

Briefing

NHS hospitals under pressure: trends in acute activity up to 2022

Acute hospital care consumes almost half of the entire NHS budget. Access to a hospital bed is often seen as a critical indicator of how well the NHS is running, yet the way we use hospital beds is constantly changing. The demands on hospitals are thought to be influenced by a growing, ageing population with an increasing prevalence of chronic health problems, as well as changes in the technology used to diagnose and treat ill health.

At the same time, government health policy is aimed at cutting the number of emergency and other admissions by providing more, better services outside of hospital. This is a major part of the rationale for the government's Better Care Fund, and a key metric of the policy.

In this short paper, produced for the *Financial Times*, we have used historic national data to look at trends in admissions and bed use over the last few years, and have used population projections to explore the likely pressures on hospitals in the future.

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October 2014

Key points

- The total number of hospital admissions in England grew from 12.6 million in 2006/07 to 14.6 million in 2012/13; an increase of 16%. While some of this increase was driven by our expanding and ageing population, there were 60% more hospital admissions than population change would have implied.
- If admission rates continue to increase, the growing and ageing population alone means that the NHS will need at least an additional 6.2 million bed days (overnight stays) by 2022. This is equivalent to approximately 17,000 beds, which equates to about 22 hospitals with 800 beds each.
- This increased pressure is an important component of the funding gap facing the NHS. We estimate the need for such substantial additional productivity may amount to around a quarter of the £30 billion gap facing the NHS by 2022.
- Even if extra money was available, building 22 more hospitals would not be a good decision. The system is ‘running hot’. Yet more hospitals are not the answer.
- To date, attempts to reduce the numbers of people admitted to hospital through better preventive care in their communities have not been very successful on a large scale. A more certain strategy to meet this challenge would be to concentrate on ensuring that patients can be discharged quickly and do not stay in hospital for long periods – an approach that we know has worked in the past.
- Our analysis of the last seven years shows us that despite rising admissions, the number of general and acute beds available in NHS hospitals fell from 126,976 in 2006 to 106,374 in 2013. The extra admissions have been accommodated by reducing the length of time patients stay overnight in a hospital bed – so-called bed days – and through increased bed occupancy, which rose from 85.3% in 2006/07 to 89.8% in 2012/13.
- The total number of bed days in the NHS stayed largely the same over the period 2006–2013. This was achieved both by increased shifts of activity to day or short-stay cases – very often associated with investigative procedures such as scans – and a reduction in the numbers of people staying over 28 days in hospital.
- The story of the last seven years shows us that significant reductions in lengths of stay can be achieved: between 2006 and 2013, lengths of stay for those in hospital for over a month were reduced by 13%. But the future challenge is even greater.
- It is therefore clear that more significant change in the way care is delivered is needed to cope with the considerable pressures on acute hospitals. Such change will require the NHS to make three key changes:
 - Make increasing use of services specifically designed for patients who only need to stay in hospital for a few hours rather than longer inpatient stays, such as further initiatives to expand day-care elective surgery.
 - Substantially improve the way that all departments (and services outside the hospital) work together to ensure patients do not stay in hospital any longer than they absolutely need to, for example by improving discharge arrangements.
 - Widen the range of alternative intermediate services available in community or social care; including making use of beds in nursing homes, hotels or indeed patients’ own homes.

Background

It is now well established that the NHS is currently experiencing the dual challenges of an unprecedented period of constrained funding and an apparently ever-increasing demand for services. We are seeing an ageing and growing population, an increasing number of people with long-term chronic conditions such as diabetes, and evolving health technology.

Many commentators have suggested that NHS services require significant structural change if they are to meet these challenges. One area that has received much attention is the idea that we should rely less on hospitals and more on preventive and community-based services in the future.

These pressures are not new – hospital admissions have been increasing steadily for at least the last decade. How the NHS has met these pressures in the recent past gives an indication of how it might fare in the future. At the very least, it offers a benchmark against which plans and progress can be judged.

This report therefore reviews trends in acute hospital activity (inpatients and day cases) for the period 2006/07 to 2012/13, using hospital episode statistics data, and forecasts what demand may be to 2021/22 based on recent trends and demographic pressure (using Office for National Statistics population data). It also considers the implications of these trends and forecasts for hospitals.

The date of 2006 was chosen as it pre-dates the current period of austerity and therefore allows us to assess the trend over this period of time. We used 2012/13 as the cut-off date for reviewing past trends as only provisional figures for 2013/14 were available at the time of analysis.

In 2012/13, the NHS in England spent £47 billion on care in acute hospitals, which equates to 48% of its entire budget. Most patients are ‘admitted’ for less than a day, either for day-case surgery or for an investigative procedure. Those that are admitted overnight or longer may be in a minority, but they are also the most costly.

In 2012/13, there were over 14.6 million hospital admissions. Though the vast majority of inpatients stay for less than seven days, a small minority (about 1.5%) can be in hospital for more than 28 days. In total, patients spent 37.9 million bed days in acute NHS hospitals in 2012/13. Those staying 28 days or longer used around a third of all bed days.

How have the numbers of admissions changed since 2006?

NHS acute hospitals reported increased admissions over the period 2006/07 to 2012/13, from 12.6 million per year to 14.6 million per year; an increase of 16%.

We know that older people are more likely to be admitted to hospital, and that the numbers of older people in the population are increasing (Figure 1). But as Figure 2 shows, activity rose about 60% more than would be expected given the increase in the age and size of the population during this period.

