysis, several recommendations for change are developed. These recommendations start from a description of the health systems objectives and pertain to the structure of the health care institutions, their co-operation, and the financing mechanisms involved.

The authors propose to abolish solo practice and foster group practice, based upon the need to have a regionally balanced network of medical care. The argument is as follows: solo practice induces general practitioners to concentrate in the city centre areas and to leave the suburbs and the rural areas unattended by medical care. Group practice is also the only way to implement organizationally and financially the new techniques of medical sciences in a co-ordinated way. Group practice is also the only way to get rid of the fee-for-service financing mechanism which results in a pro-

lification of unnecessary medical acts without any guarantee for up-to-date and effective diagnostic and therapeutic care. The research results were used, although not always followed, to develop the health care policy of the German Federation of Labour Unions.

Current problems of health insurance: a survey of different viewpoints (Aktuelle Probleme der Gesundheitssicherung: Eine Dokumentation)

In 1972, Harald Clade and Achim Seffen of the *Institute of German Industry* started a one-year research project funded by the Institute itself to report on and analyse the different viewpoints concerning health insurance and need for change.

This descriptive research gives:

1. A report of these different viewpoints.
2. A synopsis of each others critique.
3. A survey of the different hypotheses put forward.
4. A comparative analysis of differences and common elements (10).

Physicians and health care in a social security system: a comparison between Germany, England, and the USA (Ärzt und Gesundheitsversorgung im gesellschaftlichen Sicherungssystem Bundesrepublik Deutschland, England, USA).

In 1970, Dr R. Schicke, director of the *Task Force on Hospital Research of the Hanover Medical School* started to investigate the role of physicians and the health care system in relation to the social security system prevalent in Germany, England, and the USA. The methodology of this comparative and developmental research consists of a comparative analysis based upon the following topics:

1. A comparative characterization of the three social security systems.
2. The relative importance of the social security system in each of the three societies.
3. The role of the physician in each health insurance system.
4. Health care institutions and health care personnel in each country.
5. The role of the physician in each health care system.
6. Health care results and health care effectiveness in each country.

Some of the major conclusions obtained in this comparative research are:

1. The driving force in Germany is the insurance concept. This same concept is more influencing than the care concept, or the prevention concept. In England, care and prevention are the influencing variables rather than the insurance itself.

In the USA the main driving force is undoubtedly the private insurance rather than the social security, preventative, or curative medical care system.

2. The distribution of risk responsibility among the individual, the community, and society determines the financing mechanisms in use, rather than the other way around.

3. The German health insurance system favours the economically less powerful population groups. The English system shows no discrimination, the USA system finally favours the economically more powerful groups.

The USA system favours group practice as such, independent of the fact that it is institutionalized or not.

4. If the prospects for a higher level of medical care productivity are good in the USA and in England, this is not the case in Germany. A first cause of this is mentioned in 3, a second cause is generated by the fact that non-physician medical personnel is rather scarce in Germany and hardly favoured by the health insurance system (56).

Health insurance in Germany: important aspects for the general practitioner (Gesundheitssicherung in der Bundesrepublik Deutschland; Schwerpunkte aus der Sicht der frei praktizierenden Ärzte)

In 1973, the *Federation of German Associations of General Practitioners* published its report on a research endeavour done by a committee of its members on the analysis of the German health insurance system with respect to some aspects, important to general practitioners. The methodology of this descriptive, analytical, and application-oriented research consists of:

1. An analysis of the actual role of the general practitioner *vis-à-vis* his individual patients as well as society as a whole.

2. An analysis of general practitioner's medical practice.
3. An analysis of the relationship between general practitioners and medical specialists.
4. An analysis of the relationship between general practitioners and hospitals, especially in view of progress in medical technology.
5. An analysis of the general practitioner's role in preventive care, rehabilitation and social medicine.

This research is based on an analysis of actual facts and aims at identifying the major elements which have to be taken into consideration in any restructuring of the health insurance system (66).

Physician payment schemes (Systeme der Arztehonorierung)

During 1969, Dietrich von Leszczyński was commissioned by the *Institute of the German Industry* to start a nine-month research project funded by the Institute itself to investigate the different payment schemes existing in the German Federal Republic.

1. A historic survey of different schemes.
2. A survey of current schemes in use in the Federal Republic by the different types of insurance companies. The main types are identified:
 - (a) A fee-for-service payment scheme adjusted to the general wage index.
 - (b) A fixed fee-for-service payment scheme.
 - (c) A salary type payment scheme.

Advantages and disadvantages of the different schemes in use are analysed.

3. The development of an alternative payment scheme based upon actual costs incurred. The advantages of this scheme are worked out and include among others a detailed insight into the real costs of medical care on the condition that the cost control problem can be satisfactorily solved.

The author proposes that government should have the final decision-making power to determine physician payment because of the ethical aspects involved with respect to the well-being of the population as such (41).

Models of physician payment schemes in insurance-based medical care (Rationelle ärztliche Leistungserbringung in der Kassenärztlichen Versorgung)

In April 1972, Dr M. E. Pfeffer-Küppers from the *German Institute for Rational Medicine* started a one-year research project funded by the Federal Ministry on Labour and Social Affairs to investigate possible ways to rationalize the physician payment schemes in insurance based medical care.

Different groups of people (physicians, insurance companies, political parties, etc.) were interrogated with respect to their ideas about this same problem.

Subsequently, this developmental and analytical research project investigates and classifies different alternatives of physician group practices and medical centres and different possibilities to rationalize physician representation.

A survey of the different possibilities is reported.

Different hypotheses are postulated in this same respect, no test results are added however.

The author anticipates that a rationalization though politically very desirable is difficult for financial reasons. Medical care system pay-offs are also doubtful (49).

The Swedish regional health care system (Die regionalisierte Gesundheitsversorgung Schwedens)

In 1972, Dr R. K. Schicke, director of the *Task Force on Hospital Research of the Hanover Medical School* started to investigate during a six-month period the Swedish health care system. The methodology of this descriptive and comparative research project concentrates on a comparison and analysis of the Swedish regional health care system with respect to (1) its financing mechanisms, (2) its organizational structure, and (3) its functional integration.

The comparison is made primarily with respect to the USA, and Germany (55).

Organizational metamorphosis of the health services in England since the beginning of this century (Der Organisatorische Wandel der Gesundheitsdienst in England seit Beginn dieses Jahrhunderts)

In 1973, Dr R. K. Schicke, director of the *Task Force on Hospital Research of the Hanover Medical School* started to investigate during a six-month period the basic trends which could be observed with respect to the organizational evolution of the English health services system. The methodology of this analytical and descriptive research effort is an analysis of the organizational schemes in use during the three periods, 1914-41, 1948-73, and 1974 and beyond.

The author observes that the trend towards an organizational integration of both the intramural and the ambulatory services and the relocation of responsibilities in this respect, also results in the long run in an organizational set-up which integrates local decision-making power and influence (54).

Analysis of problems and critical areas for reform of the German health care system (Problemanalysen und Reformschwerpunkte für das Gesundheitswesen der Bundesrepublik Deutschland)

In 1971, the *Research Group on Systems Research from the Ruprecht-Karl University of Heidelberg* received a two-year research grant from the Federal Ministry for Youth, Family, and Health Affairs to investigate problem areas in the health care system and to formulate recommendations in this respect.

The research staff was advised by the Ministry's Task Force on Health. The methodology of this analytical, prospective, and developmental research consisted of a two-stage adapted Delphic inquiry among a sample of health care experts.

The first stage deals with the future aspects and the driving forces of the health care system.

The second stage deals with the experience of these experts in a set of selected topics such as general health care policy, clinical care, paramedical education, health care statistics, etc.

The report is written up as a set of recommendations for each of these specially selected topics (64).

Is modern health care a Utopia? (Ist Moderne Medizin Utopie?)

Mid 1971, the *Medical Centre Group* started to investigate the organizational, technical, pedagogic, and didactic prerequisites needed in order to establish a modern health care system.

The project staff included A. Fehler, J. Fehler, Dr H. Leich, and W. Woder, all members of the group.

The methodology of this one-year analytical, basic, and prospective research project consists of:

1. The development of a conceptual health care model based upon an analysis of the existing system.
2. Based upon an analysis of discrepancies between the projected and the actual situation, different problem areas are identified and investigated.

More especially:

- (a) The organization of the projected health care system.
- (b) The legal framework of the projected health care system.
- (c) The education needs emanating from the projected health care system, involving the care providers as well as the consumers.

Though this basic research looks quite theoretical, the authors have nevertheless paid great attention to the implementation difficulties which are anticipated.

They propose and work out a directional and adaptive strategy in order to implement the system developed. This research has received much political attention (23).

Preventive health care or patient care: consequences with respect to the structure, the management, the organization and the information requirements of a health care system (Gesundheitsfürsorge oder Krankenversorgung: Konsequenzen für Struktur, betriebliche Gliederung, Organisation und EDV-Einsatz)

In 1969, the *Medical Centre Group of Cologne* started a one-year research project to investigate the basic differences for managerial purposes between a patient care-oriented health care system and an integrated preventive health care.

Main investigators were J. Fehler, C. Koch-Kandziora, and N. Neuhaus.

The methodology of this analytical, basic, and prospective research project consists of:

1. A problem formulation based upon an analysis of shortcomings of the existing health care model.
2. The development of a basic health care model with emphasis on the managerial requirements of the projected health care model.
3. An analysis of information and data requirements emanating from the projected health care model.
4. An analysis of managerial and organizational alternatives and their consequences with respect to the implementation of the projected health care systems.

The authors started from a patient point of view rather than from an institution point of view. It is argued that institutional care is subordinate to the total health care system. Based upon this, great emphasis is put upon the management of the total system rather than upon the management of its constituent institutions.

Though the research is primarily theoretical a solid logical framework for further analysis with a view to the management of health care is worked out (24).

Problems of preventive health care (Probleme der Gesundheitsfürsorge)

Beginning in 1970, Harald Clade of the *Institute of German Industry* started a one-year research project funded by the Institute itself to investigate the possible effects of the 'Second New Health Insurance Law' which incorporates to a much greater extent preventive medical care into the existing medical care insurance programmes.

The methodology of this descriptive and prospective research project consists of:

1. A historic survey of costs incurred with respect to preventive medical care on the basis of:
 - (a) Insurance laws pertaining to partially preventive medical care.
 - (b) Contractual preventive medical care programmes.
 - (c) Voluntary preventive medical care programmes.
2. An account of the recent experience with respect to the first two types: a genital carcinoma preventive programme for women of age 30 and above; prostate and rectum disease prevention programme for men of the age of 45 and older.

The author concludes on the basis of the foregoing analysis that preventive programmes funded by 'health insurance law' should:

1. Be limited to those diseases which involve direct and immediate treatment.
2. Always be tried out very carefully in pilot experiments because of the costly organization and methodological problems involved.
3. Be followed up very carefully with respect to their efficiency by use of a cost-benefit analysis (11).

Research on health care and hospital Organization (Kurforschung und Krankenhausstrukturforschung)

In 1971, the *Department of Medical Sociology and Social Psychology* of the University of Ulm, published the results of a one-year research endeavour on the factors of treatment which influence the effectiveness of health care. The main investigators were P. Schmadel and V. Troschke. The project was directed by Professor Dr H. Enke.

The methodology of this analytical and developmental project consists of:

1. An empirical study to determine and evaluate the factors which influence health recovery.
2. An analysis of the hospital organization with a view to investigating how this organization favours or disfavors these factors.
3. An analysis of existing health care policy to investigate how this policy influences the hospital organization and the factors identified. Several policies and health recovery influencing factors are identified.

Extended care facilities (Nachsorgekliniken)

In 1970, the Swiss consulting firm *Prognos AG* was requested by Lübke KG Rheda-Westfalen, to investigate the feasibility of extended care facilities for the German hospital care system. The research staff of this one-year project included R. A. Bischoff and Dr I. Bischoff. The methodology of this descriptive and prospective research project includes the following steps:

1. An extended survey of the German hospital system and its operations: beds per thousand, admissions per thousand, length of stay by medical specialty, distribution of patients by intensity of care received, hospital costs, etc. Some trends are identified.
2. A demographic projection for the year 1985.

3. An analysis of existing extended care facilities primarily through a literature survey of USA experiments and discussions with hospital organizations and experts.

This analysis allows for the identification of the characteristics of a projected extended care facilities system based upon either actual historic data and experience or wishful thinking.

4. An economic analysis and projection of an integrated acute hospital care—extended care facilities system based upon the data of 1 and 2 and the system characteristics developed in 3. As one could anticipate quite some cost savings are projected, for example 27 per cent with respect to investment costs.

The basis of the whole research argument is that extended care facilities allow for more intensified use of acute care hospital facilities in number of patients treated as well as in productive use of medical equipment. This intensification would result in economies of scale hence cost savings for the total system (5).

A medico-statistical study of medical care problem areas based upon the experience of the Medical Care Research Centre of Cologne (Medisch-statistische Studien über Versorgungsmedizinische Schwerpunkte, dargestellt am Patientengut der Versorgungsärztlichen Untersuchungsstelle Köln)

In 1971, Professor Dr W. Bolt of the *Department for Factory Health Care and Community Medicine of the University of Cologne*, published the research results of a study on the patient statistics of the Medical Care Research Centre in Köln.

This study is financed through the Medical Care Research Centre of the University of Cologne.

The methodology of this comparative and prospective research consists of:

1. The statistical analysis of the data of the medical records (these records also include socio-economical data).
2. The listing of particular problem areas.
3. Recommendations for change.

The study is primarily descriptive though a research proposal for a prospective follow-up is included.

The pharmaceutical industry and the future development of social health insurance

In 1970, the *Institute for Social and Economic Politics of the University of the Saar*, started an eighteen-month research project to investigate the pharmaceutical industry with a view to the analysis of alternative future policies and developments in the framework of social health insurance.

This project is funded by the Federal Ministry of Labour and Social Affairs. The project's investigators were P. Ruhr, H. Rogusch, Professor Dr E. Liefmann-Keil, and T. Grützke.

The methodology of this analytical, descriptive, and developmental research project consists of:

1. A descriptive analysis of the many regulations which influence the pricing, and the product mix of pharmaceutical drugs in the German market influenced by social health insurance.
2. The data collection to quantify the market forces with respect to pharmaceutical products in Germany. The industry itself, the drug stores as well as the consumers of different social health insurance programmes are investigated.
3. An analysis of different policies and strategies which have been developed in countries such as the USA, the UK, Switzerland, and Sweden to regulate or influence the pharmaceutical industry.
4. An analysis of trends and developments with respect to the pharmaceutical industry in Germany.
5. The development of alternative policies and recommendations and the selection of a particular alternative.

For phases 4 and 5 help was sought from a committee of experts who brought in the political expertise needed in order to develop a viable alternative. This alternative is discussed in great length (40).

The provision of medical care, drugs, and other therapies, especially those provided by opticians and paid for by public health insurance (Die Geschichte der Arzneimittelversorgung in Gesetzlichen Krankenversicherung)

In 1973, the Institute for Politics and Public Law of the *University of München* started a one-year research project to investigate the legal directives and the legal constraints with respect to the provision of medical care, drugs, and other, especially optical, therapies paid for by public health insurance.

The main investigator of this project, which was partially funded by the Opticians' Society, was Professor Dr H. Zacher.

Its methodology consists of an analysis of existing public health insurance regulations, their lines of action, their implications, their constraints, and their shortcomings with respect to the provision of medical care.

Special emphasis is put upon the directives with respect to the provision of therapeutic resources such as drugs and optical lenses (68).

A report on psychiatric care in Bayern, including the education of personnel

In 1971, a team of professionals of the *Clinic for Psychiatry and Neurology of the Ruprecht-Karl University of Heidelberg* started to investigate the state of affairs with respect to psychiatric care and the education of psychiatric care personnel in the state of Bayern. Main investigators of this self-initiated project are H. Dilling and Kunze. The project director is Dr D. Von Zerssen.

The methodology of this descriptive and developmental project consists of:

1. A listing of all psychiatric care institutions.
2. A listing of all health personnel educational institutions.
3. A statistical analysis with a view to the development of recommendations for change.

No results are as yet published.

Analysis of a rehabilitation programme (Strukturanalysen der Rehabilitation)

In 1969, the *South German Union of Woodworkers*, started a three-year research effort to analyse the incidence of rehabilitation needs among woodworkers and to evaluate the rehabilitation care which they receive.

Chief investigator of this descriptive and application-oriented research was W. Nickl. The research itself was sponsored by the Federation of Labour Unions.

Its methodology is straightforward and consists of:

1. A survey of the type and quantity of rehabilitation needs among different classes of woodworkers.
2. An analysis of medical facilities with respect to rehabilitation care.
3. An analysis of the history and an analysis of the follow-up of rehabilitation patients (48).

The single-class hospital (Das klassenlose Krankenhaus)

In 1970, Harald Clade of the *Institute of the German Industry* started a nine-month research effort, funded by the Institute itself, to investigate the advantages and disadvantages of a single-class hospital. The methodology of this descriptive and developmental research encompasses three steps:

1. A projection is made, based upon actual financial data, of what costs would be involved if class differences in hospitals (private patients, ward patients, etc.) were abolished.
2. Analysis of actual hospital statistics (morbidity and mortality statistics primarily) to look for care differences linked to class differences. No care differences could be found.
3. The experience of some pilot single-class hospitals is investigated with respect to: medical care given; physician payment; nursing care given.

The author concludes among other things, that a single-class hospital would be on the whole much more expensive to operate while no medical care improvements could be realized (12).

The single-class hospital (Das klassenlose Krankenhaus—eine Zwischenbilanz)

In 1969, M. Woythal of the *State Government at Hanau-Main* was requested by his State Government to investigate the feasibility of single-class hospitals in the region and to develop recommendations in this respect. The methodology of this two-year research consists of:

1. An analysis of existing hospitals with respect to their organizational difficulties, their performance standards and the public's opinion about them. This analysis is based upon rather superficial data and newspaper articles.
2. The development of a set of guidelines (22 in all) in order to implement the single-class hospital. These guidelines also deal with the organizational structure of the hospital as well as with the representation of different interest groups in the hospital.

The concept of a single-class hospital was a rather popular issue in 1969-71.

This not so rigorous research is an attempt to try to justify some of its elements.

A model for an integrated health care system for the new town of Cologne-Chorweiler (Modell einer Integrierten Gesundheitsversorgung für die Neue Stadt Köln-Chorweiler)

In 1971, the *Medical Centre Group of Cologne* started to investigate the feasibility of an integrated health care system for the new town of Cologne-Chorweiler.

The research staff of this developmental, analytical, and prospective one-year research project was constituted by the group's own staff. Its methodology consists of:

1. The problem formulation.
2. The development of a theoretical health care system based upon: ambulatory care; institutional care; preventive care; and their integration.
3. The implementation of the same model to the town of Cologne-Chorweiler, based upon the existing situation and a search for a 'path of least resistance'.

Though special attention is paid to the organizational problems of the integrated health care system envisaged, the research project as such is still mainly theoretical and goal-formulation oriented (44).

Hospital co-operation: organizational and juridical opportunities (Krankenhausarbeitsgemeinschaften—organisatorische und rechtliche Gestaltungsmöglichkeiten)

In 1972, H. Schmitt of the *German Hospital Institute* started to investigate the organizational and juridical opportunities of hospital co-operation.

The methodology of this developmental and analytical limited research endeavour consists of the following steps:

1. A survey of co-operation possibilities.
2. A goal-oriented analysis of co-operation.
3. Analysis of organizational possibilities.
4. Analysis of the juridical implications including the tax regulations.

The author concludes that though co-operation is certainly desirable, good faith is not at all sufficient: contracts must be worked out in great detail (58).

Management principles of hospital admission procedures (Betriebsorganisatorische und technische Grundsätze der Krankenhausaufnahme)

In 1968, S. Eichhorn, director of the *German Hospital Institute*, started a project to investigate the general management principles which should determine hospital admission procedures.

The methodology of this application oriented research includes the following steps:

1. Model of types of hospital admissions and the identification of each type's influence upon the hospital's functions.
2. Statistical data to highlight the same problem area.
3. Admissions by the medical staff including the problem of referrals.
4. Admissions by the hospital itself.
5. Organization of the admission department.

This research sketches general outlines and develops some general recommendations (18).

Length of stay analysis in acute care hospitals (Struktur der Verweildauer im Allgemeinen Krankenhaus)

In 1968, the *German Hospital Institute* started to publish the results of a two-year pilot study in twelve acute care hospitals with respect to the length of stay which could be observed in the different medical departments of these test hospitals.

The main investigators of this descriptive and retrospective research were J. Fehler, H. Neuhaus, and G. Kandziora. The methodology of this descriptive research is straightforward.

The results of the actual observations are tabulated, no further analysis is included (25).

Structure and organization of medical and nursing care (Struktur und Organisation der ärztlich-pflegerischen Versorgung)

In 1972, S. Eichhorn, director of the *German Hospital Institute*, and Professor H. W. Müller of the *Düsseldorf University* started to investigate the advantages and disadvantages of the current German medical and nursing care system.

The methodology of this analytical and prospective research consists of:

1. Current trends in the hospital and health care system.
2. Actual organization of the German hospital and health care system.
3. Disadvantages of the current disintegrated hospital and health care system.
4. Opportunities for improvement.
5. Advantages of a more integrated approach with respect to hospital care, integrated ambulant care, preventive care.

The results of this theoretical piece of research are primarily of a hypothetical nature, few supporting data are supplied, no propositions are tried out.

As such its research content is limited (19).

An analysis, development, and quantification of alternative nursing unit policies (Analyse, Entwicklung und Bewertung von Alternativen für den Normalpflegebereich des Allgemeinkrankenhauses)

In 1972, W. Mayer published his doctoral dissertation on the analysis of alternative policies for nursing unit management. This dissertation was worked out at the *Free University of Berlin*, during the years 1971 and 1972.

The methodology of this analytical and developmental research consists of:

1. A characterization of the nursing unit from a historic and sociological point of view and a formulation of nursing unit management problems.
2. An analysis of nursing unit management policies in function of the number of patients, spatial requirements, function, and role of the particular unit with respect to the rest of the acute care hospital.
3. The development of a set of basic nursing management rules and a set of flexible rules determined by the requirements proper to each individual nursing unit.
4. An analysis of trends and future perspectives with respect to nursing unit management.

This primarily sociological research develops several recommendations (43).

The role of the head nurse in the opening of a new hospital (Aufgaben der Oberin bei der Inbetriebnahme eines neuen Krankenhauses)

In 1968, C. Ramge, of the *German Hospital Institute* started a short-term research effort to formulate her experience of the head nurse's role in the opening of a new hospital.

The methodology of this descriptive and application-oriented research involves the formulation of the problems involved with respect to:

1. The motivation and education of the nursing staff.
2. The detailed description of new job schedules.
3. The personnel motivation before, during, and after the opening.

This research is limited in the sense that it is solely based upon

personal experience and as such cannot be replicated, which is essential to any scientific research effort (51).

