Monitor

Making the health sector work for patients

Closing the NHS funding gap: how to get better value health care for patients

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About Monitor

Monitor is the sector regulator for health services in England. Our job is to protect and promote the interests of patients by ensuring that the whole sector works for their benefit.

We exercise a range of powers granted by Parliament which include setting and enforcing a framework of rules for providers and commissioners, implemented in part through licences we issue to NHS-funded providers.

For example, we make sure foundation hospitals, ambulance trusts and mental health and community care organisations are run well, so they can continue delivering good quality services for patients in the future. To do this, we work particularly closely with the Care Quality Commission, the quality and safety regulator. When it establishes that a foundation trust is failing to provide good quality care, we take remedial action to ensure the problem is fixed.

We also set prices for NHS-funded services, tackle anti-competitive practices that are against the interests of patients, help commissioners ensure essential local services continue if providers get into serious difficulty, and enable better integration of care so services are less fragmented and easier to access.

Introduction

Since the NHS was founded in 1948, its spending has increased on average by 4% a year in real terms.[1] However, for the decade ahead, the NHS budget is likely to remain flat in real terms or, at most, to increase in line with growth in the rest of the economy. Over the same period, demand for NHS health care is expected to rise as people live longer, have more complex health problems and more advanced treatments become available.

To fulfil its constitution, the NHS must continue to provide a comprehensive, excellent service, available to all. But these trends in funding and demand will create a sizeable funding gap. Recent projections from the Nuffield Trust and NHS England suggest this gap could grow to £30 billion a year by 2021. The gap could be smaller if the economy as a whole expands faster than expected. But commissioners and providers cannot rely on this happening. In short, the sector faces its greatest financial challenge of recent times over the next eight years or so.

To meet this challenge, health services must change fundamentally or the quality of care that patients receive will fall. In July 2013, NHS England called for an "honest and realistic" debate among NHS staff, public and politicians on this issue.[2] This paper is in part a contribution to that debate.

We believe that getting better "health value" for patients with each pound spent is a realistic prospect and by far the best strategy for closing the funding gap. Getting better health value for patients means improving productivity. But improving productivity doesn't mean dedicated doctors, nurses and managers working even longer and harder. It means everyone working differently and smarter. It means altering or completely reshaping services so they give patients the same or better quality and experience of care for less money. And it means re-investing the money saved in more and better services and so extending access to NHS care. If everyone across the NHS adopts this strategy, the outcome will be a network of services designed to meet the changing needs of patients in the 21st century within the limits of the NHS budget.

Taking this approach to improving productivity could close the funding gap but it won't be easy. Historically, productivity growth in the NHS has lagged productivity growth in the economy as whole. That has two important implications for NHS decision makers. First, to have a chance of closing the expected £30 billion a year gap by 2021, the NHS will need to achieve "more for less" at a higher rate than it ever has done before. Second, "one huge heave" will not be enough. To prevent the gap from simply re-opening after 2021, the NHS will need to continue improving productivity by at least the same rate as the rest of the economy, year on year. Only by keeping up a higher

[1] The Nuffield Trust (2012) *A decade of austerity? The funding pressures facing the NHS from 2010/11 to 2021/22*.
[2] NHS England (2013) *The NHS belongs to the people: A call to action*.

rate of productivity improvement can the NHS remain financially sustainable in the long term.

Achieving and then maintaining a higher level of productivity will mean making radical changes to the way care is delivered. What should those changes be? And how can local providers and commissioners at the front line decide on the right changes to make for their area?

As the sector regulator for health services in England, Monitor's job is to make sure the whole sector works for patients' benefit. One way we do this is by sharing with decision makers in the sector the evidence they need to take sound decisions. Evidence on ways to improve productivity in health care is extensive but scattered and of variable quality. So, to help commissioners and providers decide how best to create more value for patients in their localities, we have collected and reviewed **the best available evidence** on improving health care productivity, identified where the biggest opportunities lie and estimated the potential gains they offer. We also provide links to details of good practice in getting better value for patients from spending on health care.

The available evidence indicates a range of opportunities to make significant recurrent productivity gains across the NHS by 2021 and beyond. These opportunities break down into four main types, outlined below:

- **Improving productivity within existing services.** Valuable opportunities to improve quality, safety and efficiency are available within existing configurations of primary, community, acute and mental health care. These include measures to reduce waste and running costs, improve procurement, reduce lengths of stay in hospitals, collaborate better with social services, redesign clinical roles and avoid using procedures or drugs of low clinical value. Many such measures are in progress as part of existing Quality, Innovation, Productivity and Prevention (QIPP) and Cost Improvement Programmes (CIPs). Taking 2010/11 as a baseline, these plans could yield gains of £6.5 billion to £12.1 billion by 2021.
- **Delivering the right care in the right setting.** Many patients could enjoy better outcomes at lower cost to the NHS if their care were delivered in a more appropriate setting. For example, increasing care in the community for the millions of people who have a long-term condition could both improve their experience as patients and reduce costly hospital visits. Similarly, concentrating resource-intensive specialist care in centres of excellence could improve the standard of care and capture economies of scale. The evidence suggests that reconfiguring services and integrating care effectively across providers could yield productivity improvements in the region of £2.4 billion to £4 billion by 2021.
- **Developing new ways of delivering care.** Measures to improve the productivity of established ways of delivering health care in the two categories above will not be enough to close the whole financial gap. Success will depend on developing new and more productive ways to organise and deliver care. Best practices from other

health care systems offer one rich source of ideas. We estimate that introducing applicable innovative models of care to services in primary and secondary care could deliver £1.7 billon to £1.9 billion of productivity gains by 2021. But since gains from innovation are by definition unknowable, we have been fairly conservative in our estimations: actual gains from innovation could be significantly bigger.