Figure 1: Absolute and percentage increase in hospital admissions, by age group, between 2006/07 and 2012/13

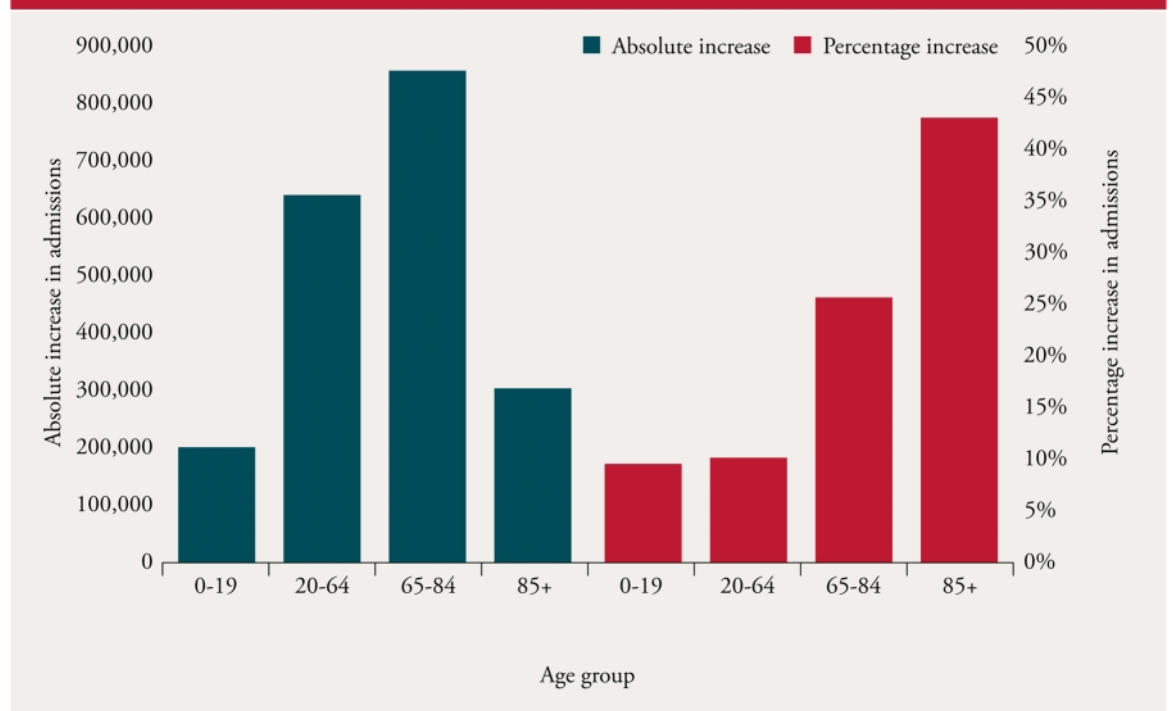
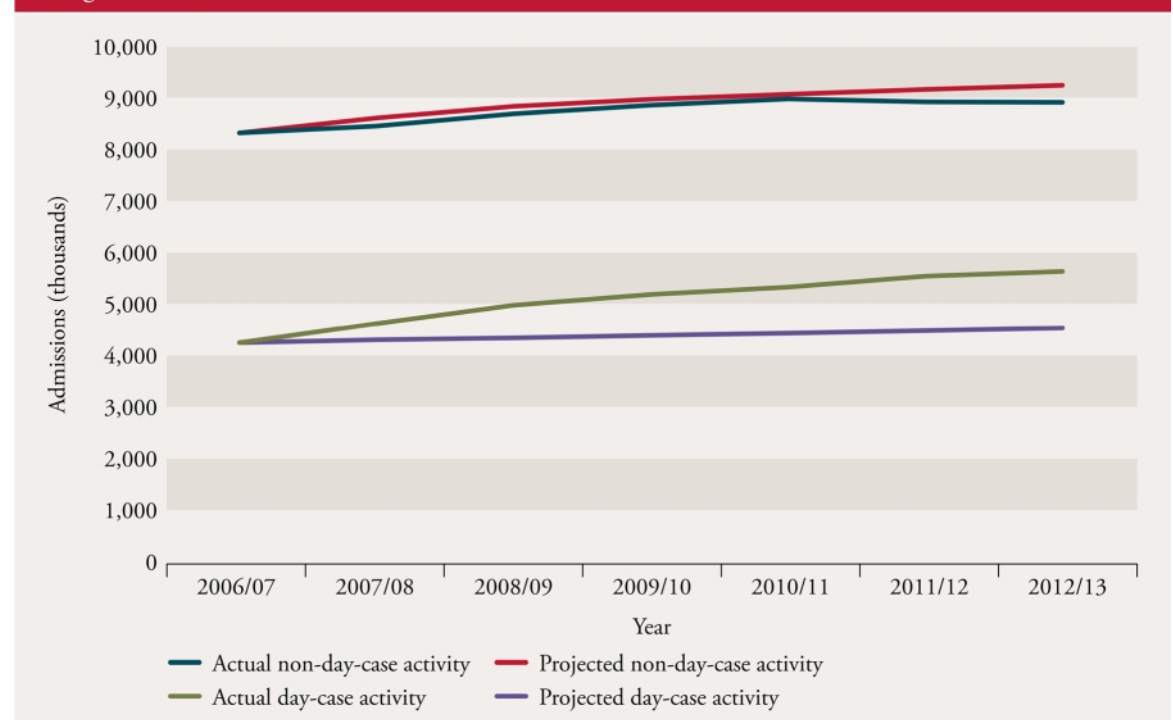