Organizational structure and physical layout of nursing units (Organizatorische und Bauliche Struktur des Pflegebereiches)

In 1971, the *German Hospital Institute* published the results of its survey and analysis of patient loads on different nursing units of its member hospitals. Chief investigators were C. Ramge and H. Wunderlich. The methodology of this descriptive and developmental research consists of:

1. The identification of trends in the organizational structure and physical layout of nursing units in view of recent medical and hospital care developments.
2. The distribution of different types of patients over different hospital departments.
3. Recommendations to staff minimal care and intensive care units.

Though this research is not very elaborated, its pragmatic approach is geared towards dealing with actual problems (52).

A survey of supply and demand of hospital personnel

In 1971, the *Committee on Personnel of the German Hospital Association* started with a three-year effort to develop and implement some solutions to the problem of an increasingly more important shortage of nursing personnel in Germany.

The responsibility of this project rested with Professor Dr H. Müller. The project as such has been discussed elsewhere (p. 337).

Part of this project's strategy involved the elaboration of a regional system to regulate and co-ordinate supply and demand on the nurses' labour market. This part is reported on here.

The methodology of this prospective and descriptive applications-oriented research endeavour is straightforward. About twenty co-researchers of the Association are constantly involved in gathering the data necessary to compile the situation on the labour market and in identifying and adjusting the major discrepancies involved. No results or evaluation of this research effort are as yet published.

The nurse shortage in German hospitals (Der Pflegepersonalmangel in den Krankenhäuser in der BRD)

In 1971, Dr Werner Kötz of the *Institute of Social Medicine and Medical Sociology of the Ruhr University at Bochum*, was commissioned by the Institute of German Industry to start a one-year research project, to investigate the actual situation with respect to the number, qualification, etc., of hospital nurses in order to improve the actual shortage which was developing.

The methodology of this primarily descriptive research project involves:

1. A description, reported in numerous tables, of the actual situation about the development of nursing personnel in German hospitals.
2. An analysis of the implications of the nurse shortage upon the quality of care provided.
3. Recommendations for change. Different recommendations are put forward. The main problem, however, is how to determine priorities and responsibilities for implementation, financing, and co-ordination of the measure proposed.

This research reports on the actual problem. No policy decisions though are developed (38).

Shift work in patient care (Schichtdienst in der Krankenpflege)

In 1971, the *German Hospital Institute* published the results of its limited research effort on the analysis of patient care organization. Principal investigator was C. Ramge.

The methodology of this descriptive and applications-oriented research consists of:

1. A description of feasible schedules of working hours in patient care.
2. The development of criteria to determine job schedules in patient care. A committee of experts was brought together to develop these.
3. The development of four possible and feasible alternatives of working hours schedules. Each time organizational changes are needed in order to implement these alternatives.

A campaign strategy to attract nursing personnel (Gemeinschaftswerbung für den Nachwuchs in Krankenpflegeberufen)

In 1971, the Committee on Personnel of the *German Hospital Association*, started with a three-year research effort to develop and implement some solutions to the problem of an increasingly more important shortage of nursing personnel in Germany.

The main responsibility for this very much applications-oriented and prospective research endeavour rested with Professor Dr H. Müller of the same Association.

The methodology of this research consists of the development of a strategy partially based upon the results of the research on nursing recruitment techniques of the Research Group on Political Psychology and Communications Sciences (p. 354).

The strategy worked out has the following constituent elements:

1. The publication of a brochure to highlight the attractiveness of the nursing profession. This brochure has to be distributed among hospital personnel managers and educational consulting agencies.
2. The elaboration of a regional system to regulate the job market and co-ordinate the supply and demand of particular types of nursing and hospital personnel.
3. A public relations campaign in the mass media.
4. The organization of some 120 three-day seminars geared toward hospital directors (administrative, personnel, nursing, medical, etc.) in order to instruct them on some of the most elementary principles of personnel management.

The campaign has been successfully started and is still going on. No evaluation is as yet published (46).

Research into the objectives and the activities of the nursing profession (Untersuchung zur Erfassung der Aufgabenstellungen und Tätigkeiten im Krankenpflegeberuf)

In 1973, Professor Dr H. Müller, of the *German Hospital Association* started a major research effort to develop a renewed nursing.

This analytical, developmental, and application-oriented three-year research project is funded by the German Hospital Association to the projected amount of £130,000.

The anticipated methodology includes the following steps:

1. A survey by way of an interview technique of patients, nursing personnel, head nurses, and physicians with respect to: their activities; their objectives in view of nursing care.

A checking procedure based upon the international literature will be included.

2. The development of a new nursing curriculum based upon the results of: 1 and the expertise of different professionals including systems scientists and teachers.

3. Some field experiments in which the proposed curriculum would be tried out and evaluated.

No results have been published so far (47).

Job-analysis and optimal manpower deployment in hospitals (Beschäftigungslage und optimaler Einsatz von Arbeitskräften in Krankenanstalten)

At the end of 1971, the *Institute for Research on Socio-Economic Structures* of Köln, was requested by the Federal Ministry on Labour and Social Affairs to investigate, during a two-and-a-half-year research project, possible ways to improve the actual labour situation in hospitals in view of an increasingly more manifest shortage especially of nurses and nursing aids.

The research staff was directed by L. Alex, and also included H. J. Pohl and A. Billig. The research project itself builds upon the results of the research project on the situation of the labour market with respect to nursing personnel of the EMNID Institute (p. 353). The methodology of this analytical and applications-oriented project encompasses the following steps:

1. The identification of possible factors of influence with respect to the actual hospital labour situation.

2. A general survey by way of a questionnaire of the labour situation in a random sample of hospitals.

3. Based upon the results of a selection procedure obtained through a factor analysis of results obtained in 1 and 2, an in-depth study of some selected hospitals. This in-depth study concentrates on some ongoing experiments, with respect to overtime and on-the-job training.

4. An interview of a sample of nursing personnel in the hospitals selected for the in-depth study. Emphasis is put here upon motives

for job turnover and the motivation to leave the hospital field altogether.

The analysis of the data collected results in many conclusions. Following these, some recommendations are put forward in order to improve the hospital manpower situation. These recommendations pertain to:

1. Changes in the working conditions and the internal hospital organization.
2. Changes with a view to a closer co-operation between hospital personnel (including the medical specialist staff) and hospitals themselves on a regional basis (2).

Nursing education (Krankenschwestern in der Ausbildung)

In 1971, the *Institute for Social Medicine and Epidemiology* of the Federal Health Bureau and the *Institute for Social Research* of Frankfurt University started a one-year research project to investigate, develop, and formalize the nursing education programme.

Main project investigators were Dr Pinding, B. Kirchlechner, J. Munstermann, and J. Thoma.

The methodology of this analytical and developmental research project consists primarily of the formulation of nursing education goals from a sociological point of view.

The patients' needs as well as the nursing profession's needs are taken into consideration.

Few empirical data are provided in this theoretical and developmental study. The study, however, has had quite some impact because of the research institute involved.

Medical school curriculum and regional patient care: a model for Osnabrück

In 1973, the *Institute for Educational Research* of the University of München received a one-year research grant from the Osnabrück University to develop a tentative model for the medical school educational programmes in view of the needs of the Osnabrück region.

The research staff included H. Kapuste, R. Schuster, and E. Sturm. The methodology of this analytical, developmental, and prospective research project encompasses the following steps:

1. A cross-sectional and longitudinal socio-demographic analysis for the Osnabrück region.
 2. An analysis of the medical care system with respect to (a) the number, the age distribution, the regional distribution, etc., of physicians and (b) the costs of medical care in the Osnabrück region (primary care, hospital care, ambulatory care).
 3. A projection of (a) the optimal physician and (b) the optimal system of physicians (including information flows, functional distribution, etc.).
 4. A projective model of the total regional medical care system including the role and integration of specialist medical care.
 5. A projection of medical school capacities and costs.
 6. A brief outline of steps which are necessary for implementation.
- This research is primarily theoretical and as the authors themselves note (a) the curriculum model and regional medical care model still show some flaws and (b) the implementation problems have not been tackled.

The formulation of a medical school curriculum based upon the patients' expectations and the image of the medical profession (Aufgaben und Bild des Arztes aus der Sicht der Patienten als Mittel zur Formulierung von Lehrzielen)

In 1971, the *Institute for Research on Professions* of the University of Cologne started a one-year research project in order to recommend changes for the medical school curriculum. The project's investigators were Dr W. Kaupen, Dr H. Kaupen-Haas, Dr R. Kunzel, and G. Wessels. This project is a follow-up on the project 'Stability and trends in the level of physician authority: a sociological exercise in physician-patient relationship analysis' reported elsewhere (p. 351). However, the methodology of this analytical and developmental project goes somewhat further. The medical school curriculum indeed as formulated is not only based upon an analysis of physician-patient relationship but also upon legal constraints, with respect to the physician's diagnostic and therapeutic competence, the legal norms in this respect and the medical knowledge of the population.

Several recommendations for changing the medical school curriculum are included.

Inter-hospital comparison of hospital management statistics (Betriebsvergleich Deutsches Krankenhaus)

Since its foundation the *German Hospital Institute* has sustained a continuing effort to develop a uniform information system for management statistics and to use these statistics in a comparison of a number of its associated hospitals.

The methodology of this inter-hospital comparison is straightforward. Continuous effort is still shown by the Institute to improve the system. Though the data as such are not published, frequent reference to the system is made in other research efforts.

A methodology towards the development of a German hospital index (Methodik zur Erarbeitung eines Deutschen Hospital Index)

In 1973, the *Institute for Social and Economic Research or Infratest* started a two-year research project to develop a hospital index. This index, which should be periodically compiled and published should be geared towards applications in the fields of health policy development, medical sociology, and health economics and should indicate and identify changes or trends relevant for each of these disciplines.

This project is funded by the German Hospital Association, the German Hospital Institute, the Association of Hospital Directors, and the Association of Hospital Medical Directors.

Principal investigator of this analytical and descriptive prospective and developmental research project is D. Von der Recke.

Its methodology consists of the development and implementation of a statistical sampling technique which has to fulfil the following criteria:

1. The sampling technique must guarantee a representative sample and must ensure continuity and comparability of the periodic data.
2. The sampling technique has to be sensitive enough to indicate as well as to identify important changes.
3. The relationships among the singular indicators on which the index is based should be identified, meaningful, and stable with respect to periodic compilation.
4. The costs of data gathering and index compilation should be within acceptable limits.

The Institute is still trying out different alternative indexes. No final results are as yet published.

A survey of electronic data-processing applications in German hospitals (Umfrage der Deutschen Krankenhausgesellschaft zum Stand der EDV-Anwendung und zum Rechnungswesen im Krankenhaus)

In 1973, the *German Hospital Association* started with a survey and an analysis of actual electronic data-processing applications in its member hospitals.

The research staff of four co-researchers is under the directorship of Professor Dr H. Müller.

The methodology of this one-year descriptive and comparative developmental research consists of:

1. A survey of EDP applications by way of a questionnaire.
2. An analysis of these applications with a view to the elaboration of general guidelines.

No results are as yet published.

Electronic data processing in medicine, state of the art: future developments (Elektronische Datenverarbeitung in der Medizin-Stand und Entwicklung)

In 1971, the *Sub-Committee on Medical Epidemiology and Social Medicine* of the German Research Society published its findings and guidelines with respect to the use and possibilities of electronic data processing in the medical field.

The principal researcher was Professor Dr K. Uberla. Many researchers from various German universities have contributed to this work.

The methodology of this descriptive, prospective, and applications-oriented research consists of:

1. A descriptive evaluation by the research staff of the different pilot experiments which have been running in Germany.
2. A comparative analysis, also with other European countries, to identify the major opportunities and the major shortcomings which can be anticipated.
3. The development of a short-term as well as long-term strategy in order to implement the research findings.

The individual medico-technical applications of electronic data processing have been looked at as well as the applications with respect to the management of health services (65).

A report on the feasibility of data processing in medicine (Studie über die Anwendung der Datenverarbeitung in der Medizin)

In 1971, Professor Dr B. Schneider of the *Department of Biometry of the Medical University of Hanover* received a one-year research grant from the Federal Ministry for Education and Sciences to develop a strategy for data processing in the medical area.

The methodology of this descriptive, analytical, and applications-oriented research project, which was supervised by quite an extensive research advisory committee, encompasses:

1. A survey of the current status of data processing in medicine.
2. A trend analysis of the evolution of medical sciences.
3. A plan for the development of data processing in medicine (long-term and medium-term).
4. Steps necessary in order to reach the goals defined above (see 3) with respect to: research, technological development, pilot projects.
5. Recommendations in this respect: specific research projects, specific technological development projects, specific pilot projects.
6. A cost evaluation of the projects implied in the recommendations.

This report constituted the basis on which the Federal Ministry for Education and Sciences determined its policy with respect to data processing in the health care area (45, 59).

Organization and integration of hospital libraries

In 1972, S. Eichhorn, director of the *German Hospital Institute* received a £4,100 one-year research grant from the German Library Association and the Ministry of Research to investigate ways in which hospital libraries could be integrated.

The research staff included F. Kirfel and Schmidt-Jensen.

The methodology of this analytical and developmental project encompasses the following steps with respect to each type of library identified:

1. Questionnaire to identify library needs.

2. Expert opinions and analysis of these.
3. The development of recommendations for change.

The four types of libraries looked at are:

1. Medical library.
2. Patient library.
3. Administrative library.
4. Nursing library.

Hospital morphology (Morphologie der Krankenhäuser)

In 1970, the *German Hospital Institute* published a research effort with respect to the application of morphological techniques to hospital construction projects.

The main investigator was R. Sahl of the same Institute. The methodology of this analytical and developmental research is an analysis of hospital construction problems from the point of view of a morphological analysis. The author stresses the need for flexibility but few recommendations beyond the theoretical level are included.

No empirical data are included nor are any new concepts or techniques developed (53).

Organization of decentralized health services in

Latin America (Organización de servicios descentralizados de sanidad pública en América Latina)

In 1972, B. Breuer and Dr D. Schwefel of the *German Development Institute* published the results of a comparative and comprehensive research on the state of the art of health services organization in Latin America.

Many documents edited by the researchers are based upon the discussions of an international seminar at the German Foundation for International Development.

Special attention is paid to health planning, its technocratic and institutional shortcomings and to endeavours to regionalize Latin American health systems.

Popular participation and an integration of health policies with nutritional and agricultural policies are stressed (8).

Health insurance and conventionalized physicians (Vertrauensärztlicher Dienst und Krankenversicherung)

In 1970, K. Fröhlingsdorf of the *Institute of German Industry*, published the results of a one-year research project commissioned by the Institute and dealing with the role and function of the physician who has agreed to co-operate in the health insurance scheme.

The methodology of this analytical and descriptive research project encompasses the following steps:

1. The development of medicine within the framework of the health insurance agencies: before 1945, after 1945, after 1970.
2. The reality of medicine in which fees are agreed by convention as experienced by employees on sickness leave as they are 'controlled' by these conventionalized physicians.
3. A critique of current practice, special attention is paid to the leading role which the physician adhering to a conventional scheme is supposed to have with respect to the rehabilitation of employees on sickness leave.
4. Some recommendations for reform.

The report has a strong juridical emphasis. Little evaluation of current practice is presented primarily due to the recent character of the new regulations, with respect to the practice of medicine which fees are agreed according to convention (26).

Reforms long due: co-operation and cost reimbursement in health insurance (Überfällige Reformen: Kooperation und Kostenerstattung in der Krankenversicherung)

In 1971, A. Seffen of the *Institute of German Industry* published the results of a one-year research project on the evaluation of the second health insurance law of 1971.

The methodology of this analytical and developmental research project encompasses following steps:

1. An analysis of actual experience with the second health insurance tax of 1971.
2. An analysis of the driving forces behind the 'membership battle' which was provoked by this second health insurance law.
3. An analysis of actual reforms introduced by this same law:

(a) An improvement in co-operation with private health insurance.

(b) The choice between 'fee-for-service' and 'cost reimbursement'.

This research is primarily juridical and aims at formulating new proposals for change.

Little evaluation or quantitative analysis is included (62).

SOCIOLOGY-ORIENTED HEALTH SERVICES RESEARCH

The image of the German hospital (Das Image des deutschen Krankenhauses—Ergebnisse einer allgemeinen Bevölkerungsbefragung der Institut für Demoskopie—Allensbach)

In 1969, the *Institute for Survey Research* was granted £5,500 for a ten-month research project from the Association of German Hospital Administrators to investigate the public's opinions about the hospital as a socio-political institution. The research staff was directed by Professor Dr Noelle-Neumann.

The methodology of this comparative and applications-oriented research project included the following steps:

1. The development of a questionnaire to measure the public's attitudes and opinions about the hospital as such, the hospital's medical sciences approach, private patient care, etc., and the hospital costs.

Some of the questions in the questionnaire had been tried out before in 1958. In this way a trend analysis with respect to some of the sub-hypotheses was possible.

2. A sample of 2,000 adult persons representative for the German population were interviewed by aid of this questionnaire.

3. The statistical analysis of the data (stepwise linear regression and factor analysis).

Many conclusions are worked out including some interesting ones with respect to public opinion about hospital costs and public opinions about hospital care class differences, and some trend differences observed between 1958 and 1970 (33).

Opinions about hospitals (Image Krankenhaus)

In 1969, the *Institute for Survey Research—Allensbach* started to investigate the public's opinions about the hospital as a socio-political institution. This project is discussed elsewhere: 'The image of the German hospital' (p. 346).

The present project is a sub-project worked out by G. Schmidtchen which reports on part of the statistical analysis of the data collected. Topics addressed in the present project are the public's opinions about its health status, its hospital stays, and its opinions about hospital internal relations.

People's opinions about psychiatric and medical facts and problems (Meinung der Bevölkerung zu einigen Psychiatrischen und allgemeinmedizinischen Fragen und Fakten)

In 1971, Professor Dr D. Habeck and Dr A. Ladas of the *Neurological Clinic* of the University at Münster, published the results of a self-initiated survey which they conducted during the two previous years.

This survey attempts to grasp some of the population's opinions about psychiatric and medical care, facts and problems with a view to improve existing care patterns and therapies.

The methodology of this descriptive and developmental research is straightforward:

1. The development of a specially adapted questionnaire.
2. The field experiment.
3. The statistical analysis of the data.

The research report is so far primarily descriptive.

Social work in the health service (Sozialarbeit im Gesundheitswesen)

In 1968, the *Institute for Survey Research—Allensbach* was asked by the Director of the Federal Health Bureau in Frankfurt to investigate possible ways to improve the medical education of social workers as well as to increase the potential effectiveness of health agencies.

This five-year research project was funded by the Federal Ministry for Youth, Family, and Health affairs to the amount of £40,000.

The research staff was directed by Professor Dr Noelle-Neumann,

and included Dr Schwarzenauer, and Dr Schmidtchen. Professor Dr H. Viefhues of the Social Sciences and Health Sociology Department of the Ruhr University, Professor Dr L. Meinecke, R. Wallenhorst, and L. Waldmann were members of the project's advisory committee.

The methodology of this applications-oriented and comparative research project consists primarily of:

1. A panel survey of about 600 social workers before graduation in 1969 and after two years of job experience in 1971.
2. A survey by way of a questionnaire of 1,250 individuals—employees as well as superiors—in about 300 health departments, social and youth welfare centres, and about 100 hospitals.

Though no results are as yet published, the study already indicates the little regard of social workers for medicine in general and medical problems in particular. This trend is enhanced through the time period observed in the research project.

Administrators also feel that additional medical training is necessary for social workers to correctly understand and evaluate social problems which are faced by health agencies.

Housing conditions and well-being (Siedlungsform und Wohlbefinden)

In 1971, the *Institute for Survey Research—Allensbach* started to investigate the relationship between the housing conditions of the population and its general level of well-being.

The main investigator of this descriptive, analytical, and developmental research project was Professor Dr W. Schwarzenauer.

This project involves primarily the statistical analysis of a survey on housing conditions and general well-being.

Hospital communication (Krankenhaus-Kommunikation)

In 1971, the *Clinic for Social Psychiatry of the Ruprecht-Karl University of Heidelberg* started a two-year research project to investigate the communication patterns of patients, physicians, health nurses, and family members with a view to the determination of external factors which may or may not influence therapy.

The main investigators were Dr W. Hafner-Ranabauer, Professor Dr H. Hafner, B. Schader, H. Werner, Dr Immich, W. D. Kroch, and H. Müller.

Four groups of patients are considered:

1. Heart disease.
2. Cancer.
3. Non-psychotic psychiatric.
4. Orthopaedic patients.

The methodology of this analytical and developmental project consists of:

1. The development of a questionnaire with a view to the analysis of communication patterns, including the development of scales.
2. The field experiment to collect the data.
3. The statistical analysis by use of analysis of variance and factor analysis techniques.

No results are yet published.

Hospital patients: limits of medico-technical hospital care, a new approach (Kranke im Krankenhaus: Grenzen und Ergänzungsbedürftigkeit naturwissenschaftlich—techniker Medizin)

In 1972, Professor Dr K. Engelhardt, Dr A. Wirth, and Dr L. Kindermann of the *Medical Clinic* of the City Hospital of Kiel started to investigate the difficulties which patients experience in the hospital and which are not helped by progress in medico-technical hospital care. The methodology of this two-year analytical and developmental research project consists of:

1. A field experiment involving a sample of 120 40-60-year-old individual health insurance hospital patients, interviewed (the non-directive Rogers technique) and observed (medically as well as socially) over a nine-month period in a single hospital on different occasions during their individual stay.
2. The analysis of the patients' data with respect to:
 - (a) Types of personality of the patients.
 - (b) Personnel and social history.
 - (c) Reaction to hospitalization.
 - (d) Availability of and need for information.
 - (e) Reaction to and understanding of their illness.
 - (f) Expectations and satisfaction of the patients.
3. The development of several recommendations pertaining to the

hospital's organization, nurses, and physicians in order to develop a more human and patient-centred hospital care.

Though the presentation of the study may look polemic at times, the study itself is very rigorous and sound (22).

Sociological problems of the medical profession

In 1968, the *Institute for Research on Professions* of the University of Köln published a compilation of some research endeavours of its own research staff, the staff members of the Research Institute for Tradespeople with which it keeps close ties, and some other independent researchers with whom the Institute has close working contacts. The research reported on covers the field of medical sociology and gives a good survey of medical sociology interests in Germany up until 1968.

The publication reports on the research work of J. Rohde, H. Schnelpen, H. Hagemann, C. Forstmann, H. Hummel, Dr H. Kaupen-Haus, Dr W. Kaupen, C. Rohde-Dachser, and F. Sandrock.

The compendium gives a short analytical description of trends and developments, relevant to the discipline of sociology, with respect to the medical professions:

1. The physician's esteem of his own professionalism and the public's esteem of this same professionalism in view of recent medical progress.
2. Problems of co-operation with respect to academically trained dentists and technical school trained dental practitioners.
3. A sociological analysis of the implications of the Law on the Nursing Profession of 1 October 1965.
4. The training and in-job training of physiotherapists and their job conflicts.
5. Patient referrals from the point of view of physician interaction.
6. The role of the general practitioner in the local physician community.
7. The importance and image of family aides in the physician's practice.
8. An analysis of social relations among nurses in a nursing station.
9. A contribution to the solution of inconsistencies in professional status.

