Can a Strong Economic Case Be Made for Investing in the NHS? 25th Annual Lecture

Professor Peter Smith

4 September 2018
Royal College
of
Physicians

Office of Health Economics
Research

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Office of Health Economics
Southside, 7th Floor
105 Victoria Street
London SW1E 6QT
United Kingdom
www.ohe.org

Printed in the United Kingdom
The Office of Health Economics (a company limited by guarantee of registered number 09848965)
OHE is a charity (registration number 1170829)
ISBN number 978-1-899040-69-8

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With colleagues he has published widely on health economics and related topics, including over 150 refereed papers and 14 books as author or editor, including the Oxford Handbook of Health Economics.

Peter has acted in numerous UK governmental advisory capacities, and is currently chair of the NHS Advisory Committee on Resource Allocation. He was previously a board member of the Audit Commission and a member of the HM Treasury Expert Panel on Variations in Public Sector Performance. He has also advised many overseas governments and international agencies, including the World Health Organization, the International Monetary Fund, the World Bank, the Inter-American Development Bank, the Global Fund, the European Commission and the Organization for Economic Cooperation and Development.

Acknowledgement

Peter Smith would like to gratefully acknowledge the invaluable contribution of his co-authors, Anita Charlesworth (Health Foundation) and Jonathan Cylus (London School of Economics and European Observatory on Health Systems and Policies).

Peter would also like to acknowledge the work of the rapporteur Dr Nancy Mattison for preparing this summary of the lecture.

Contents

1. Introduction

The ultimate purpose of spending on health care is perhaps not as obvious as we might assume. Certainly, health in itself has value to the individual, but beyond this, the health of society can affect national prosperity. In 1911, in a speech introducing the National Health Insurance Act, Lloyd George argued that "'The advantage of the scheme to the State is, of course, in a happy, contented and prosperous people … and there is no doubt at all that a great insurance scheme of this kind… increases the efficiency of the workmen enormously'" (Foerster, 1912, p. 284). From the start, then, the intent was both to offer some financial protection in times of sickness, but also to enhance productivity; health insurance under the 1911 Act was restricted to those in formal employment.

Even at the time, however, scepticism about the effects of national insurance were evident, for example adverse incentives, in the form of carelessness in the workplace and fraud or the overuse of benefits. These concerns relate to economic concepts such as moral hazard and adverse selection, and persist today, whatever the precise form of health insurance. The news media, from professional journals to influential mass media, continue to question whether the NHS uses funds wisely and whether the NHS does, or can, ensure the best use of the country's wealth. The debate has at times raised doubts about levels of spending, and has in part contributed to the boom-bust cycle of funding that has plagued the NHS, particularly over the last 30-40 years.

All the forecasts suggest that public finances will be under even more pressure in the future, so it will be vital that the NHS demonstrates that it makes a crucial contribution to the economic health of the nation. To do so, it must show how it can promote the government's macroeconomic objectives as we leave the European Union. According to the Treasury[1], these are: (1) place public finances on a sustainable footing, ensuring value for money and improved outcomes in public services, (2) provide enough stability in the macroeconomic environment and financial system to support strong, sustainable and balanced growth, and (3) implement a comprehensive package of structural reforms to increase employment, productivity, and strong growth throughout the UK, which in turn will preserve international competitiveness.

UK objectives are in line with those throughout Europe, and elsewhere. As summarised in figure 1, European ministries of finance and economics also emphasize macroeconomic growth, stewardship of public resources and fiscal sustainability. A fourth stated objective, societal wellbeing, is not specifically named by the UK Treasury as a goal, although it is (perhaps) implicit in its mission.

[1] "Treasury" is used as shorthand in this discussion for the financial perspective of the current UK government. The stated preferences and plans of that department, of course, will change to reflect those of the government in power.

2. Defining the Value of the NHS

The four objectives in figure 1 provide a useful framework for examining how and to what extent the NHS can contribute to overall health. Throughout we focus on the English NHS, but many of the arguments apply to each of the UK countries.