Figure 2: Comparison of actual and projected admissions, based on changes in population (using rates in 2006/07)



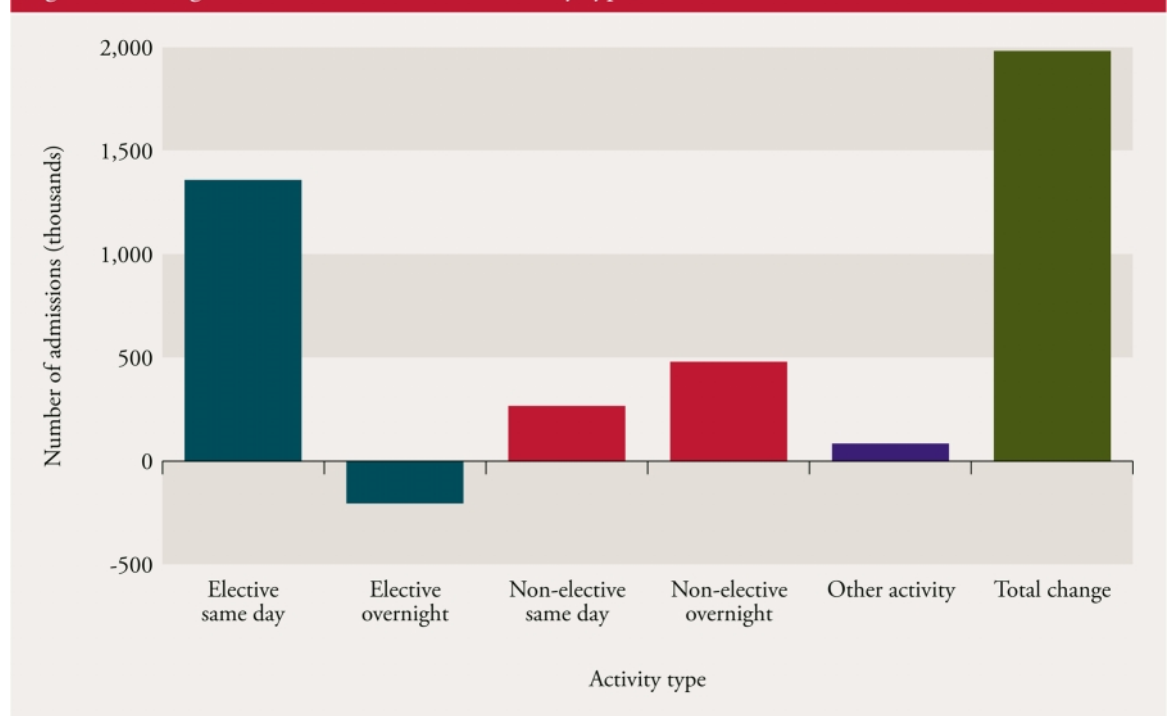
NHS acute hospitals have also seen increasing numbers of emergency admissions of (disproportionately elderly) people; accounting for about a quarter of the increase in overall activity. This has been the source of much concern and is a focus for both policy-makers and management activity on the ground. Reducing the number of emergency admissions has been an objective for some time. Health and Wellbeing Boards (HWBs) are now expected to plan for at least a 3.5% reduction in 2015/16 under the government's Better Care Fund.

Increasing hospital activity has been a source of pressure on hospital and clinical commissioning group (CCG) finances. Acute hospitals have continued to take the lion's share of any growth in CCG (and before them, primary care trust) allocations, with other services such as primary care and mental health suffering accordingly. Even so, hospital finances have deteriorated, with increasing numbers of trusts in deficit (Lafond and others, 2014).

How have the types of admissions changed since 2006?

As Figure 3 demonstrates, two thirds of the overall increase in hospital admissions has been in short stays for investigations and diagnosis, and day cases – so-called elective same day admissions.

Figure 3: Changes in the number of admissions by type, 2006–2013



Improvements in technology have made new forms of diagnostic procedure more accessible. For example, there were nearly 330,000 more CT scans of the head in 2012 than in 2006, and a similar growth in diagnostic endoscopies. It has also enabled patients who previously would have been admitted overnight for surgery to be treated as day cases.

There have also been increasing numbers of emergency (non-elective) cases admitted for less than one day, which reflects changing medical practice (Cooke and others, 2003). In some trusts there is

also evidence that the increase in zero-day admissions is related to efforts to achieve the maximum four-hour wait target in accident and emergency (A&E) (Blunt and others, 2010).

Looking specifically at overnight admissions (people staying in hospital one night or more), it appears that growth in this activity has no more than kept pace with demographic pressure. The additional activity overall has therefore been driven largely by day-case admissions.

Though overall admissions have increased, there were some surgical treatments that declined in activity, for example: 8,000 (46%) fewer vasectomies, which could be explained by these procedures now being largely conducted in community settings; 32,000 (80%) fewer varicose vein operations; and 9,000 (11%) fewer tonsillectomies. But this is counterbalanced by significant growth elsewhere, for example 39,000 (14%) additional cataract operations.

This shift is likely to be due to changing priorities as determined by the National Institute for Health and Care Excellence (NICE), and commissioners seeking to reduce the numbers of 'low priority' treatments. The growth in cataract surgery is likely to be a response both to the ageing population and the need to reduce waiting times.