All papers give a sociological formulation of the problem tackled and a brief analysis of its constituent elements based upon material and information available within both Institutes mentioned.

Project with respect to the analysis of the health care system (Project Gesundheitssystemanalyse)

In 1972, the *Institute for Sociology* of the Free University of Berlin started to investigate the health care system with a view to the further development of socially acceptable conditions and democratically desirable relations for the health care providers' work force. The methodology of this analytical and developmental research project consists of:

1. A problem formulation based upon an analysis and critique of the actual health care system, the health insurance system and the pharmaceutical industry.
2. An analysis of the existing job conditions of nurses including their organization within the hospital.

Based upon some data collection the problems with respect to the organization of nurses in hospitals are highlighted. An analysis of consequences with respect to job satisfaction and labour relations is included.

3. An analysis, based upon a sample survey of medical students by way of a questionnaire, of medical education problem areas.

This analysis is related to the analysis of working conditions of nurses. Indeed, the way in which future physicians are educated is preponderant for the patterns of job conditions in hospitals.

The authors are particularly interested in identifying changes in opinions and attitudes of nurses and physicians which are needed in order to improve working conditions in hospitals. Many of these prerequisite changes are identified (63).

Stability and trends in the level of physician authority: a sociological exercise in physician-patient relationship analysis (Stabilität und Wandel Arztlicher Autorität: Eine Anwendung soziologischer Theorie auf Aspekte der Arzt-Patient-Beziehung)

In 1968, the *Institute for Research on Professions* of the University of Cologne, started a two-year research project in co-operation with the *Sociological Research Institute* of the University of Cologne, and the

Research Institute for Tradespeople; to investigate the prevalent conceptions about physician authority, its actual incidence and its evolution.

Main investigators were Professor Dr H. J. Daheim, Dr W. Kaupen, and Dr R. Künzel; research director was Dr H. Kaupen-Haas.

The methodology of this analytical, descriptive, and developmental research project consists of:

1. The definition of pattern variables pertinent to determine the degree of physician authority *vis-à-vis* his patient. This definition started from the Parsons' classification of pattern variables.
2. The formulation of hypotheses interrelating the pattern variables defined. The project's hypotheses have been formulated, based upon the theoretical model developed by T. Parsons and N. Smelser.
3. The operationalization of the pattern variables defined and the data collection in a field experiment. Data have been collected from a sample of physicians by way of a questionnaire in order to: determine their authority-type, the questioning of their authority by their patients, their reaction to this questioning.
4. The data analysis by way of especially developed techniques in order to evaluate present authority patterns and possible trends.

Many conclusions are developed in the report, which contradict widespread and popular opinions about the degree of physician authority.

Possible trends are projected in view of continuing medical specialization, the development of group practices and the increasing role of preventive medicine (34).

Professional expectations and professional motivation of German physicians (Berufsabsichten und Motivationen der Deutschen Mediziner)

In 1972, the *Infratest Institute* received a one-year research project from the Federal Ministry for Youth, Family, and Health Affairs to investigate the problem of an increasingly more important shortage of general practitioners.

The methodology of this descriptive and developmental research project is based primarily upon the analysis of the data collected by way of a questionnaire from a selected sample of physicians and medical students.

General practitioners as well as medical specialists were incorporated in the sample.

The questionnaire pertained to professional expectations and motivation as well as to socio-demographic variables and household-related variables. Different aspects have been thoroughly analysed, for example, the attractiveness of the profession, the effect of the medical education curriculum, the difficulties met with respect to solo practice, group practice, etc. A typology of seven categories of physicians has been worked out (32).

Attitudes and opinions about the nursing profession in Germany (a statistical survey) (Die gesellschaftliche Einschätzung von Krankenpflegeberufen in der BRD) (eine statistische Erhebung)

In 1966, the Research Foundation of the German Union of Hospital Personnel and the German Hospital Association requested the *EMNID Institute* of Bielefeld to investigate the attitudes and opinions of potential hospital personnel candidates and the population at large with respect to the hospital professions.

The objectives of this descriptive, developmental research project are:

1. To identify positively experienced as well as negatively experienced characteristics of the hospital professions.
2. To identify those socio-economical population groups which are most likely to generate hospital personnel if induced along the characteristics defined above.

The methodology of the project consists of three parts:

1. By use of a questionnaire and an intensive interview of three groups (35 persons in all) of hospital personnel and persons familiar with hospitals through parents, etc., (a) the identification of relevant factors such as status, payment, workload, social security, vocation, promotion, etc., (b) the development of pertinent attitude scales.
2. The survey of a sample of 1,015 high-school girls during 1967 by use of a questionnaire incorporating (a) previously defined factors and their attitude scales (b) other socio-economic data.
3. A similar survey of 2,000 adults during 1967 representing the German population in all respects (age, profession, religion, etc.). Many tables and conclusions with respect to the project's objectives are reported and published (21).

This project was followed up in 1969 by a new survey of 2,000 adults including 500 young male adults.

No results of this second study are yet reported on.

A concept of a nursing recruitment technique (Die Konzeption der Nachwuchswerbung für Krankenhauspflegeberufe)

In 1968, the *Research Group on Political Psychology and Communication Sciences* received a three-year research grant from the German Hospital Association to investigate and develop ways to attract more nurses in view of a growing nurse shortage.

The research staff on this developmental and analytical research was directed by G. Sieber. The project methodology consists of:

1. A motives identification stage. The motives of the nurses themselves as well as of the younger generation deciding on its professional interests are identified in a sample of these individuals by the use of a questionnaire and an in-depth interview. The motives identified in the two groups are classified according to:

(a) Corresponding motives and expectations. Things actually expected also show up to be feasible.

(b) Unexpected motives and expectations. Particular positive characteristics of the nursing profession are not all expected by the potential nurse candidate.

(c) Unfulfilled expectations. Particular expectations did turn out to be unrealizable.

2. A content analysis of periodicals and magazines read by the nurses themselves and geared toward the nursing labour market reveals many gaps with respect to the motives and expectations identified above.

3. A stepwise implementation procedure. Several recommendations are developed pertaining to the organization of the nursing profession itself as well as with respect to the visibility and image projection of the nursing profession on potential nursing candidates. The research group plans to conduct some experimental seminars in particular hospitals to test some of the recommendations.

Leisure-time medicine, sociology, and psychology (Freizeitmedizin und Soziologie, Erholungspsychology)

In 1971, the *Institute for Balneology and Climatophysiology* of the Albert Ludwig University of Freiburg published the results of a two-year research endeavour concentrating on the implications of more leisure time for medicine and health management. The main investigator of this self-initiated project was Dr W. Ranscht-Froemsdorff.

The methodology of this analytical, developmental, and prospective project consists of:

1. The development of a model for future leisure-time activities.
2. The identification of cost implications by type of leisure time activity.
3. The identification of anticipated problem areas.
4. The development of an educational programme for physicians, leisure-time pedagogists, etc.
5. A tentative plan for therapeutic leisure-time centres.

This futurologic research touches on some of the implications of an increasing amount of leisure time on health services. The level of uncertainty, however, is still very high.

Regional planning and its relation to health care delivery (Planung und Interessen im Gesundheitswesen)

In 1971, the *Sociological Department of the Central Institute for Regional Planning* of the University of Münster, started a two-year research project to investigate the health care delivery system and its effects on regional planning.

The main investigators of this primarily descriptive and developmental research project were B. Schäfers, R. Krysmanski, S. Lange, R. Stiegler, and H. Lange-Garritsen.

The methodology of this research project consists of a descriptive heavily documentary analysis of specific sociological aspects of the health care system in relation to its planning.

Each author deals with one or more aspects of the problem studied. The importance of regional planning on the health status of the population is dealt with as well as the implications of a specific health care delivery system on any regional planning project.

A comparative analysis compares the different health care delivery approaches in Germany, the UK, the USA, and the USSR. The theoretical approach developed is partially applied to the problems of regional planning proper to the Nordrhein-Westfalen region. The authors propose a more extensive and more empiric sociological study to further investigate the hypotheses formulated in this study (39).

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NETHERLANDS

HEALTH SERVICES RESEARCH SPONSORS

Health services research in the Netherlands is mainly sponsored and supported by government agencies.

Apart from the National Hospital Institute (p. 401), voluntary foundations and industry provide only limited support.

A diagram of the sponsoring agencies is given in Fig. 1.

Governmental agencies

A great number of mainly national government agencies directly or through advisory councils initiate, sponsor, or support health services research.

Much of this research is done within universities. The funding mechanism is complex and it is difficult to evaluate the relationship between research efforts and national needs. A comprehensive list of these governmental agencies is given below.

Ministry of Health and Environmental Hygiene (Ministerie van Volksgezondheid en Milieuhygiene)

In 1970, for instance, this Ministry itself controlled £3,700,000 related to health research, or 15 per cent of all health research; 85 per cent was allocated to environmental health, food hygiene, health promotion, and disease control. The remaining 15 per cent was allocated to health services research projects as defined in the introductory chapter. Each project averaged £37,200 per year.

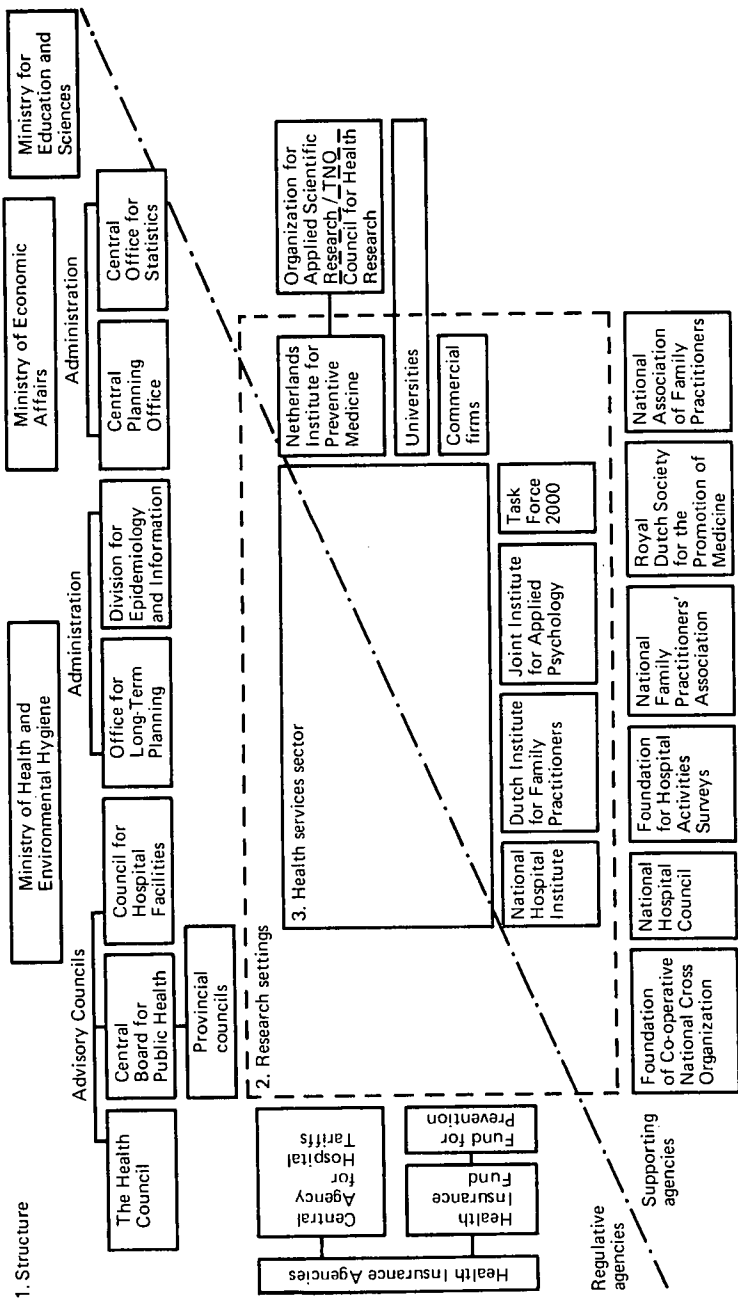


FIG. 1. Health services research in the Netherlands.

The Office for Long-Term Planning in the Ministry of Health and Environmental Hygiene (Bureau Lange Termijn Planning). Since 1972 this office supervised and co-ordinated an *ad-hoc* task force, which groups five independent research staffs working on econometric models by the use of advanced analytical and simulation methods (pp. 408, 410, 411, 417, 426). In June 1973 the *ad-hoc* task force recommended the creation of a central advisory committee for all health services research.

The role of this committee would be to stimulate research and development with a view to the restructuring of the health care system and the preparation of a comprehensive health care act. The committee would also determine the priorities in health services research, supervise and direct on-going research, and organize a central inventory of research projects.

The recommendations of the *ad-hoc* task force reflect a broader concern within the Netherlands to rationalize research efforts, supporting systems, and advisory bodies.

In December 1973, the Ministry for Science Policy initiated nationwide hearings on a range of issues such as centralization of research policymaking, co-ordination by problem area versus co-ordination by agencies, programmed versus *laissez faire* approach, university-based versus non-university-based research, etc. Undoubtedly this critical appraisal of the current state of affairs will help to focus research efforts better on the needs of the nation. Though the Office for Long-Term Planning is not itself a research institute as such, it has a close working relationship with research organizations. These are:

1. With the University of Leyden represented by Professor B. Van Praag: the development of a macro-econometric model (p. 411).
2. With the National Hospital Institute: the development of basic research on hospital costs. This project is being directed by Professor L. Groot (p. 417).

The Division for Epidemiology and Information (Stafafdeling Epidemiologie en Informatica). This Division of the same Ministry of Health and Environmental Hygiene has a supporting role in health services research primarily through the provision of epidemiological data and the conduct of *ad-hoc* surveys.

Though the Division as such cannot be identified as a research institute, it is, however, occasionally involved in research work,

primarily with respect to the development of automated files and surveys for health services purposes.

These files and surveys pertain to:

1. Administrative files of health care personnel.
2. Morbidity surveys.
3. Census files of existing facilities, patient origin, vaccination programmes, etc.

The Central Board for Public Health (Centrale Raad voor de Volksgezondheid). This Board is an advisory body for the government located within the same Ministry of Health and Environmental Hygiene.

It has existed since the Health Act of 1956.

Its main role is to advise on health care policy.

It has mainly paid attention to the development of health care costs and health care planning and has solicited specific studies in these areas.

Though the Board is not a research institute as such, a research project was nevertheless started in 1973 to investigate health care cost development (p. 417).

The same Board also supervises the provincial councils on public health.

These councils have themselves already procured some research in view of the Hospital Facilities Act of 1971.

The Health Council (Gezondheidsraad). This is the scientific advisory committee to the Ministry of Health and Environmental Hygiene. Operating within the provisions of the Health Act of 1956 its role is to advise the Minister on scientific advances in health care.

The Health Council has focused on problems like balanced teaching hospitals, cost control in health care, and quantitative analysis of health care provisions.

The Council for Hospital Facilities (College Ziekenhuis-voorzieningen). The Hospital Facilities Act of 1971 created an advisory council to the Minister of Health and Environmental Hygiene for matters relating to the effective deployment of hospital facilities.

Within the Council, special attention is being devoted to the evaluation of the regional hospital plans (p. 430).

Ministry of Education and Sciences (Ministerie van Onderwijs en Wetenschappen)

The Ministry of Education and Sciences also has an important role with respect to health services research. Indeed, 28 per cent of all health research is channelled through this Ministry.

However, the power of the Ministry to influence health research directly is much more limited.

The traditional view in the Netherlands has been that each university professor should undertake research work.

This is expressed in the money flow from the Ministry to the universities which covers both educational and research expenditures. Research initiatives nevertheless originate mainly within the university and are hardly influenced by the Ministry of Education and Sciences.

There is also no mechanism to allow for a global view on research projects, their results, or their contribution to national goals.

Ministry of Economic Affairs (Ministerie voor Economische Zaken)

Central Planning Office (Centraal Planbureau). This Office within the Ministry of Economic Affairs shows a particular interest in the growing percentage of GNP devoted to health care. Though the Office is not a research institute, it is actually involved in the development of a mathematical model of the Dutch health care system (p. 411).

Through the Central Board for Public Health, the Central Planning Office is also promoting specific cost-oriented health services research projects, primarily by providing or helping with the input data.

Central Office for Statistics (Centraal Bureau voor de Statistiek). This Office in the Ministry of Economic Affairs supplies an important and frequently consulted statistical databank for health services research. Specific surveys are occasionally undertaken to facilitate other research projects.

Co-ordinating semi-governmental agencies

The Organization for Applied Scientific Research : TNO

Aware that scientific research would be indispensable for future progress and economic development, several prominent scientists met together in 1911 and started a campaign for the creation of an organization to guide the development of applied scientific research in the interest of future progress in the Netherlands.

In 1932, this organization, the Organization for Applied Scientific Research (TNO) came into being.

The TNO organization enjoys great autonomy. Most of its resources are derived from interested ministries but its affairs are governed by boards including scientists, ministry representatives, and representatives from involved social sectors. A division of this organization is devoted to health care organization.

This last division supports health services research.

Since 1970 a Council for Health Research/TNO has also acted as promoter and co-ordinator of research related to health, for example, through financing and priority setting.

The Council for Health Research/TNO is currently considering an interim report in which an attempt is made to use cost-effectiveness approaches in determining health research priorities.

The Council for Health Research/TNO is playing an important role in co-ordinating research and development, data processing, preventive screening, biomedical technology, and environmental hygiene.

Besides its advisory role, the TNO is also engaged in research projects of its own.

These research projects primarily initiated by TNO research staff are actually done—with respect to health services research—in the Netherlands Institute for Preventive Medicine TNO (p. 403).

The Central Agency for Hospital Tariffs (Het Centraal Orgaan Ziekenhuistarieven)

The primary function of this Agency is to supervise and approve the rates in acute psychiatric hospitals and nursing homes.

The Agency is governed by representatives of the National Hospital Council and the health insurance organizations and companies. This agency functions within the provisions of the Act on Hospital Tariffs.

The Agency, however, can also initiate research. In this respect it has for instance formal links with the *ad-hoc* task force on econometric models (p. 375).

Fund for Prevention (Preventiefonds)

This Agency works within the provisions of the Act on the Fund for Prevention of 1950. Since its creation, the Fund has been quite active in the area of health research.

Up to 1973, some £1,800,000 has been granted for research projects in this area.

These resources are made available primarily through the Health Insurance Fund, which is financed by the health insurance organizations and companies.

The major part goes to biomedical research. A smaller share is devoted to health services research.

Foundations

The Foundation of Co-operative National Cross Organizations (Stichting Samenwerkende Landelijke Kruisverenigingen)

This Foundation is sponsoring and supporting research in the field of home care and community health care.

The National Association of Family Practitioners (Nederlandse huisartsengenootschap)

Together with the *National Family Practitioner Association* (Landelijke Huisartsenvereniging) and the *Royal Dutch Society for the Promotion of Medicine* (Koninklijke Nederlandse Maatschappij ter bevordering der geneeskunst) this Association sponsors research activities mainly in the field of primary care (p. 404).

The Foundation for Hospital Activities Surveys (Stichting Medische Registratie)

This Foundation provides an important statistical basis through hospital discharge abstract analysis for nearly all general hospitals.

Recently the Foundation has ordered a task force to report on 'Regional data processing of hospital activities' in order to streamline all current projects.

This report has been submitted in September 1973 to all short-term hospitals and the discussion is currently under way.

Private sponsors

Industry

In the Netherlands, industry is primarily involved in contract research and does hardly influence science policy. This same statement also applies to health services research.

However Philips-Netherlands in a limited way supports health services research in primary care and group practice.

It also conducts government-supported research in electronic data-processing applications in hospitals.

HEALTH SERVICES RESEARCH STRATEGIES

The development and implementation of science policy in the Netherlands is mainly the result of decisions and operations taken and carried out within the executive branch of Government.

In 1971 for instance a Minister-without-portfolio was appointed and specifically charged with the co-ordination of science activities. However in the course of the development of activities dealing with science and research, the executive branch has had to expand rapidly its network of advisory bodies.

This is especially true for such specialized areas as health research and health services research.

The autonomous Health Council (p. 376) which advises the minister responsible for health on the situation of scientific research in this field is an example of such an advisory council to the executive branch.

Its composition is also typical of many similar advisory boards: on the one hand a number of *ex-officio* members from the Ministry of Health and Environmental Hygiene or from other regulating agencies as the health insurance companies and on the other hand a number of non-official members appointed by the Crown.

The Council for Health Research/TNO (p. 378) for instance is composed of representatives of the departments concerned and of researchers active in the field.

The Central Agency for Hospital Tariffs (p. 378) for instance is composed of representatives of the Hospital Associations, the National Hospital Council, and the health insurance organizations and companies.

The description of the mechanism which the Netherlands have developed in order to formulate and implement health services research strategies could easily give the impression of a highly centralized system where the Minister—as responsible within the executive branch—determines major orientations and the councils co-ordinate the application of these decisions through a handful of institutions directly under ministerial control.

Nothing could be further from reality. Inevitably a simple institutional description cannot reflect the degree of decentralization within the administration nor the intensity of contact between decision-makers in all types of institutions concerned with health services research.

Teaching-related research is closely interwoven with non-teaching related health services research. The mechanism by which this close relationship is realized are the so-called para-university institutes which though not forming a part of the university system in this strict sense, nevertheless maintain close ties with the universities.

These para-university institutes indeed 'hire' gifted students on a temporary basis to work on particular research projects.

University-based health services research now interlinks with national health services research by two means:

1. The possibility which most councils have to appoint non-government members results in the appointment of university professors in many of these councils.
2. The mechanism of the 'research project advisory committee' has extended the previously mentioned 'pyramid of committees' to include the para-university institutes as well.

A further development in the process of interlinking university-based health services research with national health services research is the recent development of inter-university institutes (*Stichtingen*), a marked trend towards inter-university research projects, and the recent escalation towards joint research ventures by university institutes, national institutes, and eventually commercial firms.

These again are being incorporated within the pyramid of advisory committees so that it can be fairly stated that the main driving forces behind health services research strategies are developed through the exchange of ideas and opinions within this all-encompassing cluster of committees.

This is undoubtedly the case for most project work relating to the

economics, the financing, the planning, and the organization of the health care system.

Only some highly experimental research—such as the research conducted by the Task Force 2000—would not seem to be generated directly in this pyramid of committees.

This same 'pyramid of committees' also acts as a watchdog to ward off less relevant health services research projects.

The major research areas actually being nurtured are:

1. The general problem of cost control in the health care sector.
2. The general question of extramural health care: preventive care, home care, post-clinical care as well as primary care.
3. The issues relating to the creation of stimulating working conditions for health care workers: general practitioners, hospital and home care nurses, etc.

