

# INVESTING IN HEALTH

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## BENCHMARKING HEALTH SYSTEMS

Ellen Nolte, Suzanne Wait, Martin McKee



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# FOREWORD

The Nuffield Trust supported two fellowships in benchmarking, one at Cambridge (Dr Suzanne Wait) concentrating on the UK system, and one at the London School of Hygiene and Tropical Medicine (Dr Ellen Nolte), on the topic of international benchmarking. This report combines the findings of their research.

The fellowships were very productive, leading to publications from each of the fellows for the Trust, as well as many articles, presentations and workshops. This, their final report, synthesises the work carried out at LSHTM and Cambridge. Aimed at UK policy-makers and academics nationally and internationally, the report highlights key lessons learnt from the research carried out and identifies an agenda for future activities so as to develop approaches to (international) benchmarking in health further. The report draws further on the discussions at a Nuffield Trust workshop held in January 2006.

Some of the measurement systems used in health policy have seemed blunt instruments when it comes to improving the health service, and as Kieran Walshe put it “a lot of measurement but not much understanding, lots of data but little change”. Policy making needs to become more sophisticated in its use of benchmarking, and this report points towards how that might be achieved.

The Trust is very grateful to Suzanne and Ellen for all their work, to the Judge Business School, to the London School of Hygiene and Tropical Medicine, to the contributors to the workshop and to Martin McKee for overseeing this project.

Kim Beazor  
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# INTRODUCTION

The health care sector represents one of the largest service industries in developed countries. Its output accounts for about 7% of GDP in the EU-15, more than the financial services sector or retail trade sector, which account for approximately 5%.<sup>1</sup> The final output of the health sector – ensuring a healthy population – has an impact on the productive capacity of the workforce and the prosperity of the population in general.<sup>2</sup> Trends in productivity and efficiency of health care will thus impact on the economy as a whole.

A recognition of the importance of maintaining an efficient and effective health care sector has driven efforts to develop suitable metrics to monitor the performance of health care systems. At the same time, there has been an increasing interest in the possibility of learning from the many experiences of others, drawing lessons on how to finance, manage, and organise health care so as to improve health system performance. Performance assessment gained particular momentum with the publication of the World Health Report 2000 and its ranking of the world's health systems,<sup>3</sup> stimulating a wide-ranging debate about approaches to assessing health system performance and benchmarking competing systems or organisations both nationally and internationally.<sup>4</sup>



# **BENCHMARKING: THE CHALLENGES OF MEASUREMENT**

Identifying simple, practical and understandable ways to assess health (care) system performance, with its complex interlinked dimensions, remains a challenging goal. Health systems are complex, with multiple functions. They must respond to the varied health needs of the population with limited resources. They involve trade-offs, for example between prevention and treatment or primary and specialised care. It is thus unlikely that any system will perform well on all possible measures. In response, performance assessment frameworks are now increasingly using a range of indicators that seek to capture the different aspects of health systems.<sup>5</sup> Examples include the OECD Health Care Quality Indicator Project (HCQI), which has evolved from the Commonwealth Fund International Working Group on Quality Indicators initiative (CMF QI).<sup>6,7,8</sup> These initiatives seek to develop a common set of quality indicators (QI) for use in cross-national comparisons of health care systems.

However, while offering valuable insights into different health (care) systems, current approaches to performance assessment and benchmarking are facing numerous challenges. These are related to underlying definitions and availability of data, selection of indicators, methodological issues, interpretation of data, variation in information needs of different users, and possible time lags between interventions and outcomes.<sup>9</sup>

Many of these conceptual and methodological challenges are exemplified by the World Health Report 2000.<sup>3</sup> These include, for example, its reliance on a wide range of assumptions in the absence of actual data, the difficulties of linking health outcome measures to activities in the health care system, and the lack of specificity associated with composite indices to assess health system performance.<sup>10</sup> Thus, many commentators expressed concern that the use of composite indices took insufficient account of the multifunctional complexity of a health system.<sup>11</sup>