NHS contracts with the private sector have taken some of the load from traditional NHS hospitals, but this still only makes a small contribution. Non-NHS providers accounted for just 2.5% of NHS inpatient activity in 2012/13, and concentrated on minor surgical and diagnostic cases, where they generally undertook 10% or less of any one procedure. The private sector did, however, make a much larger contribution to hip and knee replacements, accounting for about 20% of NHS activity.

How has bed use changed since 2006?

Though admissions increased during this period, the average length of time patients stayed in hospital fell – suggesting that hospitals have become more productive. As Figure 4 shows, the number of bed days fell by just over 3% between 2006/07 and 2012/13, despite the increases in activity. The total number of bed days used was lower than would be expected given the increase in the age and size of the population during this period.

This greater productivity has come from two main sources. First, as noted above, there was a continuing move to treat more elective inpatients as day cases. This is part of a long-term trend – indeed the number of elective inpatient admissions staying overnight fell by 202,845 (14%) over the period, whereas day cases rose by 1,364,421; an increase of 30% (Figure 3).

Second, there were significant reductions in the number of bed days concentrated in longer-staying patients – those staying over 28 days (Figure 5). There has been little change in the total number of bed days for those staying less than 28 days. Small reductions in the number of such long-staying patients can have a large impact on bed days as they account for only 1.5% of admissions, but nearly 30% of all bed days. For many of these patients, a key factor influencing their discharge will be the availability of alternative care – either in another institution or support for them at home.

Figure 4: Actual bed days used between 2006 and 2013, compared with projected bed days suggested by population projections

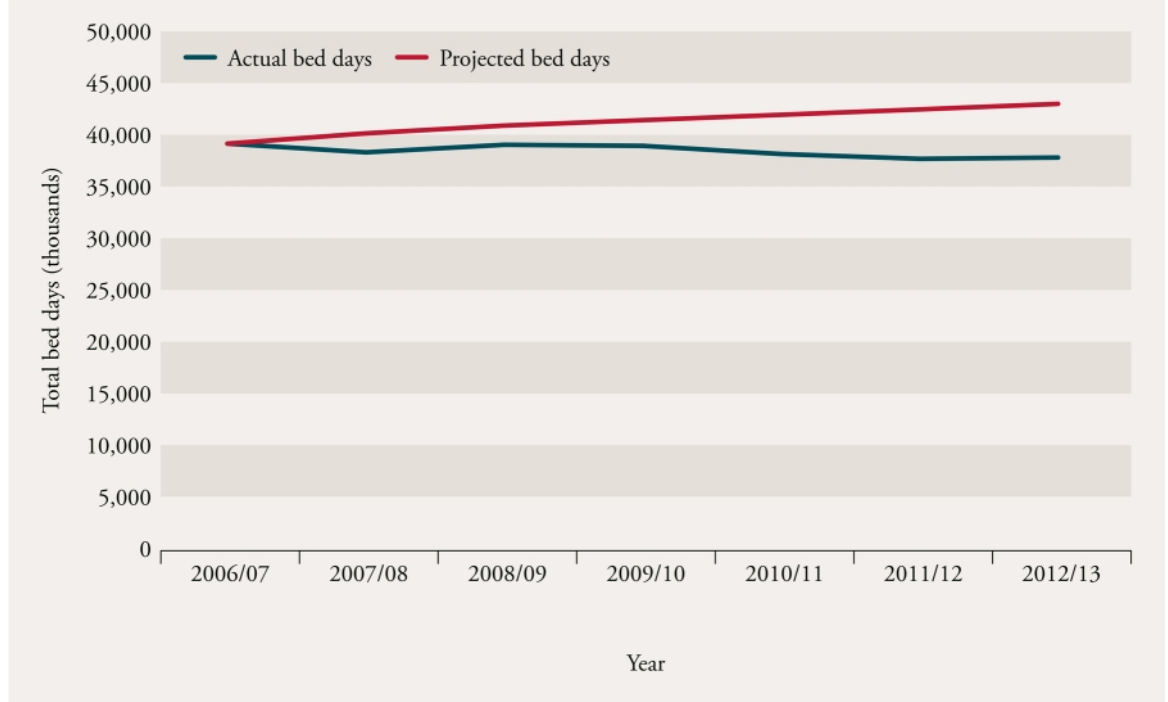
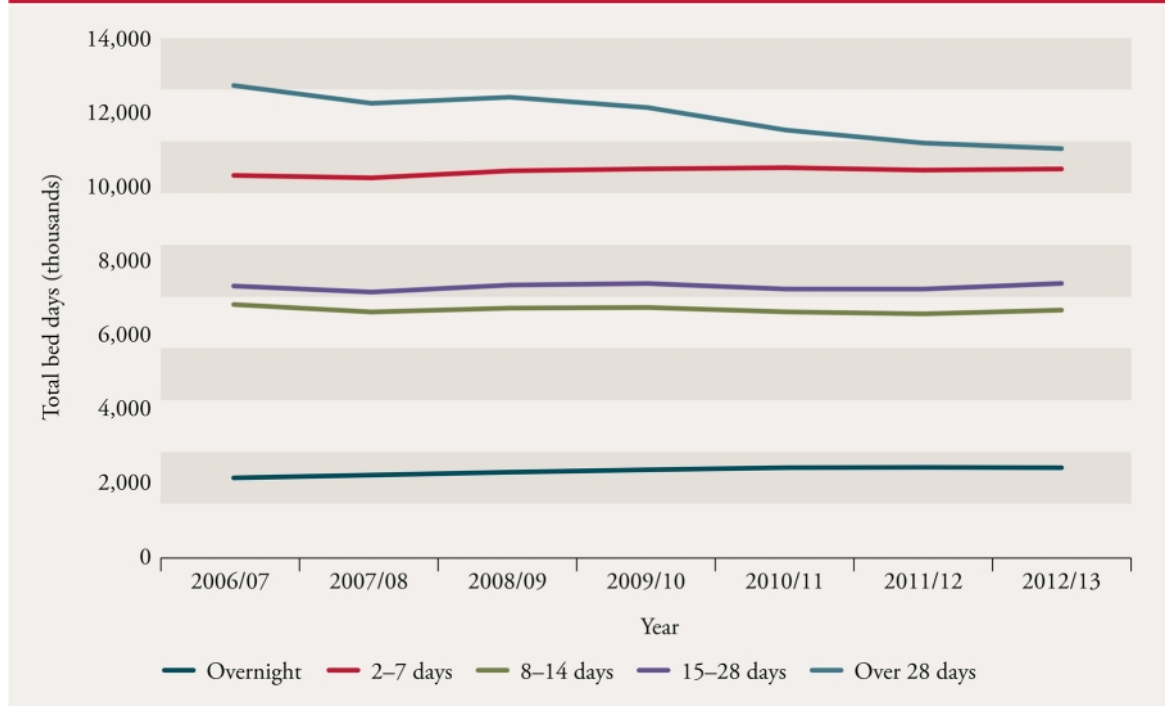