HEALTH SERVICES RESEARCH EXPENDITURES

Health care costs in the Netherlands are fairly well known. However, when trying to estimate health services research costs two points should be kept in mind:

1. During the period 1963–8 a new public accounting mechanism has been introduced in the Netherlands. Health services research expenditures which were previously hidden in the budget of the Minister of Education and Sciences under such headings as 'operational expenditures of educational institutions' have been identified as such and now specifically appear as health services research expenditures. This procedure over-estimates growth-rates somewhat.
2. Health services research done by non-governmental though national institutes is quite important in relation to similar efforts in other countries. However the private character of many of those organizations makes impossible precise establishment of research expenditure because much promotional effort—particularly staff time—is intertwined with research effort.

In what follows, an estimate of health services research expenditure in the Netherlands is developed:

1. GNP stood at £3,700 million in 1953 and at £18,000 million in 1970.

2. Health-related costs in 1953 were estimated at 3.3 per cent of GNP. This ratio has since increased to about 6.4 per cent of GNP in 1970 or £1,154 million, which represents a tenfold increase in absolute terms.¹

3. In 1953 it has been estimated¹ that 3.1 per cent of all health care costs or £3.9 million sterling were devoted to health-related education and training against 0.3 per cent or £315,000 which went to research. However, in 1970 these figures were reversed: 1.6 per cent of all health care costs or £18 million was devoted to education and training against 2.1 per cent or £24.7 million which went to research.

This tremendous sixty-six-fold increase of health-related research expenditures over a seventeen-year period is, however, misleading because of the new public accounting mechanism which has been introduced, as mentioned above.

4. How much of the £24.7 million sterling spent in 1970 on health-related research went to health services research specifically? In order to answer this question the total sum of £24.7 million will be further subdivided into three parts according to the funding agency.

This subdivision is partially tentative as it is based upon trends which have been observed up to 1968.²

5. First 28 per cent or £6.9 million of this £24.7 million sterling is provided for by the Ministry of Education and Sciences and channelled through the medical faculties and other related faculties into the universities. It is nearly impossible to form an idea about the health services research content of this £6.9 million: a lot of it is indeed thesis work and scholarships for research assistants.

6. Secondly about 46 per cent or £11.4 million is provided for by the Ministry of Health and Environmental Hygiene. A further breakdown of this £11.4 million is:³

(a) Thirty-three per cent or £3.7 million sterling is directly distributed by the Ministry.

(b) Forty per cent or £4.6 million sterling constitutes the

1. Centrale Raad voor de Volksgezondheid, *Benadering van de ontwikkeling van de kosten van de Nederlandse gezondheidszorg in de periode 1950-1980* (Rijswijk, 18 January 1974).

2. Centraal Bureau voor de Statistiek, *Kosten en financiering van de gezondheidszorg in Nederland in 1968*.

3. Zitting 1973-1974, 1270/Wetenschapsbudget 1974. Brief van de Minister van Wetenschapsbeleid aan de Heer Voorzitter van de Tweede Kamer van Staten-Generaal.

Ministry's contribution to the Netherlands Institute for Preventive Medicine/TNO.

(c) Twenty-seven per cent or £3.1 million sterling constitutes the Ministry's contribution to the National Institute on Public Health which, however, concentrates on biomedical research.

7. Thirdly, the remaining 26 per cent or £6.4 million sterling is provided primarily by industry (£1.9 million), households (£1.1 million), and the National Hospital Institute and the Fund for Prevention (£3.4 million).

8. To arrive at an estimate of expenditures on health services research specifically, 1971 budget data is used:

(a) Of the Ministry of Health and Environmental Hygiene own research funds of £3.1 million sterling about 15 per cent or £560,000 go to health services research over different projects.

(b) A second large amount of research money spent on health services research is provided by the National Hospital Institute through its own funds: in 1972 about £343,750.

(c) A third large amount of research money spent on health services research flows through the Fund for Prevention to the Netherlands Institute for Preventive Medicine/TNO, the Dr Veeger Institute, and the Centre for Gerontology: about £718,750.

Based upon previous data which exclude:

(a) An estimate of the expenditure on health services research taken up by the universities.

(b) An estimate of the expenditure on health services research in the Ministry of Health and Environmental Hygiene's contribution to the Netherlands Institute for Preventive Medicine (TNO).

(c) An estimate of the expenditure on health services research in the research money provided by industry, households, and other agencies other than the National Hospital Institute and the Fund for Prevention.

One arrives at an amount spent on health services research in the Netherlands of at least £1,622,500 or at least 7 per cent of all health research money.

Fig. 2 represents the most important organizations with respect to the health services research expenditures in the Netherlands. The lines represent major cost flows though no reference is made with respect to the relative size of these cost flows. Fig. 3 represents the major money breakdown.

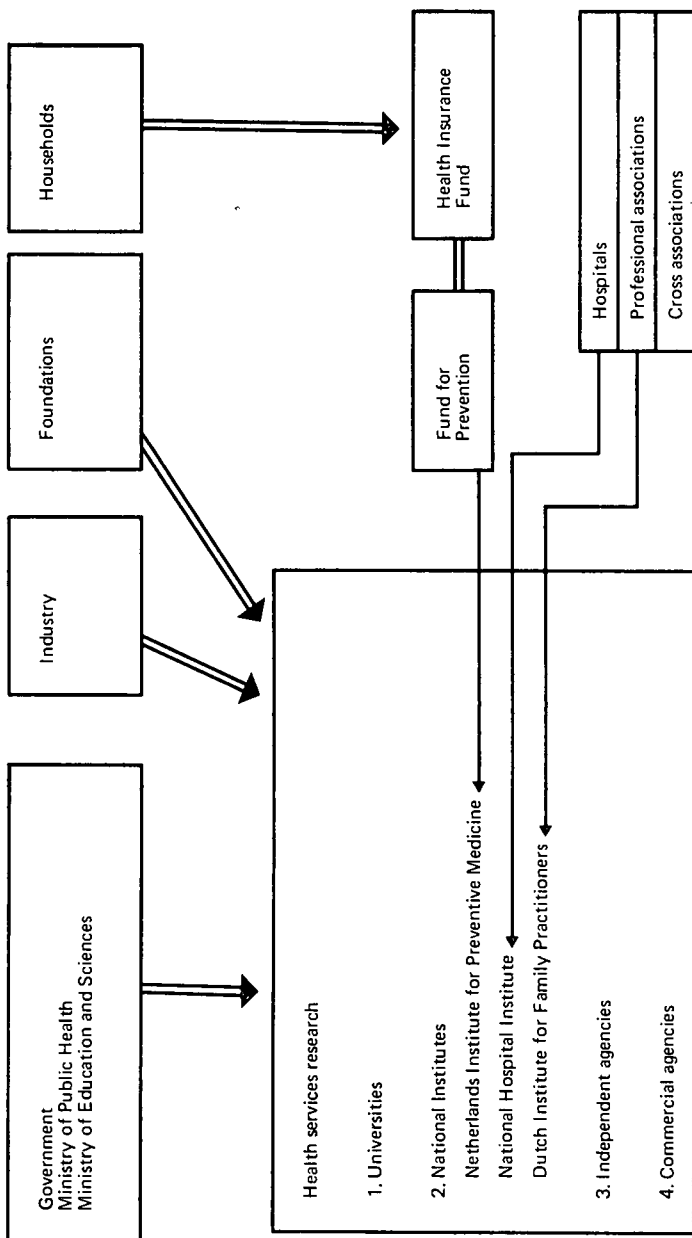


FIG. 2. Money flows for health services research in the Netherlands.

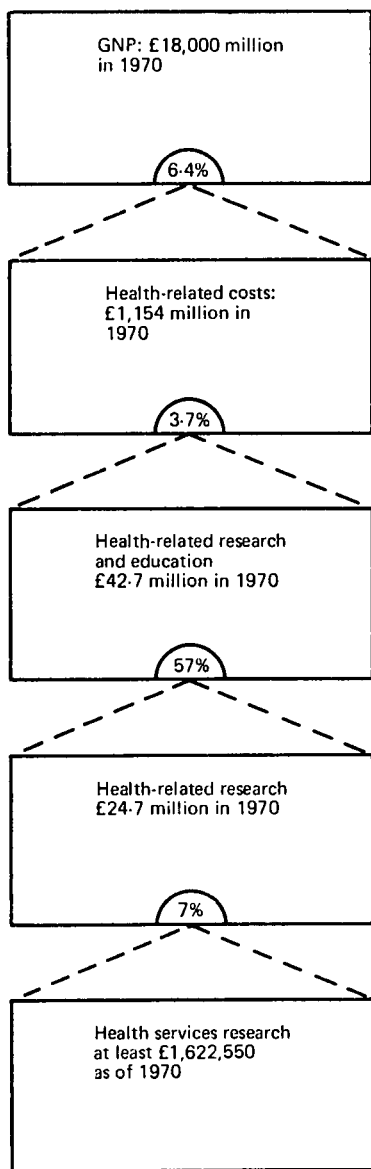


FIG. 3. Health services research expenditure in the Netherlands.

HEALTH SERVICES RESEARCH SETTINGS

INTRODUCTORY REMARKS

Though health services research is rather young in the Netherlands, it is vigorous and tends already to polarize in a number of directions according to setting.

The following rough categorization is emerging:

Facilities-oriented research located in such institutes as the Institutes for Hospital Sciences and the National Hospital Institute.

Consumer-oriented research located in institutes for social medicine.

Primary-care-oriented research located in institutes for general practice.

Efficiency and cost-oriented research located in institutes for economic research, departments of industrial engineering or management, and commercial firms.

However this polarization does not preclude each of the agencies from tackling a rather wide spectrum of problems, resulting in an unavoidable and concurrent dilution of efforts.

Research activities which are heavily centred around universities are nearly always interwoven with substantive educational activities or community service activities. This is reflected in the participation of students in research and in the educational responsibilities of research staff.

This sharply reduces the number of full-time equivalents of qualified researchers active in each of the centres.

One can speculate whether, with the exception of the National Hospital Institute and the Netherlands Institute for Preventive Medicine/TNO a sufficient critical mass of diversified staff is available in the different centres to engage in complex and prolonged research efforts. A number of centres have apparently acknowledged this lack of critical mass.

Therefore some of these centres are actively pursuing exchange and agreements regarding problems addressed, methodology, and findings.

The National Hospital Institute for instance has created a standing committee with representatives of the university-based Institutes for Hospital Sciences in the Dutch-speaking part of Europe. The Leuven University Department of Hospital Administration in

Belgium was invited to join this committee. It meets twice a year and aims at increasing the exchange on research programmes and co-ordination of research activities.

The Institute for Hospital Sciences of the University of Utrecht for instance has developed a formal relationship with the Technical University of Eindhoven to develop joint projects and to organize a yearly research symposium open to the whole health services research community in which projects are presented and discussed.

Comparable to what is happening in the USA and in Scandinavia commercial firms have begun to discover the health services industry and are determined to engage their organizational knowhow and approaches upon health services problems. They seem conscious of the small manpower base of university-based health services research efforts and have sought through *ad-hoc* arrangements and temporary joint undertakings to establish a sufficient large group of qualified professionals to address major and nationwide problems.

The field survey conducted in the framework of this intelligence report could identify thirty-three organizations which were one way or another involved with health services research: twenty-three of these organizations are based in universities or are university affiliated, five are commercial firms.

Of the remaining five, three are national institutes and two are independent agencies.

UNIVERSITY-BASED HEALTH SERVICES RESEARCH

Virtually all universities in the Netherlands are committed to health services research: even the new University of Maastricht being established at the time of the survey has expressed a definite interest in health services research and is creating a special research department on health economics (Professor L. Groot).

University of Amsterdam

The Institute for Hospital Sciences (Instituut voor Ziekenhuiswetenschappen)

This Institute was founded in 1969 and relates to the Medical School. Its objectives are: the planning of the new Academic Health Sciences Centre of the University of Amsterdam, graduate education in health services management and health services research.

The Institute with a young professional staff is headed by Professor A. Wiebenga, its resources are mainly provided by the University. Some research is supported by the Ministry of Health and Environmental Hygiene.

Research reported in progress is related to:

1. Criteria for regional planning.
2. Organization of out-patient departments including appointment systems and electronic data processing.
3. Basic principles for structuring general hospitals.
4. Determining training capacities of hospitals for interns and residents.
5. Determining requirements for superspecialized services.

The Institute for Social Medicine (Instituut voor Sociale Geneeskunde)

This Institute was founded recently. Its objectives are graduate and postgraduate education in social medicine, social insurance, and health services research. The Institute has a professional staff of eleven and is headed by Professor H. Leenen. Its resources are provided by the university.

Research is reported on:

1. Feasibility study of using systems analysis for planning in health care (p. 418).
2. Health law.
3. Structure, performance, and financing of health care.
4. Environmental health law.
5. Analysis of provider-consumer interaction to evaluate health care.
6. Social impact and frequency of hospital admission among psychiatric patients.
7. Drug abuse in the Netherlands.
8. Implications for mental health care of a changing concept of man.
9. Utilization of mental health services.
10. Psycho-social aspects of post-coronary rehabilitation.
11. Evaluation of social medicine as a profession in Western Europe.
12. Road accidents and their impact on hospital facilities in Amsterdam.

The Institute for Applied Social, Psychological, and Agological Research (Instituut voor toegepast sociaal-psychologisch en agologisch onderzoek—INTAGON)

This was founded in 1964. Its objectives are research and study into the leading of human groups (andragogy), and research with respect to the study and the development of human organizations. Undergraduate and postgraduate education is also provided for.

In 1973 the Institute itself split up into two groups:

1. Intagon-Workshop for Personal and Social Development (IWPS).
2. Intagon-Organization Development Group (IWOO).

The last group has a professional staff of five, but no director. Its resources come mainly from research contracts. It has close working relationships with other similar university settings.

Health services research is reported on:

1. The evaluation of co-operation between general practitioners, social workers, and home care nurses (p. 442).
2. The evaluation of health care centres (p. 443).

Free University of Amsterdam

The Institute for Social Medicine (Instituut voor Sociale Geneeskunde)

This Institute directed by Professor Kuiper was created in 1959. Its objectives are graduate and postgraduate education in social medicine and health services research.

Its resources are provided through the University.

Research in progress reported on, relates to:

1. Patient experiences in a general hospital.
2. Patient experiences in an out-patient department.
3. The functioning of patient associations.

University of Nijmegen

The Institute for Social Medicine (Instituut voor Sociale Geneeskunde)

This Institute, under the directorship of Professor A. Mertens, is a department within the School of Medicine. Besides its research ac-

tivities on health sciences, the Institute is also involved in the training in social medicine of general practitioners and students and this on the graduate level as well as on the postgraduate level.

Its current staff numbers thirteen academically trained persons. Occasionally the Institute also calls in the help of foreign researchers, primarily scholars from Belgium and the USA. The Institute has had some projects sponsored by the WHO and is actually also involved in some development projects in Tanzania (Africa).

Its primary funding sources however are governmental agencies and the Fund for Prevention.

Recent and current projects are :

1. Communication patterns of health professionals (p. 446).
2. An inquiry into the attitudes of three categories of medical specialists (p. 446).
3. Career choices of Nijmegen University medical graduates (p. 447).
4. Evaluation of a simulated group practice (p. 447).
5. Adjustment in nursing homes (p. 448).
6. The effect of family originating factors on medical consumption: in progress (pp. 422 and 444).
7. Functioning of intramural provisions in Noord-Brabant: in progress.

Law School (Fakulteit der Rechten)

Professor J. Maeijer and C. Schuyt of the Law School have currently started a project to look into the problem of readapting the existing legal structure of hospitals to the actual social situation.

The funds are provided for by the Organization for Fundamental Scientific Research (p. 421).

Dr Veeger Institute (Dr Veeger Instituut)

This Institute, founded in 1956, and actually under the directorship of Dr P. Heydendael, is affiliated with the Institute for Social Medicine (p. 390).

The Institute, staffed with six academically trained persons, is also represented in the Centre for Gerontology (p. 392).

The Institute concentrates on the provision of health care to the aged, the handicapped, and factory workers.

The Institute also gives some teaching and does some consulting. Funding comes primarily from the Fund for Prevention and the Ministry of Health and Environmental Hygiene.

Projects include:

1. A first attempt to develop methods to determine and improve the working capability of mentally handicapped in socially adapted factories or sheltered workshops.
2. Survey of institutionalized, visually handicapped, children (p. 448).
3. Ageing, social relations, and health (p. 449).
4. The development of criteria for the admission of severely handicapped to sheltered workshops.
5. A model of a factory health care system.
6. Assimilation of elderly persons in nursing homes (p. 448).

The Centre for Gerontology (Gerontologisch Centrum)

This Centre was founded in 1967 and is chaired by Dr J. Munnichs. It is affiliated with the University of Nijmegen.

The Centre draws from different institutes and departments, for example the Joint Institute for Applied Psychology (p. 406), the Dr Veeger Institute (p. 391), the Institute for Social Medicine (p. 390), the Institute for Applied Sociology (p. 393), and the Department of Developmental Psychology of the Catholic University of Nijmegen. As such the Centre is involved in providing for the education of students and graduates of the represented institutes or departments. The Centre's academically trained staff members, however, primarily concentrate on social-gerontological research, psychology, sociology, social medicine, and general practice. Its consulting task should be looked at in the same framework.

Though most funding is provided for by the Fund for Prevention, other funds also come from the University.

Projects include:

1. Assimilation of elderly persons in nursing homes (p. 448).
2. Health survey of a sample of aged residents.
3. Characteristics of nursing homes with respect to their internal social relationships.
4. Ageing, social relations, and health (p. 449).
5. Premature ageing following handicap.

The Institute for Applied Sociology (Instituut voor Toegepaste Sociologie)

This Institute is affiliated to the Catholic University of Nijmegen, and directed by Dr J. Van Westerlaak.

Founded in 1964, primarily out of the Institute for Sociology at the same University with which it still has close ties, this Institute is particularly geared to large-scale research projects involving the long-term commitment of staff in the context of an independent university.

The Institute's objectives include besides health services research—within a section on welfare and public health—educational and recreational research, research on labour conditions, and on demographic structures.

The major disciplines involved are sociology and psychology. Though a small part of the Institute's funds still comes from the University, the major part is provided by several subsidizing authorities, among them the government (local and national), federation of trades unions, and employers' organizations. The health services research is mainly subsidized by the Ministry of Health and Environmental Hygiene, the Fund for Prevention, and the different Home Care Associations. The Institute currently numbers about thirty full-time academically trained staff, four of whom belong to the section on welfare and public health. In addition, part-time staff are hired dependent upon the particular project and discipline involved.

Current projects in the field of health services research reported are:

1. Pre-project study on the evaluation of the functioning and organization of post-hospital care in Amsterdam (p. 450).
2. Opinions about and use made of Cross Associations (p. 450).
3. Function and role of the home care nurse (p. 451).
4. Pre-project study on the co-operation between home care nurses and the Mental Health Service (p. 459).

The Institute for General Practitioners (Universitair Huisartseninstituut)

The Institute currently under the directorship of Dr F. Huygen is part of the University of Nijmegen, which also constitutes its sole

funding source. The Institute provides a research and educational support basis for general practitioners.

The particular set-up of the Institute indicates its primary interest in short-term research of an educational nature.

Recent and current projects are:

1. The family, the patient, the hospital, and the general practitioner (p. 421).
2. Family and illness (p. 422).
3. Can the general practitioner prevent myocardial infarction (p. 423)?
4. An attempt to evaluate the transition from a solo general practitioner into a health care centre or group practice as seen by the patient (p. 423).
5. Changing the education of the general practitioner (p. 424).
6. Psychiatric morbidity survey in a general practitioner's practice by use of a two-year continuous activities survey (p. 424).
7. Family and health care in Dorp bij Stad (p. 424).
8. Medical utilization and the patient's perception of his general practitioner (p. 425).
9. The general practitioner's instrument bag related to his professional activities (p. 425).
10. A typology of the general practitioner's practice (p. 425).
11. Disease and illness behaviour: an explanatory study into the morbidity pattern of a rural practice (p. 444).
12. A study of one hundred nuclear families (p. 444).
13. Family therapy in general practice (p. 445).
14. Identification, detection, treatment, and prevention in high-risk families in general practice (p. 445).

University of Utrecht

The Institute for Hospital Sciences (Instituut voor Ziekenhuiswetenschappen)

This Institute was created in 1970 and it is directed by Professor Hattinga Verschure and has a professional staff of ten.

Its activities are education in health services management at the graduate level and health services research.

The Institute co-operates on an interdepartmental basis with the Department of Industrial Engineering of the Technical University of Eindhoven (p. 397).

Its main research interests are in developing models for comprehensive health care and planning for health care.

Projects include:

1. Patients, hospitals, and health care in the year 2000 (p. 421).
2. Partial self-care units in hospitals (p. 419).
3. Community rehabilitation of medium-term care hospital patients (p. 419).
4. Health care regionalization (p. 420).
5. Organization of integrated out-patient care.
6. Referral patterns of general practitioners and university hospital out-patient services.
7. Study of nursing care in general hospitals.
8. Measurement of hospital care processes (p. 420).
9. Annual Report on Medical Activities in General Hospitals (p. 443).

The Institute for General Practitioners (Universitair Huisartseninstituut)

In 1965 an Institute for General Practitioners was founded at the University of Utrecht.

The Institute concerned itself originally with education and research as well as with the organization of services to the Dutch general practitioners.

In 1970-1, however, the original Institute split into two separate institutes. On the one hand the Dutch Institute for Family Practitioners (p. 404) continued the service role as an independent and non-university-related Institute. On the other hand the Institute for General Practitioners of the University of Utrecht maintained the education and research role of the original Institute.

For a list of research projects prior to 1970, see p. 405. Current education-oriented research projects include:

1. The pre-medical stage.
2. Medical activities surveys of some group practices.

3. An analysis of the therapeutic and diagnostic process of the family physician.

University of Tilburg

The Institute for Health Care (Instituut voor Gezondheidszorg—IVG)

The Institute for Health Care, affiliated with Tilburg University, was founded in 1970. Under the directorship of Dr J. Segers it has a professional staff of six.

Its major funding sources come from the Ministry of Health and Environmental Hygiene, provincial councils, individual hospitals, and the University itself.

Professor J. Stolte, professor in health care management at the Universities of Tilburg and Nijmegen is the driving force behind the Institute which has close working relationships with the Institute for Scientific Social Research of the same university (p. 397), the Technical University of Eindhoven (p. 397), and the University of Nijmegen (p. 390).

Though the Institute still has a heavy educational load—many students are associated with the Institute on a temporary basis—it also has an extensive research programme.

The main emphasis in this respect is the efficiency and effectiveness of health care provisions from a macro (planning, inter-services, relationships, etc.) as well as micro (organizational, cost control, etc.) point of view.

Most research is of a multidisciplinary nature and involves primarily quantitatively trained professionals. Research projects are:

1. Health care priorities (p. 408).
2. The planning of intramural health care in the Gouda district (p. 409).
3. Hospital cost model (p. 410).
4. Functioning of intramural provisions in Noord-Brabant.
5. Hospital care in Zeeuws-Vlaanderen.
6. Planning of medical schools.