The issue of data is at the heart of the problem. Ever more refined approaches will continue to face the major challenge of availability of suitable data. It has been suggested that the

selection of many performance indicators often seems to reflect what is available and practical rather than what is meaningful.<sup>12</sup> This is in part because data are often derived from existing health information systems which were originally devised for internal mechanisms of financial control and may thus be poorly adapted for purposes of performance assessment. Limited scope of minimum data sets, inaccuracies in interpretation of aggregated data, failure to integrate population- and patient-level data and lack of linkage between diagnostic data and outcomes of care are some of the main drawbacks reported in existing health information systems.<sup>13</sup> With these caveats in mind, the value of performance initiatives could be greatly enhanced if target indicators were selected for their relevance and usefulness as evaluation tools rather than merely on data availability.

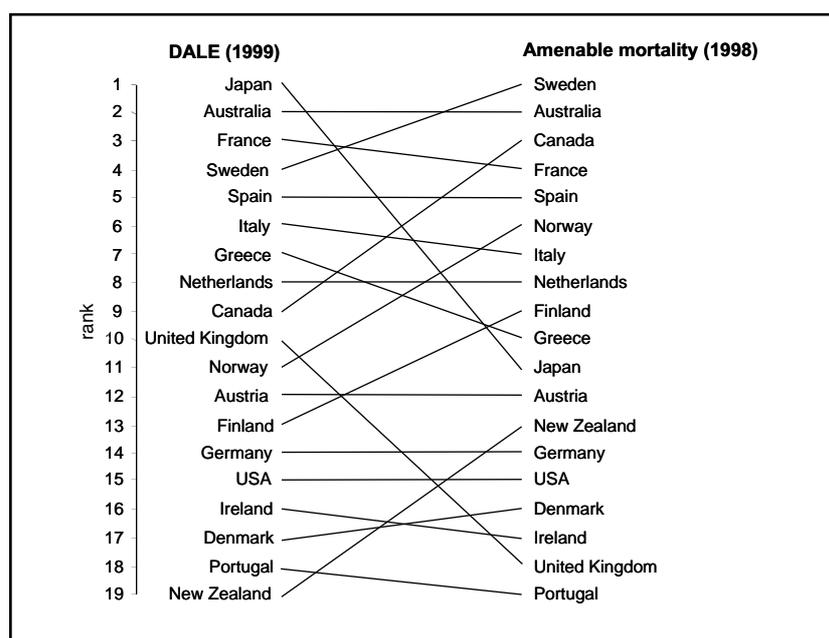
# ATTRIBUTING OUTCOMES TO HEALTH CARE

A particular challenge concerns the question on whether and how the measures adopted for assessing performance conform to the underlying definition of the health (care) system. For example, the World Health Report 2000 defined three measures on which to assess the performance of health systems: health attainment, responsiveness and fairness of financing.<sup>3</sup> Health attainment was further defined as healthy life expectancy (or DALE: disability-adjusted life expectancy), i.e. the length of time that someone can expect to live in good health. This measure has the advantage that it can be obtained for many countries. However it also has an important weakness: Many of the determinants of (healthy) life expectancy lie outside the health care sector. Thus, the measure of health attainment reflects not only those policies and resulting inputs whose primary intent is to improve health but also policies in a wide range of other sectors, such as education, housing and employment, where the production of health is a secondary goal.

We have previously examined how health systems perform when attainment can more directly be attributed to health care.<sup>14</sup> We have used the concept of ‘avoidable mortality’ which is based on the notion that deaths from certain causes, and at certain ages, should not occur in the presence of timely and effective health care.<sup>15</sup> Introduced in the 1970s as a means to assess the quality of health care<sup>16</sup> it was adopted by a wide range of researchers especially in Europe,<sup>17</sup> producing for example the “European Community Atlas of ‘avoidable death’”.<sup>18</sup> Much of this work dates back to the 1980s and early 1990s; only recently has this concept been revitalized as a potentially useful tool to assess the quality and performance of health systems<sup>15</sup>, subsequently taken up by several researchers.<sup>19-22</sup>