- **Allocating spending more rationally.** The direction of NHS spending is determined more by history than an objective and current assessment of the disease burden of the population and the potential for particular interventions to relieve that burden. Redirecting resources to prevention and early diagnosis or rebalancing spend between different diseases could yield important productivity improvements. Quantifying these potential gains, as we have the other three types of opportunity, is beyond the scope of this study. Nevertheless, the evidence for this opportunity raises interesting questions for commissioners on how best to allocate spending.

The evidence also suggests two further sources of non-recurrent savings, wages and capital costs. Making savings in both areas may help to close the funding gap by 2021 but neither will serve to keep it closed in the long term.

As in all health care systems, wages represent the largest cost for the NHS. The wage freeze from 2010/11 to 2012/13 and the 1% cap on pay that is due to lift in 2015 are together predicted to save a cumulative total of £5 billion by 2015. As a result, wage levels in future years will be calculated from a lower base, suggesting this measure should help productivity in the long term. However, we do not believe this is a sustainable strategy for improving productivity in the NHS. Periods of wage restraint are generally followed by periods of “catch up” with their trend level in subsequent years. Capping wages for longer to keep costs down would be self-defeating for the sector in the long term as it would make recruiting and retaining good quality professionals increasingly difficult.

The evidence indicates that selling underused estate across the acute and mental health sectors could yield a gain of £7.5 billion. However, this gain would be one-off, so it could not contribute to keeping the funding gap closed in the long term. In addition, we believe that this figure would be difficult to achieve. For example, existing private finance initiative (PFI) contracts, the challenges raised by disposing of parts of estates, and expected future demand for new and modern estate could all make these savings difficult to realise in full.

All our estimates of productivity gains and savings by type of opportunity and by care sector are illustrative rather than firm predictions. The estimates rest on data that varies in quality and assumptions that are subject to many uncertainties. Our main aim in publishing these estimates is to stimulate thinking and action. We want to point people in the direction of the big opportunities. We hope the findings from this review of the evidence will encourage everyone in the NHS to look for radically different ways

to serve patients better at lower cost so everyone in England can enjoy excellent health care, free at the point of delivery.

The rest of this review details the four types of opportunity for making recurrent improvements in health care productivity indicated by the evidence, and actions that could realise those opportunities. It also examines the evidence for available non-recurrent savings.

We encourage you to download and read the accompanying Improvement Opportunities in the NHS: Quantification and Evidence Collection *document which provides the data analysis and evidence behind this paper.*[3]

[3] www.monitor.gov.uk/sites/all/modules/fckeditor/plugins/ktbrowser/_openTKFile.php?id=37844

Improving the quality, safety and efficiency of care delivered through existing services

The evidence suggests potential productivity gains from this opportunity ranging in total from £6.5 billion to £12.1 billion, made up of gains from:

- acute care: £2.7 billion to £4.7 billion;
- primary care: £1.2 billion to £2.5 billion;
- community care: £1.2 billion to £1.8 billion;
- mental health: £0.5 billion to £1.3 billion; and
- avoiding the use of elective procedures and drugs of little clinical value: £0.9 billion to £1.8 billion.

Acute care: productivity gains of £2.7 billion to £4.7 billion

The hospital sector accounts for the largest proportion of all NHS spending**.** Today, the NHS operates 195 acute and specialist trusts, with 107,444 beds across some 590 sites. With a cost base of £50 billion, acute trusts employ 636,000 people and provide in- and outpatient care for over 25 million patients a year.

This sector also offers the largest potential productivity gain from improving existing operations. Our internal hospital benchmarking and review of case studies suggest the sector could yield gains worth £2.7 billion to £4.7 billion in three broad categories:

1) Clinical redesign and process improvements: £1.1 billion to £2.3 billion

   Introducing new ways of working in hospitals, redesigning job roles and applying “lean” thinking to regular processes could allow hospitals to reduce their cost base and/or absorb additional patient demand within their current resources. Many of the current cost improvement plans in the sector focus on this kind of service redesign to reduce cost and improve patient satisfaction.

2) Better procurement of clinical supplies and non-clinical services: £1 billion to £1.5 billion

   Costs for the same goods currently vary by as much as 50% across the hospital system.[4] This huge variation suggests significant scope for the sector to improve its procurement and contracting capability. Our estimates suggest that 10% to 15% of spending on clinical and non-clinical supplies could be reduced this way, through methods such as pooled procurement.[5]

[4] National Audit Office Department of Health report on the procurement of consumables by NHS acute and foundation trusts.
[5] FIMs 2010/11; Foundation Trust annual accounts; National Audit Office report.

3) Improved estate utilisation: £0.7 billion to £1.1 billion

   Consolidating hospital estates and making better use of assets could cut hospital running costs significantly. Where complex services have been consolidated, such as the reconfigured stroke service in London, they enable huge reductions in capital and running costs and also deliver better clinical outcomes.