The Institute for Scientific Social Research (Instituut voor Sociaalwetenschappelijk onderzoek—IVA)

This Institute affiliated with Tilburg University, was founded in 1960 to study employment related problems. Under the directorship of Dr Vermeulen, the Institute has a professional staff of fifteen and has close working relations with the Institute for Health Care at Tilburg University (p. 396).

Its main research objectives with respect to health care relate to living conditions, welfare problems, and problems of the handicapped. Main funding sources are the University itself and other independent agencies.

Research projects are:

1. Organization and technology in institutions for the mentally retarded; an empirical and comparative analysis (p. 451).
2. A socio-demographic analysis of hospital provisions in the 'het Gooi' region (p. 452).
3. An inquiry into mental retardation (p. 453).

The Department of Industrial Engineering of the Technical University of Eindhoven (Technische Hogeschool Eindhoven)

The Department of Industrial Engineering and Management of the Technical University of Eindhoven, headed by Professor W. Monhemius took the important decision in 1969 to redirect some of its educational and research activities away from industrial applications and towards more socially relevant health services research and education. Professor H. Feitsma and Ir. R. Mercx have been primarily involved with this shift.

The Department itself co-operates on an interdepartmental basis with the Institute for Hospital Sciences of the University of Utrecht (p. 394). The staff of the Department is still expanding: four full-time and seven part-time as of 1973. Though the health services research was primarily education-oriented a consistent effort has been going on to streamline the individual projects into an over-all theme.

The Department's objectives with respect to health services research are fourfold:

1. Applicability of industrial management concepts in health care institutions.

2. Development of quantifiable models in the health care sector.
3. Training of health care industrial engineers: the first students graduated in 1973.
4. The organization of multidisciplinary research with respect to health care.

Research projects are :

1. Changing nursing care (p. 425).
2. A planning model for nursing activities (p. 426).
3. Scheduling in out-patient departments (p. 427).
4. Development of a method to determine the effectiveness of medical care processes (p. 427).
5. A laboratory flow model.
6. A radiotherapy and radiology department model.
7. Hospital patient flow model.
8. Cost control in hospitals.

The Department of Industrial Organization and Management of the Technical University of Delft (Technische Hogeschool Delft)

This Department, headed by Professor In 't Veld, has recently directed students to do their doctoral work on applications of industrial management to hospital problems.

Research in progress reported includes :

1. X-ray departments.
2. Drug distribution in hospital.
3. Organization of patient wards.

The Department of Business Administration of the Technical University of Twente (Technische Hogeschool Twente)

The Department headed by Professor J. Janssen has recently started to direct some student educational activities on hospital problems. These activities are headed by Professor Hulshof.

Research is reported on :

1. Standards for planning.
2. Functioning and organization of labour councils in hospitals.

University of Groningen

The Institute for Applied Economic Research (Instituut voor Toegepast Economisch Onderzoek)

This Institute was founded in 1968 and has quite an extensive educational and research programme which deals with economic and econometric studies of all types.

In 1971 the Task Force on Applied Economic Research was established within the Institute to start an efficiency analysis of the Refaja Hospital in Stadskanaal.

This major project was funded by the Office for Long-Term Planning (p. 375). The Task Force is headed by Dr J. Mol and consists of some ten professional staff.

Since 1971 several other research projects in the area of health services research have been started by the Task Force.

Projects reported include:

1. Medical decision-making.
2. Analysis of the organization of a peripheral hospital (p. 410).
3. Key problems of health care objectives and related constraints for health care.

The Institute for Social Medicine and Medical Care (Instituut voor Sociale Geneeskunde en Gezondheidszorg)

This is a recently founded Institute at the University of Groningen. Its research interests are still prospective and of a highly educational nature.

Research work is reported on qualitative aspects of family physician referrals.

University of Rotterdam

The School of Economics (Economische Faculteit)

This centre for organizational theory in the School of Economics, Professor Hesselring presiding, has recently started with a project group to deal with the organizational and economic problems of health care institutions. At the time of our enquiry, no research had been taken beyond the problem formulation stage.

The Department on Educational Research (Department Onderwijsonderzoek)

This Department has recently done some research of an educational nature with respect to health services. The project dealt with: family physician opinions about their psycho-social activities.

University of Leyden

The Institute for Social Medicine (Instituut voor Sociale Geneeskunde)

The Institute, founded in 1953 and under the directorship of Professor Dr F. Doeleman, is a centre in the Faculty of Medicine.

Its primary objectives are to provide for the education of medical students with respect to social medicine and to engage in research. Occasionally some consulting work is done. Its fifteen academically trained staff members, of whom seven are full-time, concentrate on problems of social medicine, epidemiology, and medical sociology.

Most funding comes through the University. However, several outside grants were also received, for example, the Queen Wilhelmina Foundation, the Dutch Rheumatism Association, and the Organization for Applied Scientific Research/TNO.

Health services research projects include:

1. Socio-cultural variables in the aetiology of health disturbances (p. 429).
2. Medical practice and medical referral with respect to cancer patients (p. 429).
3. Improved quality through prognostic-epidemiological research (p. 429).
4. Psycho-social consequences of a supervised vacation for rheumatic patients (p. 428).
5. Development of psycho-social diagnostic instruments (p. 428).
6. Health survey of the Leyden student population (p. 428).
7. Working ability of diabetic patients.
8. Professional motivation of medical students.
9. Medical utilization and the patient's perception of his general practitioner (p. 425).

The Economic Institute (Economisch Instituut)

This Institute under the directorship of Professor W. Eizenga and Professor B. Van Praag, has a long-established relationship with Leyden University.

The Institute's main objectives are research and education in the field of public economics. In recent years several projects have been started in the field of consumer behaviour, social security, and family assistance scales.

Starting in 1972, however, Professor B. Van Praag, together with two of his staff econometricians, began a major effort to develop a macro-economic health care model (p. 411).

NATIONAL INSTITUTES

The National Hospital Institute (Nationaal Ziekenhuisinstituut)

The National Hospital Institute was created in 1968 and is funded by the Dutch hospitals and nursing homes on the basis of patient-days. It has a professional staff of thirty-three and an annual budget of £730,000, 66 per cent of which is devoted to research, the rest to documentation and consulting.

The Institute is headed by Dr P. De Groot and P. Kool. The size of its budget and staff make it by far the largest group in the field of hospital research in the Netherlands. Its research efforts are well documented and cover many areas, among which are automatic data processing, hospital design, hospital economics, medical care, manpower, organization, planning, hospital statistics, and nursing care.

The research activities are geared to practical problems of development. The programme for 1974 for instance lists the following projects:

1. Laboratory automation.
2. Hospital administration.
3. Psychiatric hospital patient administration.
4. Analysis of hospital costs.
5. Cost calculation and tariff setting.
6. Functional analysis of the out-patient department.
7. Functional analysis of the operating theatres.

8. Financial statistics analysis.
9. Statistical survey of the ancillary departments.
10. Medication distribution.
11. Cash flow analysis of construction projects.
12. Physical therapy in nursing homes.
13. Nursing personnel utilization in psychiatric hospitals.
14. Personnel statistics analysis.
15. Accounting schemes.
16. Functional accounting statistics.
17. Budgeting.
18. Nursing personnel utilization in nursing homes.
19. Medical audit.
20. Standardization of hospital diagnostic and therapeutic methods.
21. Job analysis of the medical team.
22. Development of a national programme against common diseases.
23. Experiments in the education of nursing personnel.
24. Modelling hospital processes.
25. Organization of nursing floors.
26. Food preparation and distribution.
27. Organizational theory as a hospital management tool.
28. National hospital plan.
29. Model of intramural health care needs.
30. Regional model of intramural health care facilities.
31. Financial statistics.
32. Personnel statistics.
33. Hospital survey statistics.
34. Job analysis of hospital nursing aides.
35. Pre-operative education of surgical patients.
36. Co-operation between nursing, paramedical, and medical personnel.

During recent years, important research was done on:

1. Applicability of computers in the clinical-chemistry laboratory (p. 431).

2. Analysis of hospital construction costs (p. 432).
3. A survey and prognosis of the number and speciality of Dutch specialists (p. 416).
4. Availability and use of hospital facilities, an orientation study as to the use made of hospital beds (p. 430).
5. Evaluation of provincial provisional plans (p. 430).
6. Hospital fire prevention (p. 431).
7. Analysis of the floor space utilization of acute care general hospitals (p. 432).
8. Coronary care units in the Dutch hospitals (p. 414).
9. Work study in the nursing department in hospitals (p. 414).
10. Analysis of hospital costs (p. 417).
11. Patient identification.
12. Tall or low structures for general hospitals (p. 418)?

The Netherlands Institute for Preventive Medicine (TNO) (Nederlands Instituut voor Preventieve Geneeskunde)

This Institute was created in 1929. It is supported primarily by the Organization for Applied Scientific Research (TNO) into which it is integrated and also to a certain extent by the Fund for Prevention. Its staff of fifty professionals is headed by Dr M. Hargerink.

In addition to quite extensive research, the Institute is also engaged in basic and continuous education programmes with respect to environmental health.

The Institute's multidisciplinary staff is also working on the creation of a School for Public Health.

Its research covers the field of industrial medicine, environmental health, mental health, and health services.

Health services research reported on includes:

1. Social aspects of health and illness (p. 433).
2. Population health care need indicators (in co-production with the Dutch Institute for General Practitioners) (p. 434).
3. Investigation into role problems of chronic patients (p. 434).
4. An inquiry into the professional relationship among physicians involved with myocardial infarction patients (p. 435).

5. Selecting a new physician (p. 435).
6. Investigation into problems of families of psychiatric patients (p. 435).
7. Maximal medical care (p. 436).
8. Consultation in mental health care (p. 436).
9. Health care and cases of prolonged illness.
10. Evaluation of psycho-social teamwork in a general hospital.

The Dutch Institute for Family Practitioners (Nederlands Huisartseninsituut)

The Institute as such was founded in 1965 by the Dutch Foundation for the Advancement of Family Practice, which constitutes the foundation branch of the National Family Practitioners Association. Two major changes, however, have been implemented in 1970-1. First, the Institute's management has been enlarged to include also the National Association of Family Practitioners (the lobbying branch), the Royal Dutch Society for the Promotion of Medicine, and the National Administration. Secondly, the Institute received its own identity and all formal links with the Institute for General Practitioners at Utrecht University (p. 395) were cut off, though of course the informal links were kept.

The Institute itself has four departments (as of 1974):

1. The Department of Scientific Research and Development, which does the Institute's research.
2. The Department of Public Relations and Consulting which organizes exhibits and the library and consults on topics relevant to the family practitioner.
3. The Department of Group Practice which organizes and advises existing or newly founded group practices for general practitioners: (fifty-eight as of 1973).
4. The Department of Continuing Education which organizes seminars, lectures, and special courses for general practitioners.

The Institute is directed by Dr C. Bruins and Dr J. Oeberius Kapteijn. Its research department has a professional staff of three full-timers and two part-timers. The Institute is primarily funded by the Ministry of Health and Environmental Hygiene (some £160,000 in 1973) and by some professional organizations (£17,000 in 1973).

Recent research projects include:

1. Caring together (p. 454).
2. Measuring the degree of functional disability: a stepping stone for the general practitioner's care for elderly patients (p. 454).
3. Analysis of health insurance patient referrals by 122 Dutch general practitioners (p. 437).
4. Factors influencing the development of Dutch group practices and health care centres (p. 437).
5. Continuous morbidity statistics (co-production with the Ministry of Health and Environmental Hygiene) (p. 437).
6. Health interview survey (in co-operation with the Netherlands Institute for Preventive Medicine) (p. 434).
7. The effects of multidisciplinary co-operation (p. 455).
8. A medical decision model (p. 455).
9. The general practitioner-patient relationship (p. 455).
10. The role of the psychologist in primary care (p. 456).
11. An inquiry into referral patterns (p. 456).
12. The general practitioner's professional activities (p. 456).
13. Veenendaal Project (p. 457).

INDEPENDENT AGENCIES

Task Force 2000 (Werkgroep 2000)

This is an action-oriented independent study group of eight professionals, headed by Dr Thiadens which focuses on a wide range of problems related to human interaction and communication in patient care.

Research efforts are developed as underpinning for change-oriented endeavours regarding patient roles in health care, nursing performance, health education, and the hospital as a therapeutic community.

Research is reported on:

1. The modern hospital on a human scale (p. 457).
2. Health education project (p. 458).

The Joint Institute for Applied Psychology (Gemeenschappelijk Instituut voor Toegepaste Psychologie: GITP)

The Institute was created in 1947 and is active in research, consulting and training for organizations, industry, and health services.

The Institute has a professional staff of sixty-one and is headed by Professors J. Vollebergh and Snijders. Its research includes health services research. A number of projects are jointly undertaken with other agencies.

Projects reported include:

1. Evaluation of an experiment introducing nursing aides in home care (p. 438).
2. Senior positions in nursing (p. 439).
3. Job analysis in hospitals (together with Bosboom and Hegener Ltd) (p. 441).
4. Directors of nursing in university hospitals.
5. Functioning and structure of the White-Yellow Cross home care organization (p. 440).
6. Nursing homes (p. 440).
7. Controllability of the health care system (jointly with Berenschot Bureau and Bosboom and Hegener) (p. 414).
8. Ageing, social relations, and health (jointly with the Centre for Gerontology) (p. 449).
9. Assimilation of elderly persons in nursing homes (jointly with the Centre for Gerontology) (p. 448).
10. Home care for the aged in Limburg.

COMMERCIAL AGENCIES

Management consulting firm of Ir. B. W. Berenschot (Raadgevend Bureau Ir. B. W. Berenschot)

This consulting agency with subsidiaries in the US and Belgium is active in industry, public administration, and service industries including health services.

The firm concentrates with respect to health care, on micro-oriented project work of a consulting or research nature depending

on the contractor. The projects, when individual hospitals are involved, deal with organizational problems, construction problems, systems analysis of individual departments, etc.

Some planning projections are occasionally developed involving different hospitals.

The firm recently joined two other consulting firms (Bosboom and Hegener and GITP) in studying the controllability of the health care system. Projects include:

1. Alternatives for the implementation of a system of social security (p. 441).
2. Study of the regional hospital facilities in NW Veluwe (p. 442).
3. Structural changes in the North-Limburg hospitals (p. 416).
4. Controllability of the health care system (p. 414).

Bosboom and Hegener Ltd (Bosboom en Hegener NV)

The commercial consulting firm of Bosboom and Hegener, founded in 1942, has always shown an interest in health-care-related project work, its other consulting work is for industry and government.

This micro-oriented project work involves primarily individual hospitals or groups of hospitals.

Recently, some larger-scale health services projects were also attempted. The project staffs are always interdisciplinary and include economists and sociologists.

The firm with a professional staff of fifty was a partner together with the Berenschot Bureau (p. 406) and the GITP (p. 406) in a Ministry of Health and Environmental Hygiene supported project to investigate health care system control possibilities (p. 414).

Projects include:

1. Controllability of the health care system (p. 414).
2. Hospital planning in the Oost Achterhoek region.
3. Study of the regional hospital facilities in NW Veluwe (p. 442).
4. Job analysis in hospitals (p. 441).
5. Integration between the university and the university hospital.

Consulting firms of Twijnstra and Gudde and Verlinden and Wilhemsen

Both commercial firms mentioned have also been involved in hospital projects.

Their work is primarily of a planning nature and involves either individual hospitals or groups of hospitals.

The planning is usually limited to the compilation of a health care facilities inventory and the development of a growth projection for the same facilities.

McKinsey Company Inc.

In 1972, the Amsterdam Bureau of this international management consulting firm received a project grant from the Minister of Health and Environmental Hygiene to develop a job analysis and a work methods strategy for the Council for Hospital Facilities (p. 376). This Council was provided for by the Health Facilities Law of 1971. The Minister, however, followed very much his own line of approach when subsequently creating the Council.

In the middle of 1972, the same bureau also assisted the Academic Hospital and the Medical Faculty of the University of Nijmegen in developing an organizational structure and a working relationship.

This structure should enable the Management Boards of the Academic Hospital and the Medical Faculty to develop and execute their objectives and policies in close co-operation while maintaining their respective independence as required by law. The recommendations put forward were accepted and the new structure and procedures were implemented during 1973.

HEALTH SERVICES RESEARCH PROJECTS

ECONOMY-ORIENTED HEALTH SERVICES RESEARCH (13)

Health care priorities

In 1971, the *Institute for Health Care* of the Tilburg University, received a long-term research grant from the Ministry of Health and Environmental Hygiene to develop a method for regional comprehensive health facilities planning based upon an analysis of patient flows and the concurrent priorities in this respect.

This research is part of the major project on econometric models started by the Office for Long-term Planning of the same Ministry (p. 375). The project was funded in 1971 to the amount of £20,312.

The research staff, which fluctuated during the period 1971-3,

included as chief investigators Dr P. Damen, W. Nuyens, both econometricians, and P. Smulders.

To validate, primarily on a statistical basis, the Markov flow model developed for the Noord-Brabant region, the researchers identify, measure, and project six flows: mental and community mental health care; care for the mentally retarded; dental care; maternity care; care for the handicapped; other somatic care (general practitioners, hospital care, etc.).

Subsequently, the vast and nearly complete amount of statistical data collected in a cross-sectional sample was used as a basis for a cost-benefit approach.

Though the researchers originally anticipated a full PPBS model, the cost-benefit part of it could only be developed in a rudimentary fashion.

The main reason is undoubtedly the unreliability of the statistical data collected for the first five of the six flows identified.

However, this descriptive and prospective applied research revealed some important trends with respect to many of the flow parameters identified.

Though a comprehensive answer could not be presented to the politicians, at least some salient features could be made explicit (9, 14, 15, 39).

The planning of intramural health care in the Gouda district

In 1971, the *Institute for Health Care* of the Tilburg University received a two-and-a-half man-year research grant from the three general short-term acute care hospitals in the region to determine the hospital bed requirements in the Gouda district.

Chief investigator was A. Ament, econometrician. The advisory staff included Professors J. Stolte, J. Segers, and A. Mevkies.

No new methods were developed in this analytical, prospective research project though the results indicate on the one hand the need to include other types of facilities (for example, nursing homes, home care centres, etc.) in developing alternatives, and on the other hand, the political sensitivity of any final decision.

The research consists of three parts:

1. The inventory of available facilities.
2. The development of a population growth model.

3. The logarithmic-linear projection based on alternative hypotheses.

Hospital cost model

The *Institute for Health Care* of the Tilburg University has sponsored this research done by four graduating econometricians in developing and evaluating a hospital cost model.

The four students, E. Koopman, A. Luyten, J. Jongen, and J. Van der Hulst, were coached by J. Van Lieshout; Professor Dr R. Bannink, Professor J. Stolte, and Professor P. Verheyen being advisors.

The four graduates on their own time but with the help of the participating hospital actually accomplished the formulation of an input-output model for hospital costing purposes and tested their model in a sophisticated way in two particular hospital departments.

The method of input-output analysis has been used to develop a model by which the inputs (salaries, materials) could be costed to the output (patients, operations, diagnoses) by the intermediate use of cost centres identified (hospital departments).

Valid data, however, were only available to perform the first step: inputs to cost centres. In order to take the second step, cost-centres to outputs, an experimental Delphic method has been applied.

This developmental and prospective research, made by four econometricians, demonstrates successfully the usefulness of a slightly modified input-output analysis, in determining hospital costing policy on the micro- as well as on the macro-level.

The model is presented in a ready-made form (including the computer formulation) to potential users.

The extension of the same model to other departments and other hospitals is anticipated (34).

Analysis of the organization of a peripheral hospital

In March 1971, the Ministry of Health and Environmental Hygiene represented by Dr P. Van Loon of the Office for Long-Term Planning asked the *Institute for Economic Research* of the University of Groningen to investigate the efficiency of peripheral hospitals in the framework of the total health care delivery system.

The research staff included Th. De Boer, B. Posthuma, and G. Wagenaar and was directed by H. Peters.

This three-year project was funded in 1971 to the amount of £15,600.

The methodology of this research consists of two parts:

1. An organizational theory approach to investigate the structure and the operating characteristics of the hospital hierarchy: the administration, the medical staff, and the nursing units.

Though the project originally aimed at the inclusion of a simulation model to determine the effectiveness and efficiency of existing facilities and the co-ordination of activities, the simulation model as such is not worked out but referred to in a yet to be published document.

2. An information content and information transmission analysis of the existing flow of forms and written documents within the hospital. This analysis is primarily of a theoretical nature.

Though the research itself develops some recommendations, the original goals have not been reached and this primarily is due to the unrealistic expectations of the research staff.

Hence, the research itself is limited to a theoretical treatise.

The need to go into greater detail, is frequently mentioned.

The researchers are as of now pursuing this last direction. An extensive registration instrument has been implemented in the out-patient department to investigate the decision processes which the physician goes through in determining his therapy. Some progress has already been made in modelling some of the processes. The level of detail envisaged is impressive. A research proposal has recently been submitted to investigate the same topic further.

Some progress reports have already been submitted.

Macro-econometric model

In September 1972, the Ministry of Health and Environmental Hygiene approved a major research effort to start developing a macro-model encompassing all health care activities in the Netherlands.

The general supervision of this retrospective and prospective comparative econometric model is in the hands of Professor B. Van Praag, of the University of Leyden.

This project is conducted in co-operation with the Office for Long-Term Planning of the same Ministry (p. 375).

The research staff which includes J. Van der Gaag, F. Rutten,

and G. Van Beukering, is organized in a project group and requests frequent help from many staff members of other centres and institutes.

The project advisory board includes the Department of Long-Term Planning and the Division of Epidemiology and Information of the Ministry of Health and Environmental Hygiene, the Health Insurance Council, the Central Bureau of Statistics, the Institute for Mathematics, and the *Economic Institute* of the University of Leyden.

The project's objective is to develop a rationalized and explicit model to help the long-term planning of the Dutch health care system.

The supply, demand, and price levels of all health care activities are investigated according to four levels:

1. General practitioners.
2. Medical specialists and out-patient care.
3. Acute hospital care.
4. Nursing homes and post-clinical care.

Demand is subdivided in autonomous demand (which is originated by the patient himself) and derived demand (which is generated by the health care facilities) and is identified for the four levels.

The supply of health care is also broken down for the four levels and includes long-term projections for the number of general practitioners, the number of specialists, the number of hospital beds with respect to function and qualitative level, etc.

To exemplify the level of detail which is sought in this model: the number of future general practitioners is included in the model as a function of the 18-25-year bracket of the population and the expected future average income for general practitioners.

All available cost data and most hospital professional activity data will be incorporated in the macro-model.

As this research effort will take many years to accomplish, interim reports are periodically published.

As far as there exists a possibility to evaluate this still ongoing project, the methodology applied is straightforward: few new variables are introduced, few new concepts are developed.

The major aim of the researchers is to develop a usable model based on available data and sensible estimates.

The project is currently split up in three sub-projects.

1. Project group practice Ommoord. All socio-economic data, all

medical consumption data, all diagnostic data including the psychosomatic diagnostic data has been collected during a one-year period from May 1972 till May 1973 on the population base and all patients of an existing group practice in Ommoord. This group practice numbered four general practitioners.

The data will be analysed and relevant parameters will be calculated for the 'intake and referral via the first echelon' part of the macro-econometric model.