Figure 5: Number of bed days, split by how long patient stayed in hospital, between 2006 and 2013



There was a net reduction of 1.4 million bed days for elective admissions (Figure 6a), concentrated mainly in those patients staying longer than one night in hospital.

For emergency admissions, reductions in the number of people staying over 28 days released 1.5 million bed days. However, this was offset by increases in the number of bed days for patients staying for shorter periods, leading to a net increase of 48,000 emergency bed days (Figure 6b).

Figure 6a: Changes in the number of elective bed days, by how long patient stayed in hospital, between 2006 and 2013

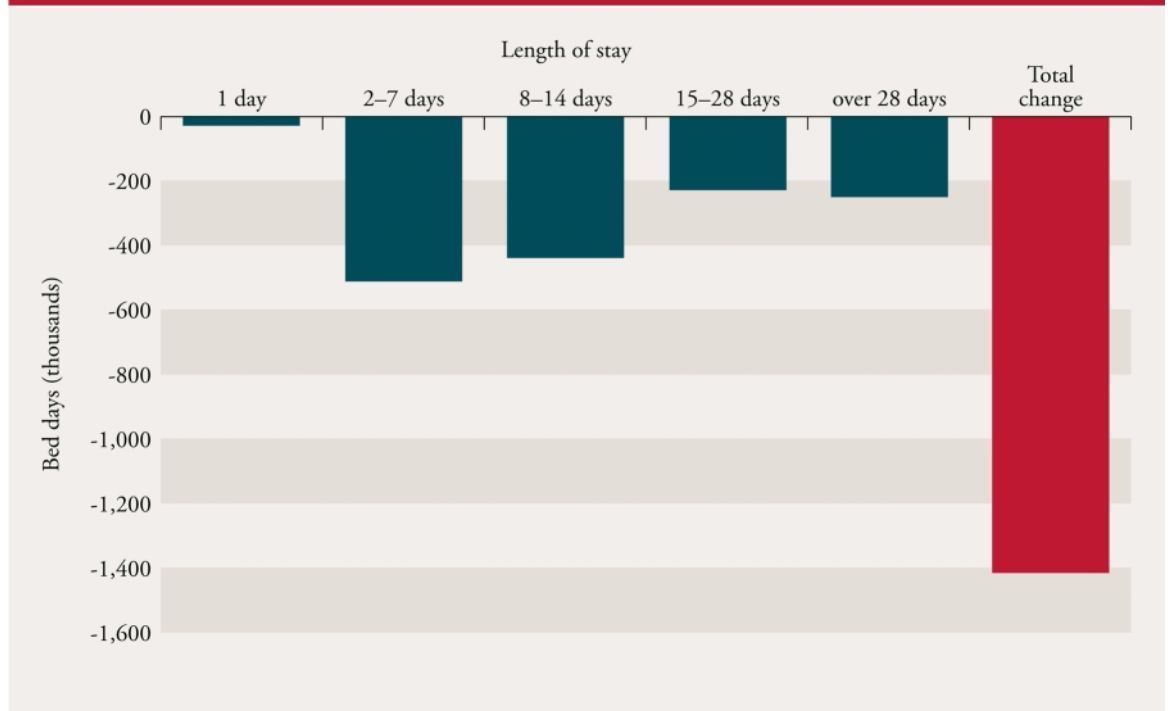
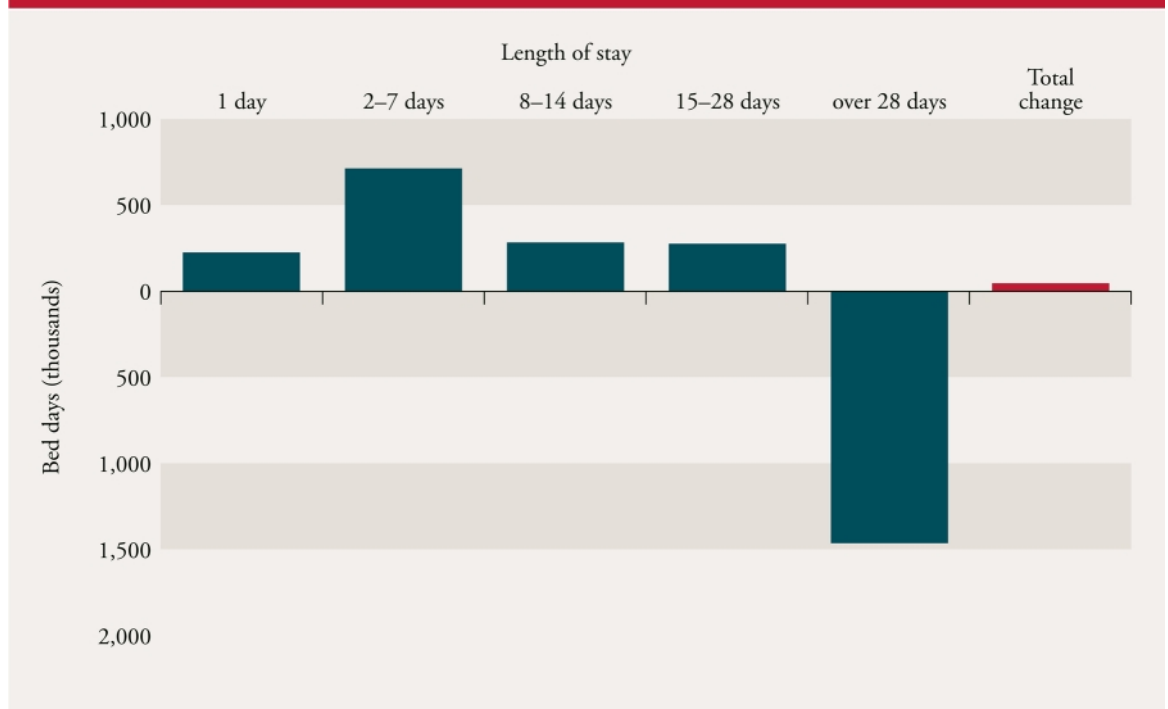