Acute care case studies

- Guy's and St Thomas' NHS Foundation Trust used the early screening of elderly patients to reduce bed utilisation while improving clinical standards. The programme reduced the average length of stay for people aged over 75 from 13.2 days to 7.6 days.[6]
- Nottingham University Hospitals NHS Trust implemented the NHS Institute's "Productive Ward" programme which enabled nurses to spend 11% more time on direct patient care and also improved nurses' job satisfaction.
- Consolidating obstetric and children's inpatient services and co-locating services onto fewer sites achieved a saving for the South East England health economy of an estimated £50 million.[7]

Primary care: productivity gains of £1.2 billion to £2.5 billion

In 2010/11, over £21 billion[8] was spent on primary care, representing around a quarter of total NHS spending. This sum was divided between prescribing (£8.3 billion), general practice (£7.7 billion), and dental, pharmacy and ophthalmology services (£5.3 billion).[9] Spending on general practice included an estimated £4.4 billion for GPs, £0.4 billion for practice nurses and £1.1 billion for other clinically qualified and administrative staff. In 2010/11 the general practice workforce consisted of 77,568 employees, including 35,319 GPs and 13,573 GP practice nurses.[10]

Improving the productivity of primary care would have the added benefit of reducing patient demand for secondary care. However, in this category we confine our focus to productivity improvements within the primary care sector itself, particularly in general practice.

Good information on primary care spending decisions is not as readily available as equivalent data from the acute sector. This makes it harder to see where the greatest opportunities for improving productivity across the sector lie. However, the available

[6] Guy's and St Thomas' NHS Foundation Trust, Department of Health enhanced recovery programme.
[7] Palmer, K. (2011) *Reconfiguring hospital services. Lessons from South East London*, King's Fund.
[8] Department of Health Annual accounts 2010/11 and Laing and Buisson 2010/11.
[9] Department of Health Financial Information Management System (FIMS) 2010/11.
[10] NHS General Practice Bulletin Tables, 2011.

evidence indicates that improvements offering a potential productivity gain of £1.2 billion to £2.5 billion could be realised through three broad interventions:

1) Process and clinical re-design

   Operational improvements in general practice could be achieved through a combination of revising appointment processes, changing job roles within primary care and using telephone triage and telephone appointments. Taking such measures could enable a typical practice with an average list size of 6,500 to add an extra 50 to 95 appointments a month. Measures to rework appointment and diagnostic processes could also free up GPs' time, allowing them to focus on more complex patients and help meet future demand. The gains for patients from these measures could be considerable:

   i) a 10% to 20% gain in GP productivity would enable GPs to see two to four extra patients a day;

   ii) a 10% to 20% gain in nurse productivity could be worth £0.4 billion to £0.9 billion more primary care; and

   iii) a 10% to 20% gain in the productivity of other staff (largely administrative) could be worth £0.1 billion to £0.2 billion to the sector.

   The evidence also shows a wide and unwarranted variation in prescribing behaviour and rates of referral for further care between general practices in different areas. For the productivity gains that we estimate to be realised, lower performing practices would need to improve their performance in prescribing and referral to the levels achieved by the higher performing practices.

2) Better utilisation of estate: £0.2 billion to £0.3 billion

   Increasing the size of GP practices, reducing running costs and making more use of the estate, for example, by having longer opening hours, could improve asset utilisation for GPs' practices. Consolidating practices will not always be feasible or even desirable in some areas. But new forms of collaboration between practices could deliver similar advantages. For example, smaller practices could collaborate to form networks serving 50,000 to 70,000 people. This would maximise the use of skills, co-ordinate care better and increase capacity.

3) Better procurement: £0.2 billion to £0.4 billion (for both clinical supplies and non-clinical supplies)

   Costs for inputs such as clinical supplies vary widely among GPs as well as hospitals. If all providers aimed to bring down their supply costs to the best practice level, contained growth in their supply costs and shifted from branded drugs to generics, they could save significant amounts of money for reinvestment in the sector.

Primary care case studies

- Leicestershire Cottage Surgery introduced a scheme enabling patients to talk to a doctor before making a face-to-face appointment. After such a conversation, only 34% of patients still wanted to see the doctor, 25% required further time with a nurse and "no-shows" at the surgery reduced to zero.[11]
- Richmond Medical Practice in Sheffield applied lean thinking to its prescription handling process for administration staff dealing with patients collecting repeat prescriptions. The practice cut average time for finding a prescription from 118 seconds to 21 seconds, saving 12 staff hours a week.[11]
- Concord Medical Practice in Bristol reduced high rates of sickness absence among its staff by recording individuals' days off for sick and displaying these across the practice. This reduced sickness absence by 35% from 2009/10 to 2010/11.[11]

Community care: productivity gains of £1.2 billion to £1.8 billion

In 2010/11, the NHS spent £8.4 billion on community care services. The evidence suggests that this sub-sector could achieve an overall productivity gain worth £1.2 billion to £1.8 billion by 2021 through improving labour productivity and estate utilisation and reducing input costs. The biggest opportunities exist in three areas:

1) Improving clinical staff productivity: £0.9 billion to £1.3 billion

   Today, clinical staff in community services generally have dedicated working spaces although most of their time is spent in the field, often in patients' homes. Making more use of mobile technology and hot-desking at the office could enable staff to spend as much as 50% more face-to-face time with patients and also improve estate utilisation. Better use of existing technology, such as the Global Positioning System (GPS), cloud-based health records and mobile phones, would also reduce the currently large amount of time community staff spend travelling and returning to their base.