2. Development of a cross-sectional model. The 'medical specialists and acute care' flows of the macro-econometric model are concentrated upon in this part of the project. Census data from the Central Bureau of Statistics is linked with (a) hospital data obtained in a sample of coherent hospital regions by the Chief Medical Inspection division of the Ministry, and (b) health insurance data.

The analysis of the data aims at gaining insights into the influence of different financing mechanisms. This is possible as in the Netherlands, two different insurance mechanisms prevail side by side. Concurrently, attention is paid to the complementary nature and substitution possibilities of particular provisions proper to the two insurance mechanisms.

1969 and 1971 regional data has already been fitted into the model to test some of the relationships which were anticipated.

The prevalent technique is multivariate regression analysis: the functional form of the regression equation is either linear or log-linear depending on the outcome of a trial-and-error exercise.

The explained variance (R^2) so far is rather low and in many cases below the 5 per cent level.

The researchers are aware of these difficulties and are therefore spending major effort on the interpretation of the results obtained so far and the refinement of the postulated equations.

3. Development of a longitudinal model. Based upon previous steps, the research group aims to develop ultimately about fifty equations to interrelate the different parameters established.

A mixed time series/cross-sectional analysis will be performed on this set of equations.

The danger still exists that because of a fast-changing health care system, the results of this research which will not be ready for some years will be unsuitable for the new system which will have emerged in time.

The researchers however spend a major effort in estimating the amount of real demand caused by excess supply and/or the amount of needs not expressed by existing demand.

It is also beyond doubt that the exercise will be very helpful in rationalizing the health care decisions which will have to be taken in the future.

Coronary care units in the Dutch hospitals

In the summer of 1971, the *National Hospital Institute*, in collaboration with the Netherlands Heart Foundation and the Chief Medical Officer of Health, held a survey in the Dutch hospitals on the presence, development, staffing, and equipment of coronary care units.

The section on Planning and Statistics of the National Hospital Institute, obtained in this way a nearly complete picture of the situation as of July 1971.

Numerous tables are included in the report (24).

Work study in the nursing department in hospitals

In 1970 the Section on Organization of the *National Hospital Institute*; with the help of the consulting firm of Bureau Berenschot, started a two-year work study in twenty nursing departments.

This study was sponsored by the Ministry of Health and Environmental Hygiene to the amount of £20,300 in 1971. The methodology follows the stopwatch method.

The categorization of activities is developed internally and adheres to the one developed in the Johns Hopkins University (20).

Controllability of the health care system

In October 1972, the Minister of Health and Environmental Hygiene requested a project group encompassing the commercial consulting firms of *Berenschot*, *GITP*, and *Bosboom and Hegener* to develop controls for the health care system.

The project group, under the directorship of J. Morshuis, A. Althoff, and G. Brand and advised by a committee put up by the Ministry of Health and Environmental Hygiene and presided by H. Berends received a £120,000 research grant for a one-year period.

With clear-cut objectives in mind the researchers follow management textbook methodology.

Three kinds of constraint are retrospectively described:

1. Bottlenecks with respect to the operations of the health care system.
2. Restraints with respect to the control mechanisms present in the health care systems.
3. Obstacles to the cost control of the health care system.

The researchers are rather sketchy about the first two and concentrate on the third kind for which they develop a straightforward mechanistic formula derived from actual data. They also emphasize the hospitalization costs.

In this respect a rather interesting hypothesis is put forward: hospital costs depend primarily on the hotel capacity of the hospitals rather than on the amount or quality of services rendered.

Based upon the problem formulation derived, different long-term as well as short-term recommendations are developed which are summarized in five problem areas deemed critical by the project staff:

1. The lack of integrated long-term planning and objectives as reflected for instance in the absence of co-ordination between the plans of the health care institutions and the physicians' individual practice.
2. The lack of any system both in the areas of medical as well as administrative information.
3. The uneven distribution of means among different health care alternatives, for example preventive versus curative care.
4. The imbalance in the financing mechanism which favours medical over-utilization rather than organizational improvement.
5. The lack of integration among the educational programmes for the different health professionals and among the different medical research programmes.

In order to develop these recommendations background information was collected through some sixty high-level decision-makers in the Dutch health care environment.

The long-term alternatives developed are rather uncertain.

Hence, the consultants concentrate on a set of short-term recommendations, the most interesting ones relating to the remuneration of health care institutions and personnel.

The model from which they derive these cost control recommendations is however slightly over-simplified. The research results caused some controversy.

Some of the recommendations have been implemented though not always in the exact way suggested by the authors. The main stream of the report is still being considered by the Ministry's policymaking.

Structural changes in the North Limburg hospitals

In 1971, two North Limburg hospitals (Venlo and Tegelen) asked the commercial firm of *Raadgevend Bureau Ir. B. W. Berenschot NV* to develop a new and future structure for both hospitals.

This one man-year research project, directed by J. Morshuis was later expanded to include two more hospitals in the same region (Horst and Venray).

The objectives of this descriptive, prospective, and applied research project were straightforward.

The methodology, and the techniques used were equally straightforward:

1. Survey and analysis of available hospital facilities and functions.
2. Investigation of hospital functions for the future (the hospitals themselves as well as the general practitioners in the region were involved).
3. Development of an appropriate organizational structure to fulfil future objectives.

Though a partial solution is put forward—many aspects were deliberately or inadvertently left out—no start has been made with respect to implementation (19).

A survey and forecast of the number and speciality of Dutch specialists

At the request of the Central Bureau for the Registration and Recognition of Medical Specialists, a research project was started beginning 1972, by the Section on Planning and Statistics of the *National Hospital Institute*, to make a complete survey and develop a forecast for the number and speciality of Dutch medical specialists.

The age, the specialty, the function, and the location of the existing body of Dutch specialists was compiled. With the help of this data, the development of the number of medical specialists since 1937 was traced, the composition of this body according to age, function, and nationality as of May 1972 was established, regional distribution as of May 1972 was charted, and a projection of numbers up to 1971 and 1982 respectively was made.

A projection of health care cost for the period 1950-80

In 1973, the *Central Board for Public Health* started a one-year research project to investigate and project the development of health care costs in the Netherlands for the period 1950-80.

This research was conducted by the staff members of the Board itself. Input was also provided by the Central Planning Office and the Central Bureau for Statistics. The methodology of this prospective and developmental research consists of:

1. The identification of eighteen relevant and easily recognizable subsectors in the health care system.
2. A trend analysis of the cost development in these eighteen subsectors based upon 1963-8 cost data.
3. An 'alternative future' analysis based upon readily perceivable hypotheses about future trends identifiable by subsector.

Several conclusions are obtained with respect to the relative share of health care costs in the total gross national product (7).

Analysis of hospital costs

In 1971, a major research effort was started at the *National Hospital Institute* to analyse hospital costs.

Perusal of a number of economic studies made abroad in the hospital field caused the Institute indeed to consider the desirability and possibility of performing such a study in the Netherlands. This project was started on the instructions of the State Secretary of Social Affairs and Public Health.

The research is carried out by two econometricians, J. Van Aert and A. Van Montfort, under the general supervision of Professor Groot of the University of Maastricht.

P. Verheyen, professor of micro-econometrics at Tilburg leads the scientific advisors.

The methodology of this retrospective, comparative, and developmental research includes the following steps:

1. Based upon historic data a model, eventually an explanatory model of hospital costs is developed.
2. Pursuing alternative measures including their operation will be attempted to increase efficacy in the hospital care field.
3. A market analysis specifically oriented towards the future and probable technical developments is also envisaged.

The analysis will produce results, within the framework of an inter-hospital comparison, which will be of importance for the individual hospital. An increased understanding of the cost structure is also important for the government and other institutions concerned with planning (5).

Tall or low structures for general hospitals?

In 1973, the section on hospital construction and technology of the *National Hospital Institute* published the results of a two-year research effort on cost-benefit analysis of different hospital construction types. This comparative, analytical, and developmental research effort constitutes a follow-up of a previous research project: an analysis of floor space utilization of acute care general hospitals (p. 432).

The methodology is straightforward: two especially selected examples one representing a tall structure, one representing a one-level structure are compared in detail with respect to investment as well as operating costs.

The conclusion is put forward that the advantages of a low de-concentrated structure in comparison with a tall structure outweigh the disadvantages. It is also hypothesized that the most obvious disadvantages of the tall structure will hold for all buildings of more than one floor: extra volume because of stairs, shafts, etc.; extra cost of support structure; longer building period, hence higher interest costs; loss of time for operating elevators.

The main advantage of the tall structure—the small ground area—does not seem too important.

A follow-up project in co-operation with the Institute for Building Research of Rotterdam is currently being considered. This project would investigate different 'intermediate' types (31).

ORGANIZATION-ORIENTED HEALTH SERVICES RESEARCH (58)

Feasibility study of using systems analysis for planning in health care

In the middle of 1972, Professor H. Leenen of the *Institute for Social Medicine* of the University of Amsterdam started a research project, directed by E. Roscam Abbing, to investigate a systems analysis approach to planning in health care.

This developmental, analytical, and retrospective study aims at developing hypotheses from a theoretical and systems analysis point of view for the Dutch health care system of 1966.

Decisions on the system which developed after 1966 will be translated into the systems analysis approach. Their effect will be predicted on the systems analysis model and checked with reality.

No results so far have been published.

Community rehabilitation of medium-term care hospital patients

During the period 1971-2, the *Institute for Hospital Sciences* of Utrecht University conducted an experiment by which it tried to develop an administrative organizational, medical as well as nursing relationship between a short-term hospital and a long-stay care facility with respect to medium-term care patients, patients who are neither at home in an acute care hospital nor in a long-stay care facility.

The project funded by the Institute itself was headed by Professor J. Hattinga Verschure.

The objectives of this retrospective, experimental, and highly developmental research effort involved:

1. The enumeration and analysis of all important aspects relating to the experiment.
2. Measuring the size of this medium-term care patient group.
3. The evaluation of the medium-term care patient's own experiences.
4. The evaluation of staff experiences.

Final recommendations for structural changes in hospital and homes are developed (23, 50).

Low-care units

During the period 1971-4, the *Institute for Hospital Sciences* of Utrecht University started on its own funds a study to evaluate very extensively the experience of self-care experiments in hospitals in the Netherlands.

The research staff of three was under the directorship of Professor J. Hattinga Verschure.

This descriptive, application-oriented research aimed at:

1. Developing criteria with respect to size, admission rules, what

kind of patients should be admitted, how effectively they were treated, based on the experience of four low-care units and sixty-four patients.

2. Thoroughly investigating all costs involved.
3. Developing a model self-care unit.

Some reports have been published (46, 63, 64).

Health care regionalization

During 1972-3, B. Kluiters of the *Institute of Hospital Sciences* of Utrecht University developed an improved planning method.

The objective was to alleviate some of the controversial results obtained by using the criteria put forward in the Hospital Facilities Act of 1971. The basis of the method—which still implies major political decisions—is a planning approach:

1. Based upon the socio-economic or cultural entities, rather than on administrative factors.
2. Based upon the qualitatively differentiated medical specialities rather than on the number of beds.

The method so far has been applied to two regions.

Viable alternatives have been developed. Some implementation is in progress (33).

Measurement of hospital care processes

During the period 1972-3, Professor Hattinga Verschure and Dr A. Cremers of the *Institute for Hospital Sciences* of Utrecht University have developed a method to quantify and measure care processes in the hospital.

The methodology which is developed in this experimental research is derived from the McDonall Care Classification.

Weights are given to different types of care which are recorded on a patient-day basis.

An intensity of care index is constructed in this way.

Data so far has been collected and analysed for 335 admissions covering 8,918 patient-days in three departments. Several process patterns have already emerged.

The data also severed the quantity of case-load which did not require hospitalization in the first place. Some results are already published (12).

Patients, hospitals, and health care towards the year 2000

Starting in 1970, the *Institute for Hospital Sciences* of Utrecht University started a prospective non-experimental and descriptive research effort on its own funds to develop a scenario for health care, intramural and extramural care as it moves towards the year 2000. A given set of social presumptions was assumed.

The project staff, under the directorship of J. Hattinga Verschure, was constituted out of the Task Force on Hospital Sciences from the Institute itself in co-operation with the Task Force 2000 under the directorship of A. Thiadens.

Many tentative and questionable hypotheses are formulated and analysed in the scenario, primarily by use of the Delphi method (25).

Innovating legal structures of hospitals

In 1972, J. Maeijer of the *Law Department* and Professor C. Schuyt of the *Sociology of Law Department* of Nijmegen University received a research grant from the Organization for Fundamental Research to develop a new legal structure for the individual hospital.

The research staff analysed and developed the following legal problems:

1. The discrepancy between the existing hospital's legal structure and (a) the new set of social relationships operating within the hospital organization; and (b) the changing nature of the hospital-society relationship.
2. The development of a new legal structure for the organization and the internal relationship of the hospital which will satisfy criteria of effectiveness, justice, efficiency, legal security, and rationality as well as human dignity.

The results of this developmental and analytical research were checked with a committee of legal as well as hospital experts with respect to feasibility and timing. No results are yet published.

The family, the patient, the hospital, and the general practitioner

In 1970 Dr R. De Melker, of the *Institute for General Practitioners* of Nijmegen University, started a research project with Institute's

funds to investigate the actual role of the general practitioner in the whole health care process and to formulate recommendations thereof.

Starting to compare his own general practice with the national averages, the researcher himself moved swiftly into a comparative and application-oriented analysis of the nationally prevalent situation with respect to referral patterns.

A questionnaire pertinent to these referral patterns was sent to a sample of 361 patients, 516 general practitioners, and 62 medical specialists involving four hospitals.

A wide variety of referral patterns was revealed in this way. Potential health care savings are anticipated depending on the referral policy followed.

Though these savings look quite attractive and spectacular, one should not forget that the problem of quality of care has not been specifically addressed in this study. This somehow limits the study's usefulness (17).

Family and illness

In 1968, the *Institute for General Practitioners* of Nijmegen University started a major research effort to investigate the coherence between the family as such and its illness patterns.

This analytical and developmental research was initiated by the Institute for Social Medicine of the same university and was funded by the Dutch Association of General Practitioners, the Fund for Prevention, and the Dr Veeger Institute. Principal investigators were Dr P. Heydendael, F. Huygen, A. Ketelaar-Van Ierssel, and J. Persoon.

The project's methodology consists of three parts:

1. Specification and analysis of relevant psycho-social data of the family. Different instruments are developed in this respect and tested on a sample of 93 families: neurotic instability scaling instrument; a simple screening technique to discriminate between intellectually normally and less than normally talented people; parental behaviour research instrument, etc.

Additional socio-economic data are also collected.

Factor analysis (principal components) is used on the data to relate some psycho-social factors.

2. Specification and analysis of medical data known to the general practitioner. The data collected pertained to the number of diseases,

their severeness, the number of consultations, etc., and this over a number of years. Again, factor analysis is used in an attempt to develop a medical consumption pattern of families, based on the different kinds of diseases occurring in the family.

No conclusive pattern, however, could be developed though some quite interesting side conclusions emerged.

3. A factor analysis relating the psycho-social data to the medical data. Many conclusions are here developed with respect to the medical utilization patterns of psycho-socially rated families (26).

Can the general practitioner prevent myocardial infarction?

In 1970, G. Van Maenen of the *Institute for General Practitioners* of Nijmegen University started a four-year research project to investigate:

1. The development of an easy procedure to be used by the general practitioner in screening for myocardial infarction potentialities.
2. Practitioner's professional activity with respect to the high-risk group.

This research is funded by the Health Insurance Company of the Rijnstreek. The methodology of this experimental and analytical application-oriented research is based on:

1. A longitudinal experiment involving a screening procedure.
2. An analysis of the incidence data after one, two, and three years of screening. The data is statistically analysed.

Emphasis is also put upon the socio-economic variables which interfere with myocardial infarction incidence as well as with the practitioner's professional activity.

An attempt to evaluate the transition from a solo general practitioner into a health care centre or group practice as seen by the patient

Starting in 1972, H. Crebolder and F. Huygen of the *Institute for General Practitioners* of Nijmegen University began a research project to evaluate the consequences of a change from solo practice to interdisciplinary group practice for patients, health workers, and the community. The methodology of this developmental and analytical research involves:

1. The use of a questionnaire and interviews in an experimental setting in Venlo. Four thousand patients are interviewed before, at the end of the initial phase, and after.
2. A cost-benefit analysis of medical consumption based upon hospital records.

No results are as yet published.

Psychiatric morbidity survey in a general practitioner's practice by use of a two-year continuous activity survey

In 1969, A. Van de Logt of the *Institute for General Practitioners* of Nijmegen University started a four-year study to record all psychiatric morbidity in a general practitioner's practice by use of a two-year continuous activity survey.

The methodology of this analytical and developmental research involves:

1. A professional activity survey.
2. A typology of the nature, the frequency and the intensity of psychiatric morbidity (statistical analysis).
3. An evaluation of the effect of referrals upon the patient's progress.
4. The development of criteria to be used in the prevention of such psychiatric morbidity.

Changing the education of the general practitioner

Subsequent to the Psychiatric Morbidity Survey, Th. Voorn of the *Institute for General Practitioners* of Nijmegen University started in 1972 a research project to investigate desirable changes in the general practitioners' educational programme.

No methodology is as yet developed.

Family and health care in Dorp bij Stad

In August 1968, the *Institute for General Practitioners* of Nijmegen University started a five-year research project to investigate the effect of family relations and socio-economical variables upon the health care requests made upon general practitioners, home care nurses, and social workers.

This retrospective descriptive developmental research effort was headed by A. de Vries and was funded by the Hippocrates Foundation, the Fund for Prevention, and the Institute's own funds.

The methodology involved an extensive questionnaire to record all primary care utilization of all 944 families in Dorp bij Stad over a five-year period.

The data is primarily statistically analysed.

Medical utilization and the patient's perception of his general practitioner

In June 1972, H. Duivenvoorde, supervised by M. Van Nieuwenhuyzen of the *Institute for Social Medicine* of Leyden University, started a six-month research project funded by the Institute, to investigate utilization patterns in relation to their effectiveness and the relationship between the patient and his general practitioners.

The methodology of this comparative developmental research uses a questionnaire developed in a pilot study on a sample of patients with a high level of medical utilization and a sample of patients with a low level of medical utilization.

The data is statistically analysed.

The general practitioner's instrument bag related to his professional activities

During 1972 Dr J. Raupp, of the *Institute for General Practitioners*, started a six-month research project funded by Nijmegen University, to investigate the content of a general practitioner's instrument bag in relation to his professional activities.

Only those instruments which the general practitioner carried with him for home visits were studied.

A typology of the general practitioner's practice

During 1972, Dr J. Raupp, of the *Institute for General Practitioners* of Nijmegen University, started a six-month research project funded by the University to classify the different ways of practice of solo general practitioners in function of their association with the Dutch Association of General Practitioners.

Two hundred general practitioners were sampled by way of a questionnaire. The data was subsequently analysed by use of a discriminant analysis (44).

Changing nursing care

In mid 1971, the *Department of Industrial Engineering* of the Technical University of Eindhoven developed under the direction of Ir. R.

Mercx the basic rules for a 'THERapeutically safe and MOTivating' nursing care programme (using the acronym THEMO).

The basic rules grew out of the experience gained by industrial engineering students in observing the wards and which was supported by a sociological study of the organization of the ward: organizational shortcomings hamper the quality and efficiency of patient care and discourage the nurses.

This developmental and experimental research project has resulted in many experiments which are still going on in about twenty nursing units and which enable the research staff to refine and evaluate the nursing model hypothesized by the basic rules.

Different instruments to measure the therapeutic attitude and the nurses' motivation are being developed and tested. Time-studies are done on the nursing units.

The THEMO model is most similar to what is known in the literature as team nursing, though practical differences are still numerous.

The main obstacle is the motivation of the participating teams of nurses. Results so far are promising (60).

A planning model for nursing activities

In 1971 Professor H. Feitsma and Ir. R. Mercx, of the *Department of Industrial Engineering* of the Technical University of Eindhoven received a three-year grant from the Ministry of Health and Environmental Hygiene to develop a planning tool by which the efficiency of the nurses' activities could be improved.

This project is one of the five projects being supervised by the *ad-hoc* Task Force in econometric models of the Office of Long-Term Planning of the Ministry (p. 375). It was funded in 1971 to the amount of £23,500. The staff included Ir. Van der Lans, H. Nijhuis, Ir. M. Damen, and Ir. T. Van der Hoeven.

The objective of this experimental and developmental research soon boiled down to the development of a technique to determine the average and daily personnel requirements based upon the patient load, the organization of the nursing unit, and the resources available in the unit. Different attempts were tried out to quantify these three types of input. Reliability with respect to predictability constituted the main obstacle. A one-day prediction technique without differentiation with respect to the personnel's qualification could be established so far with an acceptable level of reliability.

This technique has been implemented in different places, costs however are still high. Improved ward management on all levels is anticipated. In a comparison with Belgian data provided by the Department of Hospital Administration of the University of Leuven, Belgium, major differences emerged with respect to personnel utilization on the nursing levels. These differences are still being investigated (38, 56, 61).

Scheduling in out-patient departments

During 1973, Ir. J. Schuling, and Ir. R. Mercx of the *Department of Industrial Engineering* of the Technical University of Eindhoven developed analytical and application-oriented techniques to schedule patients and physicians in the out-patient department.

Though the problem is essentially a job-shop scheduling problem, its solution is especially difficult in the hospital environment because of:

1. Randomly generated jobs.
2. Stochastically unstable 'shops'.
3. Unpredictability of the human element all important in the hospital.

The results of this analytical and developmental research are some basic rules which are 'humanly' as well as 'technically' feasible. Implementation remains difficult because of the human aspects: motivation of the participating physicians. Results, however, are promising (47).

Development of a method to determine the effectiveness of medical care processes

In 1971 a group of researchers of the *Institute for Hospital Sciences—Utrecht* (M. Kruysen, C. de Jongh, and Van de Velde) and the *Department of Industrial Engineering* of the Technical University of Eindhoven (C. de Leeuw and R. Mercx) started developing an operational method to measure the effectiveness of different care processes in comparison with each other.

Though only the pilot study has been completed so far with respect to the somatic aspects of hospital medical care, results are promising.

This experimental and basic research has already produced measurable criteria by which the duration of an important part of

the care process for well-defined diagnoses can be uniquely determined. An analysis of the influence of medical and organizational factors upon the care process itself can be developed in this way (36).

Health survey of the Leyden student population

The *Institute for Social Medicine* of the University of Leyden started in 1970 to develop the necessary screening instruments and procedures for early diagnosis of health and study problems among the Leyden student population.

This developmental research project directed and funded by the Institute itself involved a sample of 1,500 students. The research itself was done by Dr C. Aakster.

The development of health need measuring instruments is emphasized in this research.

Development of psycho-social diagnostic instruments

In 1971 the *Institute for Social Medicine* of the University of Leyden started developing a tool by which it would be possible to measure the presence, the nature, and the intensity of psycho-social stress for diagnostic and therapeutic purposes.