Figure 6b: Changes in the number of emergency bed days, by how long patient stayed in hospital, between 2006 and 2013



Across all types of hospital admission there was a net reduction of 1.3 million bed days.

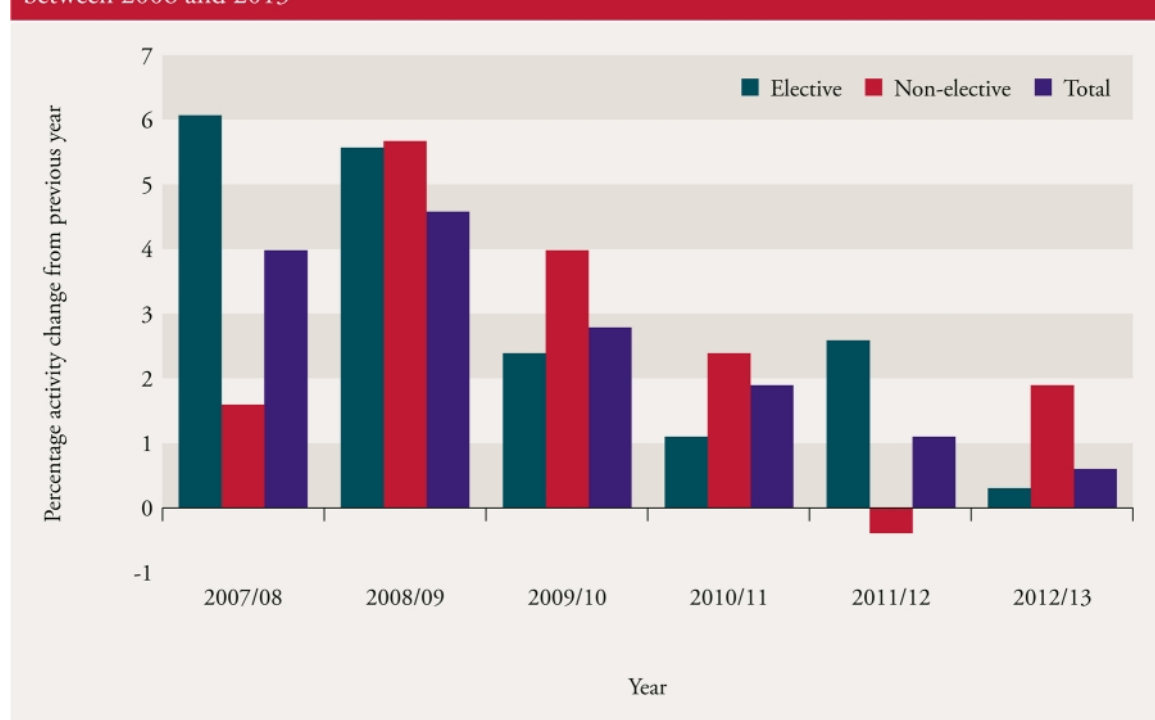
It seems that capacity released by the decline in the number of emergency patients staying over 28 days has been taken up with increased emergency admissions, albeit for people with shorter lengths of stay. The overall net reduction in bed days has largely been the result of the substitution

of day-case activity for inpatient care for some elective patients. But these changes have meant that the NHS has not had to add to its bed stock, but is using it more productively.

Are these trends likely to continue?