2) Better estate utilisation: £0.1 billion to £0.2 billion

   To reduce the running costs of their estate to this degree, community care organisations would need to operate at a larger scale and alongside primary care in fewer, larger buildings. Similarly to primary care, the size of the overall community care estate could be around 30% smaller than it is today, through improvements with the utilisation of estate.

[11] NHS Institute for Innovation Productive Primary Care.

3) Improvements in procurement of drugs and supplies: £0.05 billion to £0.1 billion

   Spending by community care providers on drugs and suppliers varies considerably (adjusted for population within similar socio-demographic clusters, as defined by the Office of National Statistics). Although the integrity of spending data may be questionable, there is broad agreement that the quality and efficiency of providers' procurement vary. So, if all providers aimed to reach the procurement standards of the best – an achievable goal – productivity across community care would improve.

Community care case studies

- Liverpool Community Health optimised travel routes for its district nursing services through its "Productive Community Services" programme. This led to an 11% increase in the time nurses spent with their patients each week.[12]
- Leeds Community Healthcare NHS Trust gave audiologists direct access to their booking system to cut the time audiologists spent each day on phone calls. This saved three weeks a year for each audiologist.[12]
- Southampton Community Healthcare applied a lean programme with their district nurses, increasing the time nurses spent with patients from 30% to 60%.[12]

Mental health: productivity gains of £0.5 billion to £1.3 billion

The NHS spent £10.5 billion on mental health in 2010/11.[13] However, activity and outcome data has generally been more opaque across this sector so evidence for sources of productivity gains is accordingly not as strong as in other care settings. Nevertheless, the evidence suggests potential productivity gains of £0.5 billion to £1.3 billion are available in the mental health sector, through the following actions:

1) Bringing the length of stay at all mental health acute sites closer to the level achieved at best practice sites: £0.3 billion to £0.9 billion

   Achieving gains on this scale would depend on all sites reducing avoidable bed days through improving discharge procedures, enabling people to leave hospital to other care settings, and better integration with mental health teams in community settings. Detailed measures to consider include providing more home treatment, developing alternatives to admission and targeting high-risk groups. If all mental health acute trusts moved to the levels of the second-best performer in their Office of National Statistics (ONS) group, an estimated 2.6

[12] NHS Institute for Innovation Productive Primary Care.
[13] Community services spend estimate from FIMs 2010/11; Mental Health from Programme Budgets 2010/11.

million bed days could be saved a year. The cost of one bed day is currently £320.

2) Improve asset utilisation: £0.1 billion

   Reducing the length of stay will automatically improve fixed asset utilisation. If all mental health trusts could reach levels of fixed asset utilisation achieved by the top quartile, running costs of £900,000 to £1.6 million would be saved on the estates no longer required.

3) Improving procurement of supplies and drugs: £0.1 billion to £0.3 billion

   Wide variations between what different providers in this sector pay for the same drugs and supplies suggest that bringing all providers closer to the level of the best performers would release productivity gains. Better sharing of comparable data between providers and pooling procurement functions are two means of achieving these gains.

Mental health case studies

- Birmingham and Solihull Mental Health NHS Foundation Trust has reduced length of stay through their rapid assessment interface discharge service (RAID). This is a highly visible, multi-disciplinary team that acts as a single point of contact in the hospital to meet the wide range of patients' needs. This initiative has reduced overall bed days by 10%, equivalent to an average of one bed day per patient, and has helped reduce emergency re-admissions by 11%.[14]
- Mersey Care NHS Trust implemented a whole system service for people with dementia. The programme embeds liaison services within all acute providers in the local area. Liaison staff help to arrange home support, care homes and prescribing for patients with dementia. The initiative achieved savings of £246,000 in its first year through reducing the amount of drugs prescribed and bed days.

Avoiding the use of elective procedures and drugs of little clinical value: productivity gains of £0.9 billion to £1.8 billion

Two major sources of waste in existing services are spending on elective treatments that have very low clinical benefit to the patient (known as "over-utilisation") and spending

[14] Birmingham and Solihull Mental Health NHS Foundation Trust, HSJ 2010 Best Practice Report.

on drugs of low clinical value. Tackling these sources of waste through the kind of measures outlined below could yield productivity gains of £0.9 billion to £1.8 billion:

1) Stopping elective procedures of low clinical value: £0.2 billion to £0.6 billion

   At least 30 elective procedures are deemed to be either relatively ineffective from a clinical point of view or solely cosmetic. However, these procedures are still commissioned by the NHS. Evidence suggests that up to 95% of such these elective procedures could be safely eliminated, ranging from 10% of jaw replacements to 90% of tonsillectomies or knee washouts.[15]

   Clinicians vary widely in the number of times they recommend elective procedures that may be clinically ineffective. For instance, there is a three-fold variation in the number of hysterectomies performed between different areas of England, according to the *NHS Atlas of Variation in Healthcare* of 2010.

   Avoiding unnecessary interventions would both benefit patients and release resources for investment in effective and safe care. Continuing efforts by clinical working groups to define and reduce the number of procedures of limited clinical effectiveness across the health system, (for example, the "Croydon list") mean potential gains from this source could increase over time.