Building on this work, we revisited the 2000 World Health Report with its rankings of the world’s health systems, using a modified version of what we have termed “amenable” mortality by updating the list of conditions considered responsive to health care in the light of advances in medical knowledge and technology and considering age 75 as upper limit

for premature mortality.<sup>14,15</sup> We calculated death rates from amenable mortality for a total of 19 OECD countries for which we had data available for the year 1998 and based on this we have produced a ranking of the countries involved. We then compared our ranks with those by the 2000 World Health Report based on disability-adjusted life expectancy (DALE) for the year 1999 (Figure 1).<sup>3</sup> Perhaps not surprisingly, rankings changed for almost all countries that were included in the analysis, illustrating that performance measures very much depend on the concepts that underlie them.



**Figure 1** Comparison of rankings based on disability adjusted life expectancy (1999) and age-standardised death rates (0-74 years) from mortality amenable to health care (1998) in 19 countries [adapted from 14].

Incorporation of the concept of amenable mortality into the methodology used to generate the rankings of health systems in assessments such as that in the World Health Report 2000 could thus be an advance on the current situation. However, this would not address one of the major criticisms of such comparisons, that they do not indicate what needs to be done when faced with evidence of sub-optimal performance. This requires a more detailed analysis of the specific issues facing health (care) systems.

One approach that shows promise is the concept of tracer conditions, in which selected amenable causes are the focus of careful study of the responses of health systems. This was proposed by the US Institute of Medicine (IoM) in the late 1960s as a means to evaluate health policies.<sup>23</sup> The tracer concept, as described by the IoM, was borrowed from natural sciences and translated for use within the health care delivery system. It was based on the premise that certain tracer conditions or diseases would make it possible to examine how the health care delivery was functioning, and so assess its quality. The tracer conditions would have to be discrete and identifiable health problems and offer a means to provide insight into how particular parts of the system work – not in isolation but in relation to each other. They would have to have definitive functional impact (i.e. treatment was

necessary and without appropriate treatment a functional impairment would result), the natural history of the condition should vary with utilisation and effectiveness of medical care; prevalence rates should be high enough to permit collection of adequate data.

One example for such a tracer condition could be vaccine-preventable diseases such as measles, providing insights into public health policies. Measles remains an important preventable health problem in several industrialised countries. For example, in 2002 the incidence was 8.7 per 100,000 in France and 5.7 per 100,000 in Germany, while the rate in the United Kingdom was 0.5 per 100,000, with no cases in Finland.<sup>24</sup> Diagnosis of the reasons for 'failure' of a particular health system is of course the next challenge. Thus, in this example, differences in measles incidence between countries have been attributed, in part, to the fragmented system of provision associated with social insurance systems compared with more integrated programmes in tax funded systems,<sup>25</sup> although as the experience of the USA shows, where non-imported measles has effectively been eliminated, it is possible to superimpose programmes that work in a fragmented delivery system.<sup>26</sup>

We have adapted this approach examining the use of diabetes as a measure of the performance of health systems.<sup>27</sup> Previous studies have interpreted diabetes deaths among young people as 'sentinel health events' that should raise questions about the quality of health care delivery.<sup>28</sup> The optimal management of diabetes requires co-ordinated inputs from a wide range of health professionals; access to essential medicines and monitoring; and, ideally, a system that promotes patient empowerment. Measures of diabetes outcome can therefore provide important insights into primary and specialist care, and into systems for communicating among them.

Using this approach we generated a measure of "case-fatality" among young people with diabetes using published data on diabetes incidence among young people for the period 1990-1994 and mortality under the age of 40 for the period 1994-1998 in 29 countries. We found an over 10-fold variation in the mortality-to-incidence ratio, an observation consistent with findings of cohort studies of mortality among young people with type 1 diabetes. The mortality-to-incidence ratio for diabetes thus appears to provide a means of differentiating countries on quality of care for people with diabetes. While solely an indicator of potential problems, it forms a basis for stimulating more detailed assessments of whether such problems exist and what can be done to address them.