In both emergency and elective care, admissions have risen year-on-year. However, there are signs that the rate of growth in activity and the reductions in length of stay are slowing. Since 2008/09 the annual growth rate in overall activity has steadily slowed from 4.5% at the start of the period, to 0.6% in 2012/13 (Figure 7). Provisional data for 2013/14 suggest activity continued to grow at a little less than 1%.

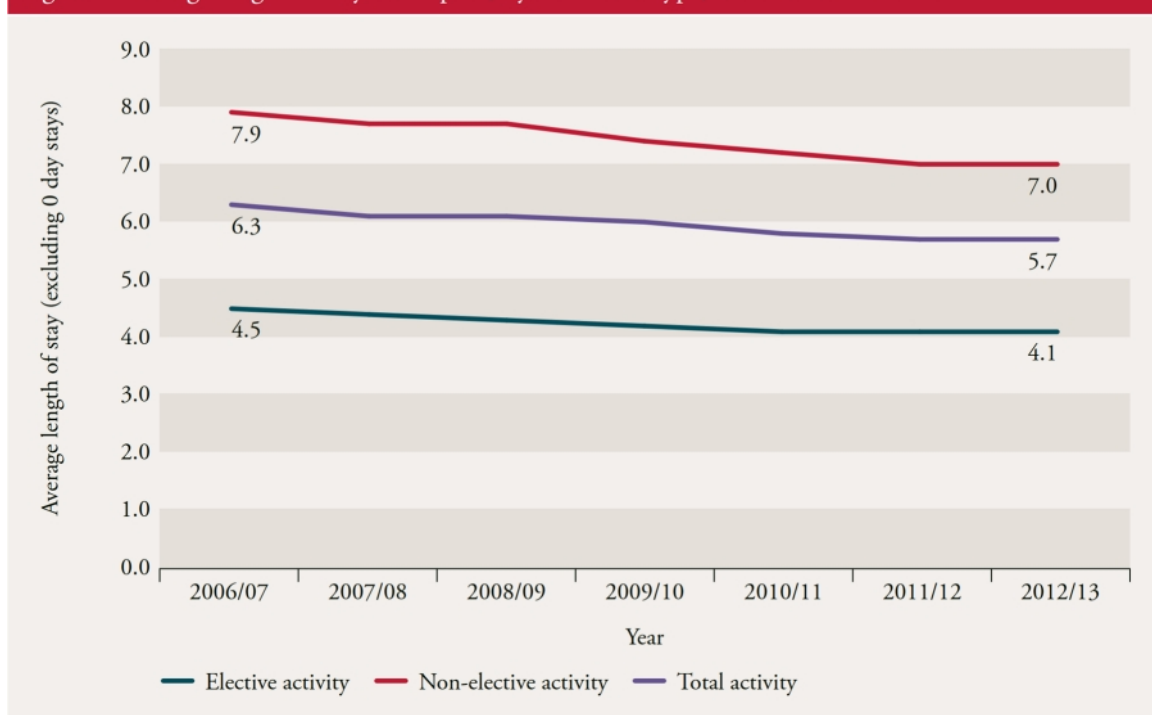
Figure 7: Percentage change in number of admissions from previous year, by admission type, between 2006 and 2013



The growth in emergency admissions slowed more or less steadily from 5.7% between 2007/08 and 2008/09, to 1.9% between 2011/12 and 2012/13. The rate of elective cases has been more volatile, but even so, growth in the second half of the period was lower than the first. This perhaps suggests that either austerity has had an impact and lower growth in elective cases is now being reflected in longer waiting times, or that the early part of the period reflected a big increase in consultant appointments that has now levelled off.

Reductions in length of stay slowed in 2011/12 and ceased in 2012/13 (Figure 8). This would be particularly concerning if it became a trend.

Figure 8: Average length of stay in hospital, by admission type, between 2006 and 2013



Getting patients discharged from hospital requires the right facilities to be available in the community. However, adult social services have suffered cuts of 15% in real terms between 2009/10 and 2012/13 (Ismail and others, 2014). The 2013 National Intermediate Care Audit also reported significant variability of services and little progress or investment (NHS Benchmarking Network, 2013). Failure to further reduce length of stay also puts extra pressure on hospital finances – and may be one cause of their deterioration – and affects performance in A&E where the inability to discharge patients who are already in hospital sufficiently quickly has been a factor in lengthening the time patients spend in A&E (Blunt, 2014).