2) Better utilisation of drugs and stopping interventions of low clinical effectiveness: £0.7 billion to £1.2 billion

   Evidence indicates that ceasing to prescribe drugs of relatively low clinical value across the pathways of diabetes, heart disease, stroke and heart failure could yield significant financial savings. It could also yield important quality benefits since lower drug use reduces the risk of patient harm, in turn, reducing hospital admissions for patients who suffer adverse reactions to certain drugs.

   Furthermore, recent research by the York Health Economics Consortium and the school of pharmacy at the University of London (2010)[16] put the annual figure for unused medicines in England at £300 million. Studies repeatedly show that one third to one half of prescriptions are not taken as intended and this poor adherence leads to poor patient outcomes.

[15] LHO – *Save to Invest. Developing criteria-based commissioning for planned health care in London. Effective commissioning initiative*. South West London Public Health Network November 2006.
[16] "Evaluation of the Scale, Causes and Costs of Waste Medicines", York Health Economics Consortium and the School of Pharmacy, University of London (2010).

Delivering the right care in the right setting

The evidence suggests potential productivity gains from this opportunity, ranging in total from £2.4 billion to £4 billion, made up of gains from:

- preventing hospitalisations through integrated care: £1.2 billion to £2 billion;
- directly shifting acute activity to the most cost-effective setting: £1 billion to £1.6 billion; and
- teaching patients to manage their own care: £0.2 to 0.4 billion.

Preventing hospitalisations through integrated care: productivity gains of £1.2 billion to £2 billion

Better integration of health and social care is becoming widely recognised as a strategy for reducing emergency hospital admissions, especially among frail and elderly patients who often have complex comorbidities. The available evidence indicates that improving co-ordination and collaboration between providers and patients across settings can significantly reduce hospitalisations for this patient group.

In 2010/11, there were close to 7 million unplanned admissions into acute care, costing £14.5 billion,[17] of which 98% was spent on 20% of the patients admitted. This group of patients are typically frail, have co-existing long-term health conditions and may also experience poor mental health, which can exacerbate their care needs.

The evidence suggests that managing "high-risk" groups through better sharing of information, and using multi-disciplinary teams spanning providers in primary and community care, could prevent unnecessary emergency admissions and generate productivity gains of £1.2 billion to £2 billion.

However, given the high total cost of emergency admissions, why is it that potential gains from reducing unnecessary admissions through better integrated care outside hospital are not greater? Firstly, the evidence suggests that increased spending in primary care does not necessarily mean lower spending in secondary care[18] as shifting services often requires significant investment. For example, one integrated care trust had the lowest spending on acute care in its region but spent nearly double the regional median on community services.[19] Secondly, evidence for the scale of benefits to be gained from shifting care is not yet clear. There have been several programmes and local initiatives to reduce emergency admissions through better integrated care outside of hospital, but these have been largely small-scale and the benefits are often difficult to track. Further work is required to identify the best ways to prevent hospital admissions through integrated care in the NHS. The recently

[17] HES 2011/12; Programme Budgets 2010/11.
[18] FIMS 2010/11; DH Exposition Book 2010/11.
[19] HES 2010/11; FIMS 2010/11.

launched "integrated care pioneers" project should be a useful source of evidence in this area.

Case studies

- Croydon's "Virtual Ward" unit uses predictive modelling tools to rank patients by their risk of emergency admission and offers multi-disciplinary "wrap-around" care to patients most at risk. The initiative has contributed to a £1 million annual saving on acute admissions.[20]
- Bedfordshire's Partnership for Excellence in Palliative Support uses a central electronic register to co-ordinate care for patients in the last year of life. The register provides a central management point to support the planning of palliative care. After the register was introduced, 16% fewer patients were admitted to hospital for their last few days of life and more patients died at home. Both patients' families and health professionals reported high satisfaction with the initiative.[21]
- Hillingdon's breathlessness clinic teaches patients to manage their symptoms themselves. The group is run jointly by a health psychologist and a nurse specialist with help from other allied health professionals and consultants. Patients are taught coping strategies, distraction techniques and other mechanisms to prevent their breathlessness. This initiative reduced A&E attendances among the selected patients by 60%.[22]
- The north east liaison service of Tees, Esk and Wear Valleys NHS Foundation Trust invested £35,000 in an additional liaison nurse for mental health patients. In the nurse's first year, the service saved £59,000 through reducing admissions and the average length of stay. The service was able to see an additional 70 patients per year.[23]

Shifting acute activity to the most cost-effective setting: productivity gains of £1 billion to £1.6 billion

The evidence suggests that care currently taking place in the acute setting could often be delivered more cost-effectively and at the same or better level of quality in other

[20] Lewis, G. (2010) Predictive modelling in action: how 'virtual wards' help high-risk patients receive hospital care at home, Issues in International Health Policy, *Commonwealth Fund*, 1430, 94.
[21] NHS National End of Life Care Programme: Bedfordshire's PEPS.
[22] Dupont, S. (2007) The COPD Breathlessness Clinic in Hillingdon Hospital.
[23] The NHS Confederation (2009) *Healthy mind, healthy body briefing*.

settings. This type of opportunity arises particularly in elective care, urgent care and complex care:

1) Shifting elective care to primary settings

   Shifting consultant-led activities for outpatients with long-term conditions from hospitals into community care could save up to £0.7 billion.[24] We estimate that each year 20 million to 30 million attendances currently led by consultants could be shifted out of hospitals to community settings. The evidence suggests that this would be a more cost-effective way to deliver care with overhead costs on average 20% lower for delivering elective services this way when it is safe and appropriate to do so.