This project directed by Dr M. Van Nieuwenhuijzen and Dr C. Aakster, was funded by the Institute itself.

The methodology of this analytical application-oriented research involves the identification of different types of stress.

The field of application of these instruments concentrates on the suburban commuting population of western Holland.

Psycho-social consequences of a supervised vacation for rheumatic patients

In 1970, the *Institute for Social Medicine* of the University of Leyden received a research grant from the Rheuma Association to evaluate the effect of a supervised vacation for rheumatic patients.

The project was worked out by Dr C. Aakster and Dr M. Van Nieuwenhuijzen.

The methodology of this comparative, developmental research project involved the systematic screening of a sample of 400 rheumatic patients before, during, and after.

Improved quality through prognostic-epidemiologic research

Starting in 1970, the *Institute for Social Medicine* of the University of Leyden began a set of research projects to develop criteria for improving the quality of care. Research director was Dr M. Van Nieuwenhuijzen.

The methodology of this analytical and application-oriented research aimed at developing estimations of the likely outcome of alternative courses of action in medical practice.

The technique used to get at these estimations is the Delphi technique. Different medical care centres were involved in the projects.

Medical practice and medical referral with respect to cancer patients

In 1970, the Queen Wilhelmina Foundation for the fight against cancer requested the staff of the *Institute for Social Medicine* of the University of Leyden to investigate medical practice with respect to the treatment of cancer patients.

The project was supervised by Dr C. Aakster and Dr M. Van Nieuwenhuijzen.

The methodology of this descriptive, application-oriented research project uses a questionnaire to look at medical practice and referral patterns of 100 general practitioners and 100 medical specialists.

Socio-cultural variables in the aetiology of health disturbances

The *Institute for Social Medicine* of the University of Leyden started a research project (principal investigators Dr C. Aakster and Dr M. Van Nieuwenhuijzen) to analyse the relationship between socio-cultural variables and health disturbances.

The methodology of this analytical and developmental research was primarily a statistical analysis of data gathered from a sample of 1,500 people by use of a questionnaire (1, 2).

Availability and use of hospital facilities: an orientation study as to the use made of hospital beds

In 1972, the *National Hospital Institute* and its section on planning started an orientation study as to the use made of hospital facilities. The main reason for this research is the fact that the Hospital Facilities Act of 1971 expresses the need for adequate criteria to assess the demand for hospital facilities.

This retrospective, comparative research applies classic methodology and techniques.

Working on national data, the study looks into regional as well as yearly differences in order to find relevant relationships.

The main hypothesis which states that 'utilization' follows 'availability' is confirmed.

Some interesting side effects are also demonstrated, for example, the elasticity of the admission rate per 1,000 population is greater than the elasticity of the length of stay or empty beds are easier to fill than beds occupied to empty (8).

Evaluation of provisional provincial plans

During the period March 1972 to January 1973, the section on planning of the *National Hospital Institute* did a comparative and retrospective research effort in order to evaluate:

1. The criteria and methods used in the provincial hospital plans, for example, their uniformity, their comparability.
2. The usefulness of the provincial hospital plans for a national hospital plan.

The eleven provincial hospital plans were incited by the Hospital Facilities Act of 1971 which also provided some simple rules with respect to the methods, techniques, and criteria which had to be applied. The results of this analysis indicate several shortcomings with respect to the usefulness and the degree of explication of the criteria, methods, and techniques put forward in the Hospital Facilities Act. Also the provincial plans were restricted primarily to an inventorization of existing and in a first step approved facilities together with a computation of needs on the basis of nationally based, though highly hypothetical bed indices.

Their usefulness for planning purposes is rather limited when it comes to:

1. Differentiation of the medical care spectrum available in a particular region.
2. Assignment of medical functions over different institutions in the region.
3. Organizational co-ordination of institutional and extra mural medical care.
4. Efficient utilization of available facilities.

The impact of this research effort has helped to improve the implementation of the Hospital Facilities Act (21).

Applicability of computers in the clinical chemistry laboratory

The section on automatic data processing of the *National Hospital Institute* has a long-term interest in the applicability and implementation of computers in its affiliated hospitals.

Many comparative retrospective studies are going on in this respect.

This research, published in 1972, deals with the computer in the clinical-chemistry department.

The methodology followed is straightforward:

1. First, the qualitative aspects and cost figures of pilot experiments are scrutinized.
2. Secondly, a long-term strategy is developed accordingly, for example, start with the administrative tasks, go on to process control.
3. Thirdly, a set of uniform guidelines is developed which should be followed in any implementation.

Occasionally this systems-analysis approach introduces new concepts or techniques, for example a uniform patient codification system.

Two conclusions seem to come back continuously:

1. The software problem is a critical one.
2. The introduction of any application needs much more preparative work involving all hospital staff (for example administrative as well as medical) (54).

Hospital fire prevention

One of the many ongoing research objectives of the section for hospital construction and technology of the *National Hospital Institute*,

is the development of construction, installation, and equipment criteria for hospital fire prevention.

The development of criteria presented in this research report of 1972 is based upon the comparative and retrospective analysis of actual fire alarms and hospital incidents.

Though many technical experts were involved, the peculiarities of hospital fire prevention and fire delimitation ask for a proper technical as well as organizational approach which the National Hospital Institute provided.

This report stresses the need for more concern about safety in health services research of a technical as well as an organizational nature (10).

Analysis of hospital construction costs

The section for hospital construction and technology of the *National Hospital Institute*, published in 1971 the results of an extensive research endeavour into the evolution of and driving forces behind rising hospital construction costs.

This comparative and prospective study involving many years of staff time developed as a contribution to basic research a taxonomy to identify different types of hospital construction costs: peripheral costs (engineers, etc.); building site costs; construction costs; installation costs; furnishing costs.

In the developmental part of this research, this same taxonomy is tried out on the construction cost data of ten hospitals.

Different plain cost parameters as well as trend parameters with respect to increasing needs and concurrently, increasing costs are calculated.

With a view to future applications, the study summarizes a set of criteria for possible cost reduction in the future, the main conclusion cited is the relative cost advantage of a one-level construction model over a multiple-level construction model (35).

Analysis of the floor space utilization of acute care general hospitals

In 1969, the section for hospital construction and technology of the *National Hospital Institute* started a two-year effort to develop a quantitative analysis of hospital floor space utilization in order to help evaluate actual and future hospital design and construction.

This comparative and prospective study involved basic, developmental, as well as application-oriented research.

The major basic result of this research is the development of a logical all-encompassing taxonomy for hospital floor space utilization according to the hospital's main functions: nursing; medical; supporting, including administration, etc.; traffic; out-patient care; medical-technical; education; variable care including staff housing, laundry, ventilation, etc.

The developmental part of this research involved the implementation of this taxonomy to eighteen general care hospitals according to size.

The qualitative evaluation of available floor space in those eighteen hospitals is also included.

Based upon a thorough analysis of the results obtained an application-oriented set of floor space parameters is developed for several of the main hospital functions: laboratory, physical therapy, out-patient department, X-ray department, and operating theatres.

The impact of the above study on new hospital construction is beyond doubt (41).

Social aspects of health and illness

In 1965, the *Netherlands Institute for Preventive Medicine: TNO* started a seven-year descriptive and developmental research project to investigate medical utilization in view of an evaluation of medical care facilities.

The project, whose principal investigator was Dr E. Cassee, was subsidized by the Ministry of Health and Environmental Hygiene.

The methodology of the project involves the operationalization of measuring instruments with respect to:

1. Knowledge and opinions of patients about their health and illness.
2. The general practitioner's professional activities, and the patient's satisfaction.
3. Motives for, incentives towards, reasons for delaying, deviant behaviour with respect to general practitioner's visits.

The data collected on a random sample of 21-66-year-old inhabitants of Utrecht is statistically analysed and has been published (11).

Population health care need indicators: health interview survey

Subsequently to the project on 'Social aspects of health and illness', the *Netherlands Institute for Preventive Medicine: TNO* started to develop and select some indicators of 'health care needs'. Chief investigator is Dr E. Cassee and funding is currently being considered by the Ministry of Health and Environmental Hygiene.

Assistance is sought for the development of these indicators from the National Family Practitioner's Association and the Dutch Institute for General Practitioners.

The aim of this application-oriented and experimental research is to evaluate by use of these indicators the nature, the availability, efficiency, and effectiveness of medical provisions such as general practitioners, specialists, and co-workers.

In addition an attempt will be made to reformulate the goals for the training of medical practitioners.

Special attention will also be paid to the question of whether the present medical services of the first echelon or primary care level cover the actual needs.

Two pilot studies were begun in 1972: one among primiparae and one among discharged hospital patients.

The aim is to make use of the patients' own information as well as of information provided by the general practitioner.

The project was stopped after the pilot studies.

Investigation into role problems of chronic patients

Parallel to the development of the Population Health Care Need indicators project (above) the *Netherlands Institute for Preventive Medicine: TNO* started also a developmental and analytical research effort to investigate the difficulties met by chronic patients in their adaptation to society.

A first sample of fifty myocardial infarction patients has been followed in their care process through the hospital, the out-patient department, the rehabilitation centre, and back into their family.

A second sample of haemodialysis patients is now being selected.

The influence of attending and controlling medical officers, other health professionals, as well as relatives and friends upon the adjustment to changing living conditions is investigated.

The project is still in progress.

An inquiry into the professional relationship among physicians involved with myocardial infarction patients

Based upon the experiences of the sample of myocardial infarction patients followed through in the 'Difficulties of chronic patients to adapt to society' project (p. 434), the *Netherlands Institute for Preventive Medicine : TNO*, H. Merens-Riedstra, and W. Vanden Ende, have also looked into the problem of professional relationships regarding these patients.

A rather low level of professional co-operation has been identified. Moreover, conflicting therapeutic orders have apparently been issued. A sample of fifty ex-myocardial infarction patients and their spouses was investigated (37).

Selecting a new physician

During the period 1971-2, the *Netherlands Institute for Preventive Medicine : TNO* investigated together with the *Institute for Sociology* of the University of Leyden and the *Institute for Social Medicine* the link between patients and particular physicians in a group practice. This project is discussed on p. 437.

Investigation into problems of families of psychiatric patients

Starting in 1965, the *Netherlands Institute for Preventive Medicine : TNO* investigated on its own funds and during a five-year period the need for social assistance felt by families of psychiatric patients. The chief investigator was Dr R. De Boer.

The project was inspired by a US survey carried out by Clausen and Yarrens.

The methodology of this analytical developmental research project consisted of two parts:

1. The development of scales to measure the need for social assistance by the family during and after the admission to a psychiatric hospital of the father.
2. The data collection in order to analyse these needs (mainly interviews).

It has been shown so far that the illness itself and its effect on the mental relations rather than the admission constitutes the main burden on the family.

Some preliminary results warrant the conclusion that in a number of respects the experiences obtained by the two US researchers are not valid for the situation in the Netherlands due for instance to a different policy of admission and discharge in use in both countries. The project has been stopped as of 1974.

Maximal medical care

In 1969, the *Netherlands Institute for Preventive Medicine : TNO* started to investigate during a three-year period some of the more difficult problem areas of conventional medical care.

Its main objectives in this analytical and application-oriented research effort are to develop guidelines and recommendations to deal with these problem areas.

The first part analyses the care problems met by residents of a village specially adapted to the needs of physically handicapped. The second part of this three-year project focuses on those patients who consult in a last desperate attempt neurosurgeons for problems which are not generated by organic illness.

The researchers indicate the breakdown of the classic medico-biological care model and suggest a more socially oriented care model. No results are as yet published.

Consultation in mental health care

In 1969, the *Netherlands Institute for Preventive Medicine : TNO* started a research project to improve the effectiveness of mental health care professionals in view of a developing shortage. Chief investigator was Dr J. Van Ravenzwaaij.

The method of this analytical and application-oriented research project involves primarily an experiment to test the mental health consultation method of G. Caplan in Dutch circumstances.

This method emphasizes the problems of the mental health care professional rather than those of the patient.

Recommendations and instructions are developed, based upon the analysis of existing mental health care patient records and some experimental data of study groups on medical psychology.

No results are as yet published.

Factors influencing the development of Dutch group practices and health care centres

At the end of 1971, the Committee on Group Practice of the Royal Dutch Society for the Advancement of Medicine, the National Association of Family Practitioners, and the Society of Family Practitioners requested the *Dutch Institute for Family Practitioners* to investigate the problems met in creating group practices and health care centres.

The project group which worked during about one year included Dr C. Aakster from the Institute for Social Medicine of the University of Leyden, and M. Siegenbeek van Heukelom-de Boer (project leader), C. Bruins, and Dr R. De Widt from the Institute for General Practitioners.

The technique used in this retrospective, comparative, application-oriented research is an extensive questionnaire covering as many hypothetical factors as possible relating to group practice and its development. This questionnaire was applied to a select sample of thirty existing or developing group practices which were also evaluated by the team. Results indicate that the factors internal to the group, such as the motive to co-operate organizationally, and the research motivation of the members are preponderant for the success of any group practice or health care centre (48).

Analysis of health insurance patient referrals by 122 Dutch general practitioners

In 1969, Professor Dr J. Van Es, University of Utrecht, and Ir. H. Pijlman, investigated a sample of 8,000 referrals observed during a four-week period with 122 general practitioners.

This research was initiated by the *Dutch Institute for Family Practitioners*.

The mainly statistical analysis revealed some prevalent relationships. Socio-economical as well as medical data were recorded for the sampled referrals. The study develops a broad picture of referral patterns. The results have been discussed with the associations of specialists and the health insurance agencies (62).

Continuous morbidity statistics

In 1970, Dr H. Bijkerk from the *Medical Inspection Division* of the Ministry of Health and Environmental Hygiene started a three-year

research project to investigate the morbidity patterns encountered by general practitioners.

Funding, eventually extended to the end of 1974, comes from: the Fund for Prevention and the Ministry of Health and Environmental Hygiene (1971 = £31,250).

The project advisory staff consists of representatives of the Dutch Institute for Family Practitioners, the Medical Inspection Division of the Ministry of Health and Environmental Hygiene, and other representatives of the same ministry.

The project staff also includes J. Dopheide, who is associated with the *Dutch Institute for Family Practitioners*.

Essentially this descriptive and analytical developmental research aims at developing an on-going morbidity registration system for the Dutch population concentrating on the morbidity encountered by family practitioners.

A weighted sample of fifty-three registration centres records all morbidity on a week-by-week basis and also concentrates periodically on special problems such as suicide attempts, birth control, abortion, and the use of tranquillizers.

When the data is processed account is taken of different socio-economical variables such as the region and the degree of urbanization.

The research project has already come forward with:

1. A good survey of the total Dutch morbidity.
2. Some interesting peculiarities of the special problem areas mentioned.

Recent effort is primarily devoted to the implementation of a permanent statistical morbidity survey in general practice.

Parallel to this project a second sample of three group practices records all patient care given on a much more extensive basis. Epidemiological research on this data is envisioned.

Evaluation of an experiment introducing nursing aides in home care

In October 1966, the *Joint Institute for Applied Psychology* and the *Dr Veeger Institute* received a fifteen-month grant from three Dutch home care associations to evaluate the introduction of nursing aides in nine home care centres.

The experiments themselves were funded by the Ministry of Health and Environmental Hygiene.

The methodology of this analytical, comparative, and application-oriented research consisted of two parts:

1. Specially developed questionnaires were used to record the participants' experiences and opinions (F. J. Rietsema and Joint Institute for Applied Psychology).
2. The standard activity recording sheets already used by the participants were analysed for significant changes during the period of the experiment.

The numerous conclusions and recommendations, including a kind of optimal set up, have nearly all been implemented (22).

Senior positions in nursing

During mid 1967, the former Association of Catholic Hospitals, which merged together with similar associations into the National Hospital Council, granted a two-year research contract to the *Joint Institute for Applied Psychology* to develop the recommendations necessary to alleviate the shortage of senior nursing staff.

The project staff included Professor J. Vollebergh, A. Struik, Cl. Olthoff, C. Klerken, B. Van Tol, P. Van Ginneken, and F. Rietsema.

The methodology consisted of:

1. Job analysis of senior staff functions, minimum requirements as well as educational possibilities.
2. Personnel management in hospitals: its objectives and organizational structure.
3. Motivations of potential candidates.

Parts 1 and 2 used classic task and job analysis techniques. Part 3 used a questionnaire and applied a factor and cluster analysis on the data obtained from ninety-one female potential senior nurses.

One of the main conclusions is that the nurse herself is not looking for promotion but that the opening itself necessitates becoming a senior nurse.

Many recommendations are included in the report (55).

Functioning and structure of the White-Yellow Cross organization

During 1965, the *Joint Institute for Applied Psychology* received a research grant from the home care organization 'White-Yellow Cross' to investigate the existing situation and to formulate sound alternatives with respect to necessary changes.

Special attention was to be paid by the research staff, directed by J. Rietsema and I. Janmaat, to the qualitative aspects of the functioning, the social relations, and the structure of the home care association.

The methodology of this retrospective, and descriptive, application-oriented research was primarily a very extensive, especially developed questionnaire followed up by individual interviews.

A sample of 170 individuals, 63 nurses, 30 directors or supervisors, 50 outsiders including health inspectors, and 15 home care settings were involved.

A set of recommendations follows this survey.

Nursing homes in the Netherlands

In 1971, the *Joint Institute for Applied Psychology* received a research grant to the amount of £7,600 from the Medical Inspection Head Office of the Ministry of Health and Public Hygiene and the Section on Nursing Homes from the National Hospital Council to investigate the functioning of the nursing homes and to survey the kind and nature of nursing home patients.

The Fund for Prevention also subsidized this research project. The research staff under the direction of J. Munnichs and M. Wimmers, was advised by the National Hospital Institute.

The methodology of this descriptive and analytical retrospective research is straightforward:

1. The nursing homes themselves (size, layout, facilities, etc.): 215 or nearly all.
2. The nursing home patients population (size, degree of invalidity, age, nursing needs, etc.): a sample of 168 patients.
3. The nursing homes ex-patient population (age, referral, etc.): all ex-patients of 158 nursing homes.

Subsequently, the data is statistically analysed.

A factor analysis using principal components of the nursing home

characteristics (9) and the nursing home patient population characteristics (21) is included.

Conclusions are included, recommendations are not.

Job analysis in hospitals

During the period 1966-9 the *Dutch Institute for Efficiency (NIVE)* received a £12,000 grant from the Ministry of Economic Affairs to develop industrial job analysis techniques for use in hospitals.

The project staff included staff members of the consulting firms, Joint Institute for Applied Psychology and Bosboom and Hegener: Ir. E. Huysman, Ir. C. Eysbouts, P. Metman, Cl. Olthoff, H. Schenk, and P. Van Ginneken.

The methodology of this analytical and developmental research is based on industrial management methods developed by Drucker, March, and Simon and Argyris.

The adaptation of these methods to the hospital environment was quite a success.

A technique which analyses both jobs as well as hierarchical position on the basis of the working process has been developed.

The methodology has been implemented and applied in four Dutch hospitals for which results are also reported (29).

Alternatives for the implementation of a system of social security

In 1968, the commercial consulting firms of *Ir. R. W. Berenschot* and *Bosboom and Hegener* received a three-year research grant from the Social-Economic Council to investigate alternatives to simplify the system of social security. Principal project investigator was Ir. J. Dooren.

The methodology of this analytical and developmental prospective research is based on:

1. A survey of the actual situation in 896 agencies for social security in the Netherlands.
2. The development of possible alternatives.
3. The development of viable alternatives by checking the possible alternatives, with the expert advice of the members of the Social Economic Council and the Committee on Social Security.
4. The elaboration of the finally selected alternatives and a prognosis of their chances for success.

A recommendation is formulated to integrate the different agencies, locally, regionally, or nationally dependent upon the need for direct contact between the agency and the socially insured.

The data processing, however, should be centralized with the possibility to introduce computer terminals.

With respect to the system of social security itself: the premium rate of the compulsory insured should be made as uniform as possible through a simplification of the myriad of historically developed social security laws.

Study of the regional hospital facilities in north-west Veluwe

In March 1971, the consulting firms of *Bosboom and Hegener* and *Bureau Berenschot* were requested by the hospital board of two north-west Veluwe hospitals to investigate the available and needed hospital facilities in the same region.

This descriptive ten-month study follow traditional patterns. The projections included are equally straightforward.

The results have been applied in a first draft of future construction plans.

The evaluation of co-operation between general practitioners, social workers, and home care nurses

In 1970, the *Institute for Applied Social, Psychological, and Agological Research* of the University of Amsterdam received a three-year research grant from the Ministry of Health and Environmental Hygiene to analyse the different factors which may enhance or diminish the co-operation between general practitioners, social workers, and home care nurses in Amsterdam.

The research staff included J. Holten-Vriesema and Dr A. Vermeul van Mullem and was advised by an *ad-hoc* committee including A. Beemer and A. Noyon.

The methodology of this analytical, descriptive, and application-oriented research project contained the following steps:

1. A literature survey indicated the problem areas met in inducing co-operation among general practitioners, social workers, and home care nurses.
2. A field experiment was developed to observe the different professionals while practising. Instruments used include activity registration sheets, attitude questionnaires and group interviews.

3. Subsequent to the previous steps an analysis was performed on the data with a view to an evaluation of the teams' performances. This analysis developed recommendations with respect to the education, the training, the in-service training of the professionals, the policies with respect to the set-up of the co-operation, and the registration of cases which are helped by the teams.

The extensive report which has been published goes into great detail for each of the aspects mentioned.

The research itself ended in 1974. The teams, however, are still very much operational (30).

The evaluation of health care centres

In 1971, the *Institute for Applied Social, Psychological, and Agological Research* of the University of Amsterdam received a four-year, £47,000 research grant from the Fund for Prevention to evaluate the experience of five health care centres.

The research staff included F. de Boom-Van Duin, J. Holten-Vriesema, J. Bastiaenen, M. Egberts, and T. Kersemakers.

The methodology of this analytical, descriptive, and application-oriented research consists of the following steps:

1. A pre-test to identify centre objectives.
2. A number of sub-projects developed by centre:
 - (a) Analysis of the changes introduced by the health care centre upon the health care patterns of the population and the centre professionals.
 - (b) Analysis of the development of relationship among the centre professionals.
 - (c) An analysis of drawbacks and incentives with respect to the developments of interdisciplinary and intra-disciplinary co-operation.

Partial results have as yet been published.

The authors experience great difficulty in developing the proposed methodology: changes are still anticipated.

Annual report on medical activities in general hospitals

In 1974, Dr P. van Oerle of the *Institute of Hospital Sciences* of the University of Utrecht published his PhD dissertation on the yearly reports on medical activities being published by general hospitals.

The methodology of this comparative, analytical, and applications-oriented research project includes the following steps:

1. A comparison of yearly reports on medical activity actually being published.
2. An analysis from the point of view of information theory and content analysis with a view to reporting on medical quality.
3. The development of a model report and concurrent indicators to highlight the quality of medical activities in hospitals (65).

Disease and illness behaviour: an exploratory study into the morbidity pattern of a rural practice

In 1974, the *Institute for General Practitioners* of Nijmegen University concluded a research project, headed by W. Neefs which aims at determining the threshold levels perceived in the demand for medical care.