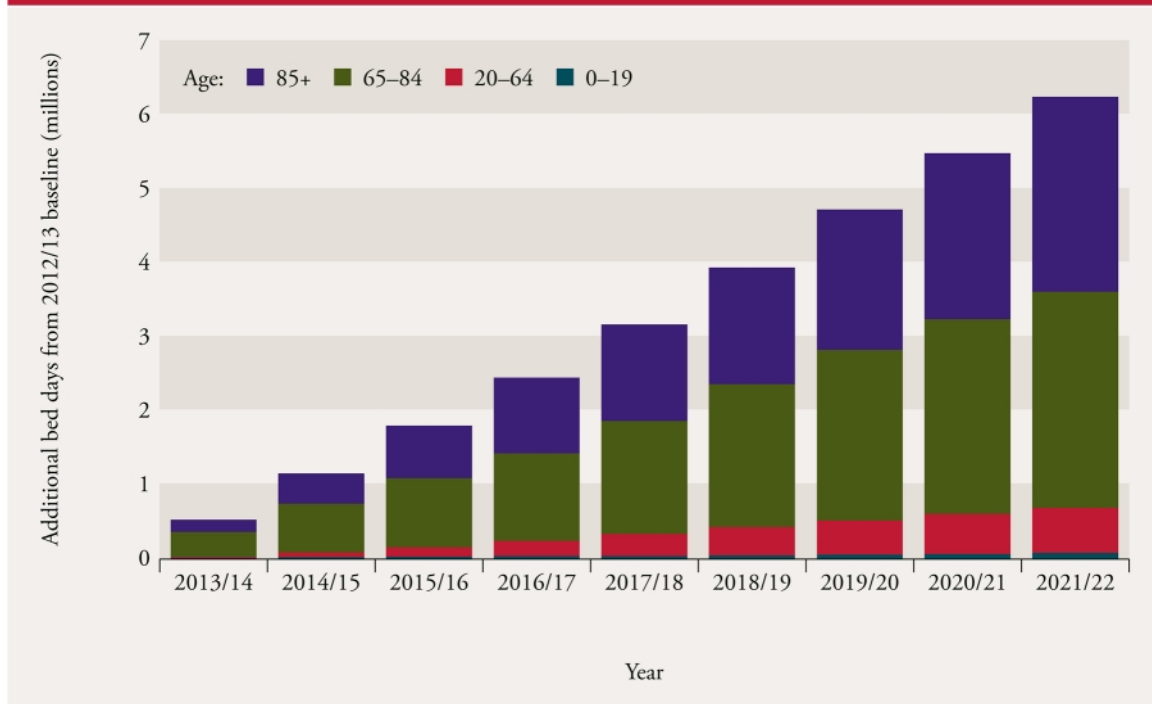
What does this mean for the future?

It is estimated that between 2012/13 and 2021/22, the number of people aged 65 and over will increase by 20%, and the number over 85, who have the highest rates of individual service use, will increase by 33%. The NHS will need to at least keep pace with this future demographic pressure.

If admission rates continue to rise, the growing and ageing population alone will result in the need for an additional 6.2 million bed days (a 16% increase on current provision) (Figure 9). This is equivalent to approximately 17,000 beds, or about 22 hospitals of 800 beds each.

This increase in activity makes up an important component of the funding gap facing the NHS. Using a rough estimate based on the national tariff, we estimate it may amount to around a quarter of the £30 billion gap facing the NHS by 2022 (Roberts and others, 2012). However, even if the extra investment in bed stock was available, it would not be desirable from either a patient care or a system management point of view to build additional hospitals. The best way to manage care for people with complex and multiple conditions is often outside of hospital – either through preventing people from entering hospital in the first place or speeding up their discharge from hospital into the community.

Figure 9: Estimated number of additional acute NHS bed days from 2012/13, by age group, based on demographic projections



Current policy is aimed at cutting the number of emergency admissions by providing more, better services outside hospital that can either prevent the need for hospital admission or offer the same care but in different settings. This is a common theme in initiatives for more integrated services, including the government's Better Care Fund. But there is little evidence that this can be achieved (Bardsley and others, 2013).

Continuing to reduce length of stay may be a better option for improving efficiency and keeping the acute sector solvent. Unlike reducing admissions – which requires the NHS to prevent many potential patients, some of whom will be unknown, from entering the hospital system – patients with long lengths of stay are already in hospital and are therefore clearly identifiable. It is clear that it can be done. As we have shown, the NHS has shown continued progress in cutting long lengths of stay over the last seven years: a 16% rise in admissions was largely managed by changes in the types of procedures offered and reductions in lengths of stay, particularly for those staying over a month.

As noted above, the reward for the effort could also be high – only 1.5% of people stay in hospital for longer than 28 days, but they account for nearly 30% of all bed days.

But it would mean the NHS upping its game. If the rates of admission for each age group stay roughly the same, the effects of an ageing population will result in an average annual growth rate in bed days of 1.7% between 2012/13 and 2021/22, compared with the 1.4% that was predicted over the previous seven years – an increase of a quarter.

There may also be other pressures from new treatments, new technologies and new public expectations. These have in the past contributed towards the increase in costs or demand, but are not factored into this analysis. Past improvements in productivity are partially linked with greater use of less costly day care and diagnostics. It is unclear how far we can expect this to continue. Even if this

can be achieved, there is evidence that increasing the availability of beds increases the number of admissions (Shain and Roemer, 1959).

For the longer-stay cases, continuing to reduce bed occupancy in acute hospitals may still be possible: cutting lengths of stay by a quarter for those staying over two weeks would create the 6.2 million bed days needed to meet demographic pressure. In practice, these savings are likely to come from a range of measures:

- First, the NHS will need to make increasing use of services specifically designed for patients who only need to stay in hospital for a few hours rather than longer inpatient stays, such as further initiatives to expand day-care elective surgery.
- Second, the NHS will need to substantially improve the way that all departments (and services outside the hospital) work together to ensure patients do not stay in hospital any longer than they absolutely need to, for example by improving discharge arrangements.
- Third, and perhaps most importantly, the range of intermediate services available in community or social care will need to widen. The effect of this will be to absorb the demand for extra hospital beds through extra beds provided elsewhere – these may be provided in nursing homes, hotels, care homes or indeed in patients' own homes, with specialist services delivered by doctors and nurses in the community.

This can only be achieved if there is greater investment in intermediate and social care, and other community services, so increased numbers of long-stay patients can be discharged more quickly if this is appropriate for them.

The challenge is great, but it is one that the NHS must rise to if we are not to be faced with ever-growing pressures on the hospital sector.

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