   Similarly, shifting outpatient activities to primary care settings, where they could be delivered by GPs with a special interest could realise gains of £0.7 billion. An estimated 10 million to 16 million outpatient attendances in hospitals could take place in primary care.

   Reducing the length of stay to a single day for appropriate elective activities could create a further gain of up to £0.1 billion. This estimate is based on all providers achieving the standard of those currently in the national best decile.

2) Shifting urgent care admissions to ambulatory services

   Between 25% and 40% of standard and minor A&E attendances could be shifted from general hospitals to urgent care centres or even routine primary care, representing 2 million to 4 million attendances. This would reduce pressures on general hospital A&E departments, so they could provide faster emergency care for more serious cases.[25]

   Across England, approximately 20% of patients admitted as emergencies for more than a day could be treated by ambulatory emergency services and sent home the day that they arrive. Moreover, clinical research suggests that better primary care can prevent conditions treatable by ambulatory care from developing in the first place.

3) Concentrating complex care in centralised settings

   We reviewed the productivity advantage to be gained from shifting complex care to centralised settings by looking at large-scale reconfigurations that have established centres for providing high volumes of complex care. These cases did not show a net financial gain. However, they did show significant quality gains for patients in the form of faster access and improved survival rates. For example, the reconfigured centralised stroke services in London (see below) are estimated to save an additional 400 lives a year.

[24] *Better Health Care Closer to Home*, 2006/07 Plans.
[25] Case studies from Tower Hamlets; Warren Farm UCC NHS Birmingham East and North case study; Health for London study of unscheduled care, 2008; Client GP clinical audit of A&E attendances.

Case studies

- South West Essex and London stroke services have been centralised in eight hospitals, each with a hyper-acute stroke unit to deliver stroke care. Once stabilised, patients are moved to other stroke units for rehabilitation. These service changes are estimated to save 400 lives a year. Stroke mortality rates in London are 5% lower than in the rest of England.[26]
- Royal Cornwall Hospitals placed GPs in their medical admissions unit to advise other GPs on alternatives to emergency admissions for patients, and provide assurance for existing urgent care plans for high-risk patients. As a result of the initiative, 16% of A&E attendances were diverted to other services and overall medical admissions were reduced by 30%.[27]

Teaching patients to manage their own care: productivity gains of £0.2 billion to £0.4 billion

The NHS is increasingly looking to patients to manage their own care as a way to reduce demand for NHS services. The evidence suggests that 70% to 80% of people with long-term conditions could manage their conditions themselves with support from the formal and informal (friends, carers, family, etc.) health system.

The evidence comes from the many individuals with long-term conditions who already manage their own health. For example, 100,000 people who live with long-term diseases such as diabetes, heart disease and chronic obstructive pulmonary disease (COPD) have participated in peer-led self-management programmes through the Expert Patient Programme (EPP). This programme has been the primary source of data available to us on quantifiable productivity gains from self-management. Over the next five years, the EPP plans to expand to over 250,000 patients. Supporting patients in managing more of their own care could save £400 million. For a typical patient, the programme costs about £400 and saves almost £2,000 a year that would otherwise be spent on formal health care such as visits to a GP, community nurse or outpatient clinic.

There are further possible gains from better self care. For example, the Department of Health estimates that 51.4 million GP appointments, or one in five, are due to minor ailments, such as coughs and hair lice. These appointments could be replaced

[26] National Sentinel Stroke Audit; Stroke Improvement National Audit Programme, Royal College of Physicians, 1 April-30 June 2011; NHS. Healthcare for London. Consulting the Capital; Tyndall R. JCPCT. 2009; National Audit Office, "Major Trauma care in England", 2010. London Trauma Office mid year report, 2010; British Journal of Surgery, *A systematic review of the impact of volume of surgery and specialization on patient outcome*, 2007; 94; 145–161; T Rudd, "The Legacy of NHS London Stroke", Kings Fund presentation, October 2012; London Trauma Network Annual Report 2010/11; NHS Indicators 2012 (indirectly age/sex standardised stroke mortality).

[27] Sibbald *et al.,* "Moving specialist care into the community: an initial evaluation. *J Health Serv Res Policy*, 13(4), 2008; White, R. "Create an acute GP unit to reduce emergency admissions," *Pulse* November 13, 2009.

by pharmacy minor ailments services (MAS). However, existing MAS schemes have had low take-up, with less than 1% of eligible patients taking advantage of the programme. So despite the scope for such schemes, our estimate for potential productivity gains from rolling them out nationwide is a relatively conservative £64 million.

Despite our relatively conservative estimates of gains from this source, self care has huge potential to create better value for the NHS. Patients empowered to manage their own long-term conditions through changing their diet and lifestyle, administering their own drugs and monitoring their own health could reduce demand for many primary and secondary care services. Although the extent of this potential is not yet fully tested, patients' management of their own health is likely to play an important role in future models of care.

Opportunities to develop innovative ways of working in the NHS

So far in this paper we have focused on opportunities for improving productivity from existing models of care and by shifting care to more productive settings. However, these two opportunities alone look unlikely to be enough to close the whole of the £30 billion financial gap by 2021. To close the gap completely and to be financially sustainable for the long term, commissioners and providers will probably need to deliver care in entirely new ways.