The methodology of this four-year developmental and analytical research project involves:

1. The operationalization of medical consumption recording through the use of medical records on a sample of 850 individuals over 230 families.
2. The analysis of the same medical records over a two-and-a-half-year span.
3. The survey of the same individuals with respect to their perception, their anxiety, knowledge of health, and health experience.
4. The survey of the socio-economic characteristics of the same individuals.
5. A multivariate analysis including an automatic interaction detecting analysis to determine the family originating factors which influence care consumption.

The one hundred nuclear families studies

In 1973, J. Van Eijk of the *Institute for General Practitioners* of Nijmegen University published the results of a research project which looked into the medical history of 200 family units: 100 young and 100 older ones.

The methodology of this comparative and developmental research project is straightforward: an analysis of the medical history of a sample of 200 family units over the period 1945-65.

Several tentative hypotheses are formulated.

Family therapy in general practice

In 1973, A. Smits and J. Van Mierlo of the *Institute of General Practitioners* of Nijmegen University started a two-year research project to develop instruments to measure general practice.

The methodology of this developmental and analytical research project consists of:

1. The identification of general practice goals.
2. The elaboration of scales to measure progress towards these goals.
3. The elaboration of instruments which measure along the scales developed and which can be incorporated in medical records.
4. The validation—both intrinsic and extrinsic—of the measuring instruments developed.

No results are as yet published.

Identification, detection, treatment, and prevention of high-risk families in general practice

In 1973, the *Institute for General Practitioners* of Nijmegen University started a two-year research project to develop an early warning system to detect those families which, because of psycho-social problems, run a high-risk of developing somatic complaints and/or diseases.

The methodology of this analytical and developmental research project encompasses the following steps:

1. A continuous morbidity registration on a sample of 14,000 patients subdivided in three groups: city general practice, small town and rural general practice.
2. A detailed survey on a subsample of 1,200 patients.
3. A data analysis on both samples.
4. An analysis and evaluation of existing family therapies as observed in the subsample.
5. The development of alternative preventive approaches including their experimental design.

No results are as yet published.

SOCIOLOGY-ORIENTED
HEALTH SERVICES RESEARCH (26)

Communication patterns of health professionals

During 1972, the *Institute for Social Medicine* of Nijmegen University investigated the communication among co-operating health professionals as a contribution to the solution of one of the bottlenecks of teamwork in the health care area.

This project is the Institute's contribution to the line of projects initiated by the National Family Practitioners Association and the Council for Social Welfare, which deal with the development of co-operation among health professionals.

This comparative and developmental research was funded by the Institute itself and was directed by J. Persoon and Dr P. Heydendael. The project's methodology involved a questionnaire directed to health professionals to track their knowledge about: the families themselves; the other professional activities in relation to the family.

1,022 families, one general practitioner, two home care nurses, and one social worker were involved.

Based on the experimental results, some recommendations are developed, these pertain primarily to the health professional's education and training (28).

An inquiry into attitudes of three categories of medical specialists

In 1971, J. Persoon of the *Institute for Social Medicine* of Nijmegen University made a research project to investigate the attitudes and opinions of three categories of medical specialists: internal medicine, surgery, and psychiatry.

The methodology of this developmental and comparative research project is based upon:

1. The collection of relevant social and personal data.
2. The development of an attitudes and opinions measuring scale with respect to medico-ethical questions and professional practice.

A sample of 49 surgeons, 49 internists, and 49 psychiatrists were interviewed according to the scales developed (42).

Career choices of Nijmegen University medical graduates

During the latter years, the *Institute of Social Medicine* of Nijmegen University has kept track of the career choice of the Nijmegen Medical School graduates. Based upon this data, possible trends are established.

The analysis, performed by Professor A. Mertens, Director of the Institute, and J. Persoon, staff member, is also interesting as it contains an evaluation of an experiment involving a required eight-week internship for all graduates in general practice and in social medicine.

Evaluation of a pseudo-group practice

At the end of 1968, the *Institute of Social Medicine* of Nijmegen University started a research project at the request of the Institute for General Practitioners from the same university, to evaluate an existing pseudo-group practice and to develop recommendations concerning.

The pseudo-group practice itself initiated the request.

Funding was partially provided by the Health Insurance Council and matched up by the Institute's own funds.

Principal investigators were Professor Dr F. Huygen, Dr P. Heydendael, and J. Persoon.

The methodology of this descriptive and application-oriented research consists of three parts:

1. A longitudinal survey of changing attitudes and communication patterns among the group of six general practitioners and their wives (direct observation).
2. A descriptive analysis of the group practice's health insurance data with respect to number of admissions, referrals, and costs. A special survey of emergency cases is included.
3. A survey of a sample of 1,683 patients of the group practice with respect to their preference patterns, their knowledge about the practice itself and their subjective evaluation of the group practice (questionnaire and interviews).

A factor analysis relates these responses to the patient's socio-cultural background (52).

Adjustment in nursing homes

During 1972, Dr W. Vanden Heuvel from the Centre for Gerontology of Nijmegen started a research project for the *Institute for Social Medicine* of Nijmegen University to study the adjustment process and problems of patients in nursing homes.

This analytical and developmental research was supervised by Professor M. Albinsky and Dr J. Munnichs.

In the first part the author defines the concept of adjustment as the relation between the individual and the environment.

Three types of adjustment measures are operationalized: co-operation, anomie, and conflict.

These measures are tried out in a field experiment involving seven wards and 113 patients.

Actual adjustment measures are obtained from the data by use of a factor analysis. Subsequently, an automatic interaction detecting technique is used to develop a model of which patients will show what adjustment of behaviour.

The main behaviour determining factors are enumerated (58).

Survey of institutionalized visually handicapped children

In 1970, the *Dr Veeger Institute* started a survey of all institutionalized visually handicapped children as of 31 December 1970.

This descriptive and application-oriented research was funded by the institutions themselves. The research staff of five, all members of the Institute, was supervised by Dr P. Heydendael and F. Boersma.

1,364 children in 17 institutions were observed according to age, sex, regional origin, type and level of the handicap, education, additional handicaps, intellectual level, pre-institution family life. The results are tabulated and some tentative prognoses are developed (27).

Assimilation of elderly persons in nursing homes

In 1972, the *Centre for Gerontology* of Nijmegen University started a one-year research project funded by the Fund for Prevention to investigate the process elderly persons go through in adapting to the nursing home environment.

The research staff included seven members of the Centre itself and was directed by Dr W. Vanden Heuvel.

The project staff also sought help from the Joint Institute for Applied Psychology, primarily with respect to the analysis of the data. The methodology of this project consisted of an operationalization of the sociological variables which influence the assimilation process. These variables refer to the elderly person himself as well as to the institution.

Data was collected on eight selected institutions and 151 elderly persons according to the variables defined.

A factor analysis technique was used to analyse the data in this analytical and developmental research.

It is interesting to note that the Pincus scale, which was developed in the USA to characterize the institutional climate, did not prove very relevant with respect to the Dutch situation (59).

Ageing, social relations, and health

In 1969, the *Centre for Gerontology* of Nijmegen University at the request of the Dr Veeger Institute, started a four-year research project funded by the Fund for Prevention to investigate different problem areas with respect to a regionally defined population.

The project staff, all members of the Centre, also requested the help of the Joint Institute for Applied Psychology, mainly with respect to the analysis of the data.

The problem areas covered by the staff were:

1. The human reactions to ageing.
2. The effect of ageing on the individual's social relationships.
3. The effect of ageing on the individual's health perception.

The methodology of this analytical and developmental research is based on:

1. The development and the operationalization of relevant scales.
2. A semi-longitudinal data collection experiment involving in the first year 564, in the second year 420, and in the third year 291 persons.
3. The statistical analysis of the data collected.

Sixteen variables measured with reference to 495 items were used in the study.

Some of these variables were: perception of ageing, health status,

intelligence, household validity, financial situation, loneliness, etc. The techniques used to develop the scales and their measurement are, for instance, multidimensional scaling, cluster analysis, etc. The technique used to analyse the data resulting from the experiment is factor analysis (67, 68).

Pre-project study on the evaluation of the functioning and organization of post-hospital care in Amsterdam

In 1971, the *Institute for Applied Sociology* of Nijmegen University received a one-year grant of £9,000 from the Ministry of Health and Environmental Hygiene to investigate the effect of post-hospital care as a link between hospital and home care for hospital patients.

The project staff under the directorship of Dr J. Hutjes used interview techniques and medical record techniques to study these effects.

Staff members of the national and local home care organizations, the Post-Hospital Care Organization in Amsterdam, the health insurance companies, and the Ministry of Health and Environmental Hygiene supervised the project.

This descriptive and developmental research involved a survey of some 1,000 patients and a series of open interviews with staff members of interested organizations.

A definitive evaluation procedure has been developed though it has not further been implemented.

Opinions about and use made of Cross Associations

In 1970, the *Institute for Applied Sociology* of Nijmegen University received a three-year £30,000 research grant from the Fund for Prevention and the Association of Home Care Organizations to investigate the opinions about and the actual use made of the home care services provided by the Cross Association.

The project staff, under the directorship of Dr J. Hutjes, used primarily a specially developed questionnaire and existing data to investigate these problems.

A national sample of some 1,500 members of home care associations has been surveyed.

Staff members from the home care associations as well as from the Dutch Institute for Family Practitioners supervised the project. The main topics were:

1. The membership of the home care organizations.
2. The actual use of home care services.
3. Opinions about home care services.

This descriptive and retrospective research did develop a complete picture of these home care organizations.

Function and role of the home care nurse

In 1971, the *Institute of Applied Sociology* of Nijmegen University received a four-year £31,000 research grant from the Fund for Prevention, the Association of Home Care Organizations, and the Ministry of Health and Environmental Hygiene to investigate the function and role of home care nurses.

The project staff, under the directorship of Dr J. Hutjes, used primarily three specially developed questionnaires (one for the home care nurse, one for the general practitioner, and one for the patient) and classic analysis techniques to investigate:

1. The way in which home care nursing needs are defined by the home care nurse, the general practitioner, and the patient himself.
2. The home care nursing process itself and the role of the care providers.

Staff members of the home care associations as well as from the Dutch Institute for General Practitioners supervised the project.

This descriptive and application-oriented research involves a sample of 500 home care nurses, 1,000 home care cases, and about 600 general practitioners.

Organization and technology in institutions for the mentally retarded: an empirical and comparative analysis

During the period 1970-2, the *Institute for Scientific Social Research* of Tilburg University received a grant from the Fund for Prevention to investigate the relationship between organizational structure and technology in institutions for the mentally retarded.

The research staff, principal investigator being Dr P. Damen, director being Professor R. Demoor, was helped by the Institute's scientific team and was advised by Professor C. Lammers from Leyden University.

This comparative, analytical, and developmental research is de-

veloped around the following hypothesis: medical technology is related to and dependent upon the organizational structure of the institutions for the mentally retarded.

Technology is subdivided in routine and flexible technology, and is discriminated by the use of the inmate management scale of Raynes. The organizational structure is scaled along either a more pyramidal stratified control structure with a mechanic organizational regime or a more polyarchic control structure with an organic organizational regime. The concurrent types of leadership are also included.

Two selected institutions are looked at and forty-five wards in both these institutions are analysed.

The research staff concludes that the quality of the therapeutic climate is best enhanced by the organic type of organizational regime which indeed results in a flexible technology (13).

A socio-demographic analysis of hospital provisions in the 'het Gooi' region

During the period 1970-1, the *Institute for Scientific Social Research* of Tilburg University started a research project to investigate the alternatives for co-operation among the 'het Gooi' hospitals and this from a socio-demographic point of view.

The Foundation of the 'het Gooi' hospitals which funded the project requested a similar project from the *Joint Institute for Applied Psychology* with respect to the organizational and structural aspects of the same alternatives for co-operation.

The research staff included A. Vossen and W. Diercksens and was advised by A. Vermeulen, Professor J. Stolte, and J. Godefroy.

The methodology of this prospective, comparative, and developmental research is divided into several parts:

1. An analysis of the geographic and functional role of the existing acute care hospitals and the development of the relevant variables and indicators.
2. The development of a scenario of future developments of these same hospitals.
3. The analysis of the influence and implications of existing specialized institutions (for example, psychiatric hospitals and nursing homes) upon the acute care hospitals.
4. The development of alternative projections and the possibilities

for co-operation for each of these alternatives. The projections are made for different hypotheses with respect to the health care evolution in the region.

The analysis was based mainly on existing data: census data, hospital activity data, and professional activity data (18).

An inquiry about mental retardation

In 1966, the *Institute for Scientific Social Research* of Tilburg University received a research grant from the Ministry of Health and Environmental Hygiene (some initial funds were also provided by the Council of the Institutions for Mentally Retarded) to evaluate and quantify the need for facilities for the mentally retarded. In 1971 this grant amounted to £13,000.

Many staff members of the Institute, under the project directorship of Dr F. Sorel, have been involved with this analytical and developmental six-year research effort.

However, as the criteria to determine the population needs for facilities, based upon the incidence rates of mental retardation do not exist, so the authors note, the project restrains itself to an enormously extensive survey of two samples of mentally retarded:

1. 651 children from birth to 13 years old.
2. 1,051 adults 16, 19, 25, 34, 40, and 50 years old; with respect to:
 - (a) Their psychological behaviour: Vineland social maturity scale; Wechsler Intelligence scale for children; Merrill Palmer scale (Scutsman scale).
 - (b) Their sociological behaviour: family burden; environmental deficiencies; social guidance and subjective guidance needs.
 - (c) Their medical status: somatic needs including dental care, congenital deviations, etc.; psychiatric needs based upon stress, neglect, etc.

The quite voluminous data have been extensively tabulated and analysed primarily by use of the factor analysis technique. An inventarization of the care facilities for the mentally retarded in Amsterdam was worked out concurrent to the above survey.

Assistance with the project work was also sought from the Council for Health Research: TNO (49).

Caring together

In mid 1966, the *Foundation of Co-operative National Cross Organizations and the National Family Practitioners Association* requested the Ministry of Health and Environmental Hygiene for an eighteen-month research grant to run some experiments to increase the co-operation between home care nurses and general practitioners and to evaluate some experiments. The research staff constituted by Dr W. Frankenberg, Ir. H. Pijlman of the Dutch Institute for Family Practitioners, and D. Van Kueveld of the *Institute for Social Psychology, Groningen*, implemented the recommendations put forward by an advisory board which was constituted by both sponsoring organizations.

Though the original objective was to evaluate the effect of co-operation on the quality of care delivered, the researchers had to settle for an evaluation of the effect of co-operation on the nature and frequency of the general practitioners-home care nurse and patient-home care nurse meetings.

An extensive questionnaire was used in a single case experiment involving four family practitioners and four home care nurses. Results obtained from the experiment have been introduced subsequently in similar settings (45).

Measuring the degree of functional disability: a stepping stone for the family practitioner's care for elderly patients

During the period 1967-8, the *Dutch Institute for Family Practitioners* started a research project which aimed at developing a tool to improve the general practitioner's care for the elderly patient.

The research staff included Dr F. Vandenbussche and Dr W. Ekker, and was advised by other staff members of the Institute.

The methodology of this experimental and application-oriented research used the single case method.

In this single case the effectiveness is analysed of:

1. Multiple screening.
2. Functioning scale of S. Katz (activities of daily living): adapted version.
3. The general practitioner's off the cuff experience.

A sample of 96 (48 institutionalized and 48 non-institutionalized) elderly patients with respect to some of the major diagnoses is used for this analysis. Recommendations are included.

A combination of multiple screening and the adapted functioning scale gave best results though this technique still required an additional investment of time (57).

The effects of multidisciplinary co-operation

In November 1973, the *Dutch Institute for Family Practitioners* started a research project to investigate:

1. The problems of setting up professional and multidisciplinary co-operation.
2. The effect of this co-operation on the health care process.

Its methodology consists of a literature survey conducted by C. Wachters-Kaufmann.

This analytical and application-oriented research aims at developing the criteria for effective co-operation.

The conclusions are brought together in a recent publication.

A medical decision model

In 1973, the *Dutch Institute for Family Practitioners* started an analytical and developmental research effort to investigate the patient's decision for selecting a particular general practitioner. Patients' complaints are psychosomatically scored by the practitioner and background socio-economic data is collected.

The analysis of the data, done in co-operation with J. Jessen of Groningen University, should reveal the important decision variables of the physician as well as of the patient.

No results are as yet published.

The general practitioner-patient relationship

Occasionally, the research staff of the *Dutch Institute for Family Practitioners* starts a project to investigate particular aspects of the general practitioner-patient relationship:

1. In 1973 a literature survey was conducted on this topic by H. Roelofs Heyrmans.

2. A survey was conducted in 1973 to sample the patient's opinions about his physician.
3. Some working groups have been formed in order to develop therapy strategies to deal with chronic patients.

The role of the psychologist in primary care

In 1972, the *Dutch Institute for Family Practitioners* started a prospective, developmental research project to investigate the effectiveness of a psychologist in primary care.

Several areas where the psychologist could effectively contribute have been identified and funds are now sought from the Health Insurance Agencies Council to run some thirty experiments in this respect in close co-operation with the Committee on Medical Psychology of the Institute and the Dutch Institute on Psychology. Another parallel project involves one psychologist working with six solo practitioners, and one psychologist working with five general practitioners in one health care centre.

An inquiry into referral patterns

At the beginning of 1973, the *Dutch Institute for Family Practitioners* started a still unfunded four-year research project to investigate those factors which influence the general practitioner's referral patterns in relation to the availability of hospital facilities, the patient population, and the availability of specialists.

Philipsen's model (necessity, need, and possibilities) will be used in this descriptive and developmental research project. Three experiments are anticipated:

1. Development of a diagnostic centre to co-ordinate regionally the general practitioners' diagnostic and therapeutic instruments.
2. Introduction of consulting procedures between general practitioners and specialists (this consulting will not involve any individual patients).
3. Training courses to improve the general practitioner-medical specialist communication.

No results are yet available.

The general practitioner's professional activities

Occasionally, the research staff of the *Dutch Institute for Family Practitioners* investigates particular problems or possibilities in re-

lation to the general practitioner's professional practice. Several topics have been addressed already:

1. The transmission of electrocardiograms by telephone.
2. The development of a diagnostic centre with a view to the evolution into a screening centre (1972).
3. The diagnostic tools available to the general practitioner (for example, the Lange test).
4. The effectiveness of particular therapeutic instruments for family practice, for example tranquillizers, oral penicillin, etc.

Veenendael project

In 1973, the *Dutch Institute for Family Practitioners* started an analytical developmental research project to investigate which patients will select the newly introduced general practitioner in an established group practice.

The data which has been collected in the Veenendael experiment on the patients as well as on the physicians is now being analysed.

The modern hospital on a human scale

In mid 1968, the *Task Force 2000*, founded in 1965 by A. Thiadens, started a major three-year research effort to develop the criteria necessary for establishing modern and humanized hospitals.

This research project was funded by the Ministry of Health and Environmental Hygiene. For 1971, this funding amounted to £19,500.

Many top-ranking hospital experts and quite a number of health care users or user groups have been involved in this project.

The methodology of this descriptive, prospective, and developmental research uses primarily the Task Force approach. Different groups constituted by experts addressed themselves to different aspects of the problem. Recommendations, guidelines, and criteria were established by each group, based upon:

1. Their individual experience.
2. The analysis of this experience by the group as such.

The areas for which recommendations are developed are:

1. The problem formulation itself.
2. Integrated health approach.

3. Scaling of health and sickness.
4. Health criteria.
5. The function and role of the medical practitioner.
6. The function and role of the nurse.
7. The patient and his environment.
8. The hospital and its setting.
9. Extramural care.

Following this prospective research a model of an idealized hospital is developed which is called a 'hospital protostructure'. This model consists of three parts:

1. An extensive descriptive analysis of the functions of the modern human hospital.
2. A detailed elaboration of these functions, taking into account buildings, spatial, organizational as well as educational constraints.
3. Subsequent to previous elaboration a detailed, very concrete and quantified set of requirements and demands (51).

Health education project

In 1968, the *Task Force 2000*, initiated a research experiment which received initial grants from the Ministry of Health and Environmental Hygiene and which aimed at motivating the health care providers as well as the health care users for a greater sense of common responsibility for the patient.

Up until 1972, the research staff concentrated on the development of requirements which should be taken into account in any new hospital in order to modernize and humanize these hospitals.

Around 1972, the direct educational objectives gained in importance. The methodology of this experimental and developmental research is primarily concerned with the implementation of tentatively formulated expert recommendations with respect to all aspects of medical care. Occasionally, some data is collected to justify some of the recommendations.

The emphasis on implementation results however, in an extensive array of publications, seminars, discussion groups, and poster-type designs, which are all used as tools to motivate and educate all involved (52, 53).

Pre-project study on the co-operation between home care nurses and mental health services

In 1974, the *Institute for Applied Sociology* of Nijmegen University received a one-year £3,700 grant from the Ministry of Health and Environmental Hygiene to investigate on a small scale the co-operation between home care nurses and mental health services in a medium-sized town.

The project staff was under the directorship of Dr J. Hutjes. The methodology of this descriptive and developmental research consists of:

1. Open-end interviews with executives in the field of social and mental health services, home care nurses, general practitioners, and social workers.
2. An activities survey of home care nurses with respect to their contacts in and outside the field of health services with relation to the psycho-social problems of their patients.

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Acknowledgements

Many people and organizations helped make this study possible. The original idea, to conduct a survey on health services research efforts on the European continent was mooted by Gordon McLachlan, secretary of the Nuffield Provincial Hospitals Trust. He identified, rightly, in view of the enlargement of the EEC, the need for a closer view on national efforts in health services research and the potential for increased collaboration and exchange through better information and enhanced visibility.

We are grateful to the Trust for making the study possible and for the help, advice, and encouragement throughout the period of the project including the production of this report. We wish to thank in particular Tony Vanheusden who devoted one year to the collection and retrieval of information on health services research activities in the survey countries. His inquiries, mail survey, and site visits were a fundamental input to the study. We will remember the dedication and the enthusiasm that he brought to this undertaking. John D. Thompson, at the time of the survey, on leave from Yale University and visiting Professor at Leuven University has been most helpful in the design of the study and in the conceptualization of descriptive categories of health services research. We are indebted to him for his probing, critical, and sympathetic contribution to the study. Our colleagues at Leuven University, Renee Boelaert, PhD, Yvo Nuyens, PhD, Pol Quaethoven, PhD, and Jozef Van Langendonck, PhD, acted as advisors to the study and analysed a great number of research projects relevant to their particular discipline and experience, and we wish to record our deepest appreciation.

Without the collaboration and encouragement of the researchers

who submitted information this report could not have been completed. We hope, and there is already some encouraging evidence, that this report will be a helpful instrument towards more exchange and contacts between researchers.

Finally, special thanks must go to Ms Erna Philips, Ms Christine De Keyzer, Ms Mia Veugelen, and Ms Monique Pauwels for the typing and production of the manuscript.

JAN BLANPAIN and LUK DELESIE

April 1975