Figure 1. Core objectives of ministries of finance

Promoting **macroeconomic growth**	• Direct intervention (e.g. service provision) • Indirection action (e.g. regulation and oversight
Demonstrating good **stewardship of public resources**	• Allocative efficiency • Technical efficiency
Ensuring **fiscal sustainability**	• Balancing tax revenues and expenditure commitments over the longer term
Supporting **societal wellbeing**	• Economic prosperity not the only consideration (e.g. education, environment, health)

3. Promoting Economic Growth

For the health sector, HM Treasury has three concerns. First, that high NHS expenditure puts a strain on the nation's tax capacity, and may therefore act as a drag on economic growth. Second, the health sector has in itself low potential for productivity growth; spending there may divert skilled resources from more productive sectors of the economy. And third, the NHS may not assign adequate priority to measures that can improve participation in the workforce. Health-related factors that affect participation in the workforce include physical disabilities or mental health; and caring for older dependants, which affects labour supply perhaps less obviously.

OECD statistics show that about 17 percent of the UK working age population is disabled, slightly above the OECD average. One thing that stands out, however, is that people with mental disabilities in the UK have only 40 percent of the employment probability of those with other types of disability, a lower percentage than in many other OECD countries (OECD, 2010).

In its 2017 Green Budget, the Institute for Fiscal Studies summarises the situation as follows (Emmerson, Johnson and Joyce, 2017).

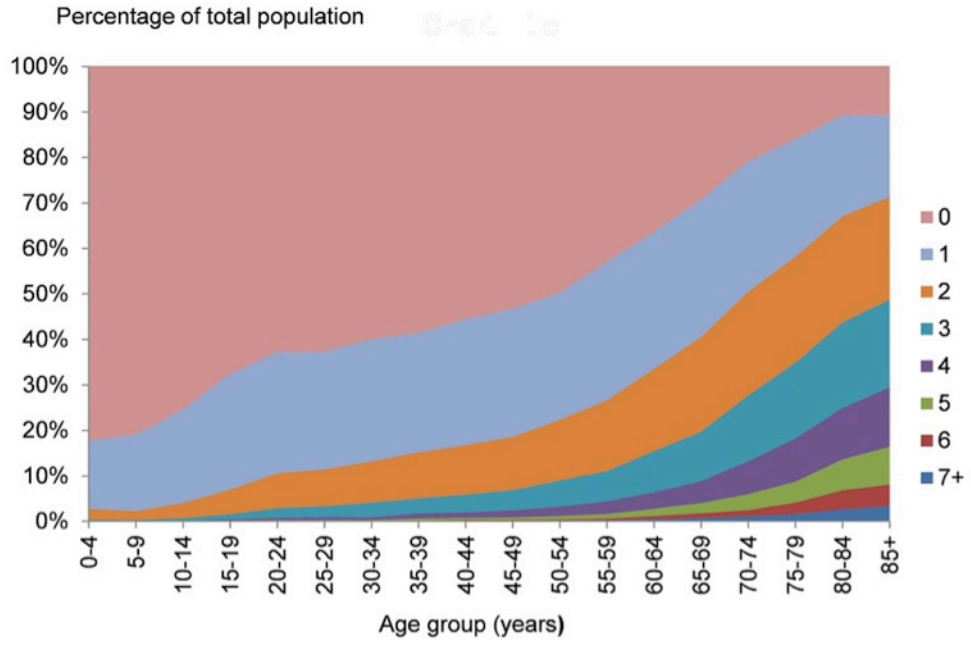
- Seventeen percent of people of working age are disabled; 49% of them are in paid work, compared with 81% of the non-disabled (p. 23).
- Fifty-three percent of the disabled received incapacity or disability benefits or both (p. 179). In 2016–17, the government will spend £24 billion on these benefits for 3.5 million

working-age people. This is 26% of non-pensioner benefit spending and equivalent to about a sixth of UK spending on health (p. 177).

- The Government ultimately wants about one-third of those currently not working to be in work (p. 177).

Not surprisingly, causes of disability change with age. According to the 2017 *Health Profile for England*, mental health and substance abuse issues are of greatest concern until about age 50 to 55 when chronic diseases (e.g., cardiovascular disease and diabetes) and musculoskeletal disorders become more important (PHE, 2017). Furthermore, Figure 2 summarises chronic conditions by age group, showing the rapid increase in multiple disability with age.