Quantifying potential productivity gains from radical innovation is obviously hard because of the many uncertainties and assumptions involved. One helpful source of quantifiable evidence is innovations in other countries. We reviewed organisational and technological innovations from a number of health care systems overseas to see which could be applied to the NHS and their potential productivity contributions.

Of the innovations we assessed, two stand out as having the potential to transform NHS care, one from India in secondary care and one from Mexico in primary care. Applying these two innovations in England could yield an estimated productivity gain of £1.7 billion to £1.9 billion.

1) Aravind Eye Care, India: potential gain of £1.1 billion

   Aravind Eye Care in India has applied the principles of mass marketing and industrial engineering to create a model of eye care that combines high volumes and high quality of service with low cost. By streamlining the workflow of care to maximise the use of staff skills, Aravind is able to perform 60% of the number of NHS cataract surgeries but at one-sixth of the cost to the NHS and achieve better clinical outcomes. Taking an “Aravind” approach to cases representing 50% of NHS spending on elective ophthalmology (around £430 million annually), the NHS might be able to generate a £179 million efficiency gain in this elective activity each year. Moreover, applying the Aravind principles to cases representing 50% of spending on other high volume and routine elective orthopaedic and cardiac surgeries could yield an additional productivity gain of £1.1 billion a year. These calculations may be crude, but the figures indicate the scale of what radical change in care models could achieve.

2) MediCall Home, Mexico: potential gain of £0.6 billion to £0.8 billion

   MediCall Home in Mexico allows patients to consult a nurse by telephone. It serves 1 million households and deals with 90,000 calls a month. Of the patients who call in, two thirds resolve their queries over the phone and only the remaining third are referred to see a doctor in person, so reducing visits to general practice.

   If the NHS were to introduce a similar service and it reduced 50% of first visits to general practice, where patients would otherwise have seen a doctor, we estimate it could free up GP time worth in the region of £0.6 billion to

£0.8billion, taking into account the cost of nurses to run the phone service. The GPs could spend the freed time on care for more complex patients.

MediCall is similar to NHS 111 except in two respects: first, all calls are handled by trained nurses and, second, a much higher proportion of callers' queries are resolved over the phone.

Case studies

Other innovative delivery models with potential for the NHS include:

- In Ghana, patient information and images captured on mobile phones are sent over the mobile network for interpretation by a doctor at a different location.[28]
- In the USA, dermatology services use digital cameras and computers to transmit clinical images for cancer screening and diagnosis by central diagnostic specialist teams.[28]

[28] ClickMedix – Mobile Healthcare by Experts, http://clickmedix.com/publications/research/

Opportunities to allocate spending more rationally

A final opportunity for getting better value for patients from every pound spent on health care lies in allocating resources according to where they might return the highest health dividend. This means directing more public funds to preventing disease, through public health programmes, early diagnosis and to the wider determinants of health such as housing, health literacy and the environment. It also means allocating NHS investment in disease treatment in proportion to the relative burden of particular diseases on the population.

The pattern of resource allocation in the NHS is largely shaped by past decisions rather than any objective assessment of the national burden of disease and the "health value" of specific interventions. The exhibit below matches the amount of money spent on particular conditions to the health impact of those conditions. It reveals some apparent mismatches. For example, although long-term conditions collectively represent a heavy disease burden and pose a significant challenge to the NHS, they attract relatively small shares of NHS spending compared to other disease areas.

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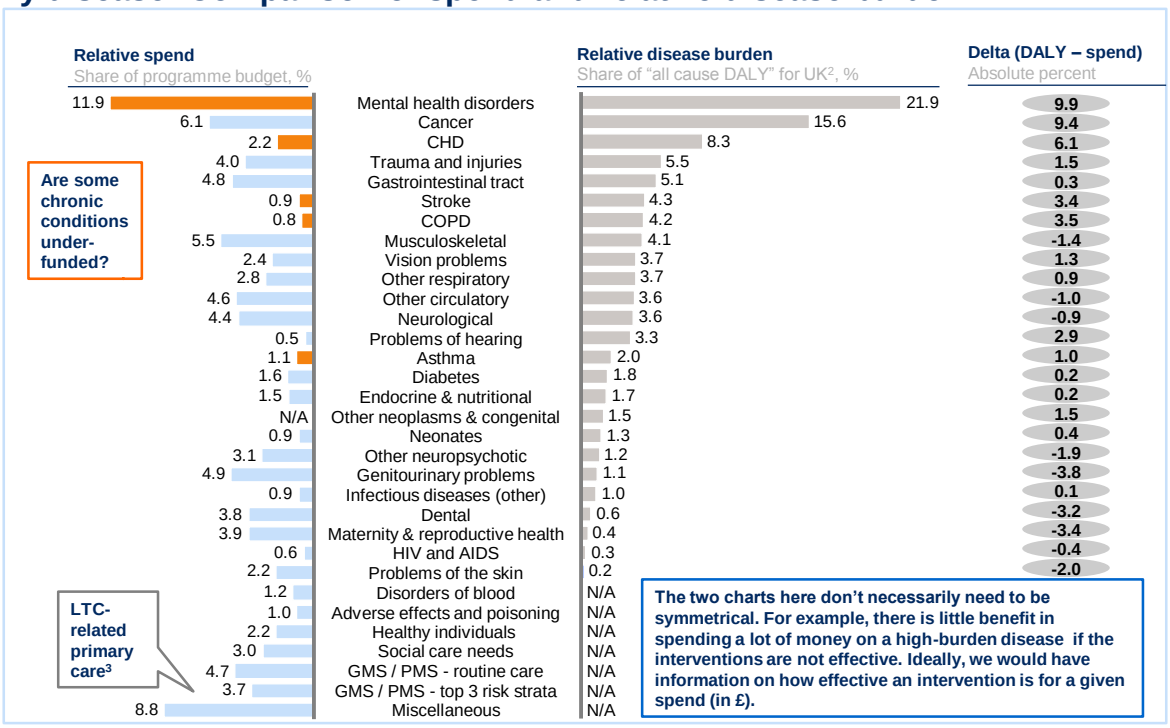
By disease: Comparison of spend and relative disease burden