# HOW BENCHMARKING FEEDS INTO POLICY

There are now several examples of national and international benchmarking initiatives, as described above. However, one key question emerges: do benchmarking and performance assessment indeed guide health policy towards promoting continuous improvement of targeted outcomes? Whilst performance measurement *per se* is thought to lead to improvements in health care, “the jury has not yet returned a verdict on whether performance measurement data are being used by stakeholders for better decision-making”.<sup>29</sup>

For example, a recent review of the impact of the annual performance ratings of NHS trusts in England between 2001 and 2005 indicates that the assessment system did improve reported performance on key targets such as hospital waiting times.<sup>30</sup> However, the review also revealed that in some cases the improvements in targeted performance were made at the expense of poor performance in non-assessed areas or were undermined by different forms of gaming such as data manipulation. An earlier review by the UK House of Commons Select Committee of the role of performance targets in public services in the UK highlighted that failure to link policy objectives, targets and indicators risks undermining the credibility of any benchmarking initiative.<sup>31</sup> The Committee noted that “[t]argets [or indicators] should never be accepted as a substitute for a clearly expressed strategy and set of priorities [...] Targets can be good servants, but they are poor masters.”

Indeed, there has been rising concern that the use of performance/benchmarking indicators has become an end in itself and that there is a need to evaluate existing indicator systems.<sup>32</sup> Such evaluations are required to assess the impact and validity of the indicator systems used, their contribution to increasing accountability through the performance management process and their ability to reflect the goals and objectives set out by the health care system.

Following this rationale, there is thus a need for frameworks for health system performance to be based on *policy objectives*, as opposed to be data-driven. Benchmarking frameworks

need to be structured conceptually. Recognising this, the OECD has recently begun to more specifically define a conceptual framework as a basis for its Health Care Quality Indicator Project (HCQI).<sup>33</sup>

The starting point for evaluation should be the policies and objectives that one wishes to evaluate.<sup>34</sup> The collection of data that may appropriately and reliably reflect progress against these goals can then follow as a second step.

## A WAY FORWARD?

Given the many challenges related to benchmarking, there is a persuasive argument to consider discontinuing the process of measurement and comparison altogether. We would argue, however, that there is indeed value from benchmarking and discuss potential avenues for a way forward in the following section. This discussion centres around two main observations emerging from the previous sections: (1) the need to understand the limitations as well as the benefits of existing benchmarking and performance assessment frameworks, and (2) the need to understand better the policy process and to identify policy models that are suitable to support benchmarking initiatives.

### *Why do we compare health systems and who benefits?*

Interest in cross-national comparisons of health care systems can be traced back to the 1930s, a major goal being to inform developments in national health policy.<sup>35,36</sup> More recently, the notion of learning from the experience elsewhere has been supported further by the work of OECD on international benchmarking of health care systems with a series of international studies published from the mid-1980s, as a means to provide an empirical basis for a comparative understanding of the differences and similarities between OECD countries' health systems.<sup>37,38</sup>

It is important to recognise that the organisation and funding of health systems vary widely; at the same time many countries are facing similar challenges and are striving to achieve similar goals: ensuring accessible health care of high quality that is responsive, affordable, and financially sustainable. Countries have employed a variety of approaches to address these challenges. The benefit of cross-national comparisons can thus be seen in its potential to capture the range of different approaches and varying levels of success in health care that may allow the experience of each country to provide “an experimental laboratory for others”.<sup>39</sup> International comparisons offer potential to consider alternative options, an opportunity for mutual learning and reconsideration of own policies, cross-fertilisation or even policy transfer where appropriate.

*The need for information intelligence*

The potential difficulties facing comparisons, be they between or within countries, have already been mentioned. Moving forward, it will be important to overcome the temptation of drawing simplistic conclusions from comparisons (nationally and internationally) and to put systems in place to minimise the opportunistic behaviour that they often give rise to, whereby pursuit of what is measured is at the expense of what is desirable.<sup>30</sup> There needs to be a more nuanced approach to comparisons that is timely and is based on a detailed understanding of the nature of systems and sub-systems and the settings in which they are embedded. There is a particular need for information intelligence, i.e. understanding the underlying data and their limitations and learning to discern longitudinal trends, in addition to assessing patterns cross-sectionally. There is certainly some benefit in knowing how hospital X is performing in comparison to hospital Y; yet it is equally important to ascertain any change in performance over time. This requires some stability in the contextual framework for assessment; the continuous change of indicators and updating of targets as seen in England highlights the challenge of developing replicable datasets that allow meaningful assessments of a given situation over time.