1 Disability Adjusted Life Years; measures disease burden: sum of years of life lost (YLL) from premature mortality & years lived in disability/disease (YLD)
2 Sum of all DALYs, i.e. "all cause" DALY score; includes 0-4, 5-59 and 60+ DALYs
3 Based on a cluster analysis of spend by risk strata which found 44% of primary care was focused on patients in the 3 highest risk groups

SOURCE: World Health Organisation Department of Measurement and Health Information. February 2009; NHS Programme Budgets, 2010/11 21

We would not expect spending to match the relative burden of a disease symmetrically. For example, spending a lot of money on a high-burden disease is of little benefit if the interventions are not effective. But the current pattern of spending raises interesting questions about how to go about allocating resources to maximise

their “health value”. Ideally, how a health system allocates resources should be a function of both the actual burden of diseases and medical science’s capacity to address each one. Today we can understand the disease burden, but we do not yet understand the value that health care can create and how these two concepts – need and ability to address it – interrelate. That means quantifying potential productivity gains in this area must be beyond the scope of this review.

Nevertheless, in a world of tightly constrained resources, those who pay for health care need to question where spending can secure the best value. The founding principle of the NHS is to provide care based on need and not ability to pay. Everyone who works in the NHS must ask not only how efficiently the sector is spending NHS resources, but also whether the areas chosen to spend on yield the greatest health value for the people the NHS is here to serve.

Non-recurrent savings

In addition to the opportunities above for improving productivity over time, the evidence suggests two further significant non-recurrent savings could be available:

1. the current NHS wage freeze and subsequent 1% cap on wages until 2014/15 will save the NHS £5 billion in total; and
2. selling underutilised land and buildings could generate a one-off capital gain of up to £7.5 billion.

Wages

Wages represent the biggest input cost for the NHS. For the 35 years to 2009/10, total NHS wages increased 2% a year in real terms.

Pay in the NHS has been frozen from 2011/12 to 2012/13 and is capped at 1% for 2013/14 to 2014/15. If this settlement is maintained to 2015, these two measures together will save an estimated £5 billion.[29] Recent analysis suggests that a large proportion of the efficiency gains achieved by the NHS since 2010 can be attributed to the cap and wage freeze. If the 1% pay rise does not materialise then the savings will be greater.

Holding back wages is an approach consistent with many other countries. Health systems across Europe have contained health spending in recent years using top-down wage freezes or reductions rather than structural reforms to services. However, the impact on the quality of patient care of freezing wages poses a significant challenge to countries pursuing this policy.

Maintaining a real wage freeze for the next eight years and to the end of 2021/22 could save the NHS an additional £8 billion. This would appear to reduce costs in future years, because it lowers the baseline from which future wages rises are calculated. But we do not believe this is a sustainable strategy for improving productivity in the NHS. Periods of wage restraint are generally followed by periods of "catch up" with their trend level in subsequent years. Extended wage restraint also impairs recruitment and staff retention.

Capital

The current total value of the NHS estate is £31.2 billion. Data on capital assets, revenues and the optimum scale of estate for the acute and mental health sectors indicate underused estate in both sectors that could be sold for a one-off cash gain of up to £7.5 billion.

However, this figure will be difficult to realise in practice. Long-term private finance initiative (PFI) contracts, the practical difficulties of selling off parcels of property on hospital sites and the costs of modernising estates suggest that actual gains from

[29] The Nuffield Trust (2012) *A decade of austerity? The funding pressures facing the NHS from 2010/11 to 2021/22*.

this tactic are unlikely to be as large as estimated. Moreover, given the uncertainty about future levels of demand for inpatient and outpatient activity in the acute sector, estate savings now may best be used to offset future capital investments. Nevertheless, the evidence highlights that opportunities for disposing of underused estate across the NHS are worth reviewing.

Conclusions

The NHS was developed to provide largely episodic care. It generally treats people when they fall ill. But this care model will not be sufficient to meet the health needs of a growing, diverse and ageing population with high rates of chronic diseases, obesity and mental health problems. A 21st century NHS will need to deliver care that meets the health needs of today and focuses more on preventing illness and supporting individuals in maintaining active and healthy lifestyles.

If the founding principles of the NHS – universal access to excellent health care, free at the point of use – are to endure for future generations, then NHS staff, politicians and the public will need to work together to develop new care models for the NHS and new ways of working. It is up to all of us to make this happen.

Monitor

Making the health sector work for patients

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