*Building effective performance management systems*

Reviewing the experience of performance assessment instruments introduced into the English health care system since the late 1990s, Smith concluded that a performance management system to be effective would require (i) coherence, (ii) capacity and (iii) clinical engagement.<sup>40</sup> *Clinical engagement* suggests that, to be credible and drive change, performance measures need to be endorsed and valued by those effectively delivering services on the ground – clinical and managerial staff alike. *Capacity* suggests that the health care system has to have the structures and skills in place to accommodate a performing benchmarking system and ensure that it meets its objectives. The enhancement of health information systems is one step to improving capacity. Training of all actors involved in performance assessment and benchmarking – from the selection of indicators to data collection and interpretation – is also needed.

Finally, *coherence* implies that benchmarking initiatives need to fit in with other external review systems (accreditation, audit, evaluation, regulation) in place within the health care system, ensuring that their roles are complementary and not overlapping. Such efforts may help reduce the perception of ‘inspectorial overload’ and ‘target fatigue’ often voiced from clinical staff and managers at lower levels in the health care system. Furthermore, international comparisons that fail to take account of contextual factors as they relate to underlying regulatory and evaluative policies may be misleading.

*Developing a culture of continuous improvement*

The English Department of Health recently took an important step towards developing a more structured approach that allows the development of a culture of improvement that involves rewarding good performance. This has included the development of a system that comprises a set of 24 essential or ‘core’ standards that all healthcare organisations in England that treat NHS patients should be achieving, and 13 developmental standards that

they should be aiming to achieve in the future.<sup>41,42</sup> This approach has been integrated into a revised performance assessment framework (“Annual health check”) comprising a two-stage approach that requires healthcare providers to meet core standards and existing targets (“getting the basics right”) and also allows for the evaluation of any progress that organisations have achieved (“making and sustaining progress”).<sup>43</sup> The new system is still being implemented and it is too early to tell whether it will succeed. Regardless, it is a promising step towards a more nuanced approach to performance assessment and development.

### *Using benchmarking to guide policy*

Examining the international experience in performance measurement, Kieran Walshe recently observed that there was “a lot of measurement but not much understanding, lots of data but little change”.<sup>12</sup> If benchmarking is to guide policy, there is a need to move beyond purely descriptive comparisons and identify answers to the ‘what do we do about it’ questions on the basis of comparative statistics. This requires the use of indicators that are capable of reflecting the complexity inherent in health policy decisions, for example the trade-off that may exist between raising the average and reducing inequalities, as overall gains are achieved by improving the performance of those already doing well, leaving the laggards behind.

Benchmarking information needs to be useful to inform and drive change. Yet to do so, we need to understand the process for implementing policy change and assess how benchmarking data may help drive desired change. There is a particular need to consider theoretical models of change that help identifying the process by which evidence and data are used to drive policy change. One possible model to draw from is that developed by Walt and Gilson (1994). They suggest that policies cannot be divorced from the context within which they are formulated and implemented.<sup>44</sup> Their essential premise is that policy analysis typically focuses too much on the content of policies and neglects the importance of other essential components, such as policy objectives, the actors involved, the processes needed to implement change and the context or processes (social, political, cultural, economic, historical) which may explain why policy outcomes were not achieved.

This model can be used both prospectively (for policy planning) and retrospectively (for policy impact assessment). Applying it to the key policy questions that health care systems are facing may help to reassess the value of decisions being made. It may also support the process of making explicit the strengths and limitations of decisions and the data informing them.

If nothing else, identifying the process by which evidence and data are used to drive policy change will help to focus any data collection effort where it is needed and, potentially, to use data intelligently and scrupulously to drive decisions and policy. This will finally put us in a position to judge how benchmarking is supporting better investments in health and whether it constitutes a good investment in itself.



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