Figure 2. Proportion of the population with long-term conditions by age group: 2012-13



Notes: In 2012 to 2013, over two-thirds of people aged 60 to 64 had one long-term condition, and a third had two or more.

Source: PHE, 2017, 5.3 Figure 6

The cost of disability and underemployment of the disabled is notstraightforward to quantify. Figure 3 presents an analysis by Dame Carol Black from a decade ago, which indicates the scale of the issue, suggesting a cost of as much as £76 billion per year to public finances and loss of as much as £129 billion to the economy.

Figure 3. Cost of working age ill-health, 2007 (£billions)

Worklessness – benefits	29
Health care	5-11
Forgone taxes	28-36
Total government	**62-76**
Worklessness – lost production	63
Sickness absence	10
Informal care	25-45
Health care	5-11
Total economy	**103-129**

Source: Black, 2008, p. 46.

It can be difficult to determine precisely what the barriers are to increasing the workforce participation of those with disabilities. In a 2013 survey by the Department for Work and Pensions, more support with their health condition was identified as needed by 39 percent of the disabled working population receiving benefits (DWP, 2013, p.13). Better support in managing their health was identified as a critical change that would help them seek work, find work and work more hours. This suggests, not surprisingly, that the kind of assistance needed is currently not readily available.

The need for assistance beyond benefit payments is reflected in other research. For example, colleagues from the University of York examined how an acute health shock (e.g., stroke, AMI, cancer) affected workforce participation, comparing those who experienced such shock with a matched sample of those who did not (Jones, Rice and Zantomio, 2016). They found that a health shock caused a significant reduction in labour market participation. In addition, those who remained active after the shock experienced a significant reduction in hours worked and earnings, and were three times as likely to receive disability benefits. Not surprisingly, the study found that limitations on activities of daily living roughly doubled after the health shock.

Other research from the University of York measured attitudes towards retirement within a year among men aged 50 or older, based on health status (Roberts, Rice and Jones, 2010). Willingness to continue to work later in life is a concern given the sustainability of the public pension system and potential labour shortages. Respondents in this study were asked to assess their own health as "poor", "fair", "good", or "excellent". Those who considered themselves in excellent health were 74 percent less likely to retire than those in poor health; those in good health were 60 percent less likely to retire. Financial incentives were not strong enough to encourage remaining in the workforce for those in poorer health. This suggests that innovative approaches are needed to help older workers with health problems or disabilities remain in the workforce. It is noteworthy that amongst OECD countries the UK is a very low spender on employment programmes and vocational rehabilitation (OECD, 2010).

The current UK Government has produced a report that recommends measures intended to take specific action to increase the participation of disabled individuals in the workforce (DWP and DH, 2017). This recommends involvement of a range of interests, from government to employers. For the health services sector, it includes such actions as discussion with patients about health barriers to work, timely access to treatments, occupational health services that are more easily accessible, and a focus on prevention and early intervention. This report was a combined effort of the Department of Work and Pensions and the Department of Health, a recognition that cooperative efforts are important. Of course, to make a difference, this will require sufficient resources and a strong commitment by both departments.

An issue that has only begun to receive the necessary attention is the effect on workforce participation of caregiving, particularly women caring for aging relatives. A review of empirical research published between 2006 and 2016 on the relationship between informal caregiving to elders and labour force participation concludes that midlife women who are primary caregivers for elderly patients are liked to work fewer hours than counterparts without caregiving responsibilities (Moussa, 2018). In a study in England, researchers found that those who worked full time and provided care within the household (women and men), or cared for a partner/spouse (women only), were more likely to stop working than those not providing care. Women who performed a caregiving role more than ten hours a week were far more likely to stop working then women not providing care (Carr, et al., 2016). Such research demonstrates the need to reduce dependency amongst older people, suggesting an important role for health care, in conjunction with social care services, in reducing, or even preventing, the need for caregiving. Of course this argument underlies much of the concern with securing better integration of health and care services.

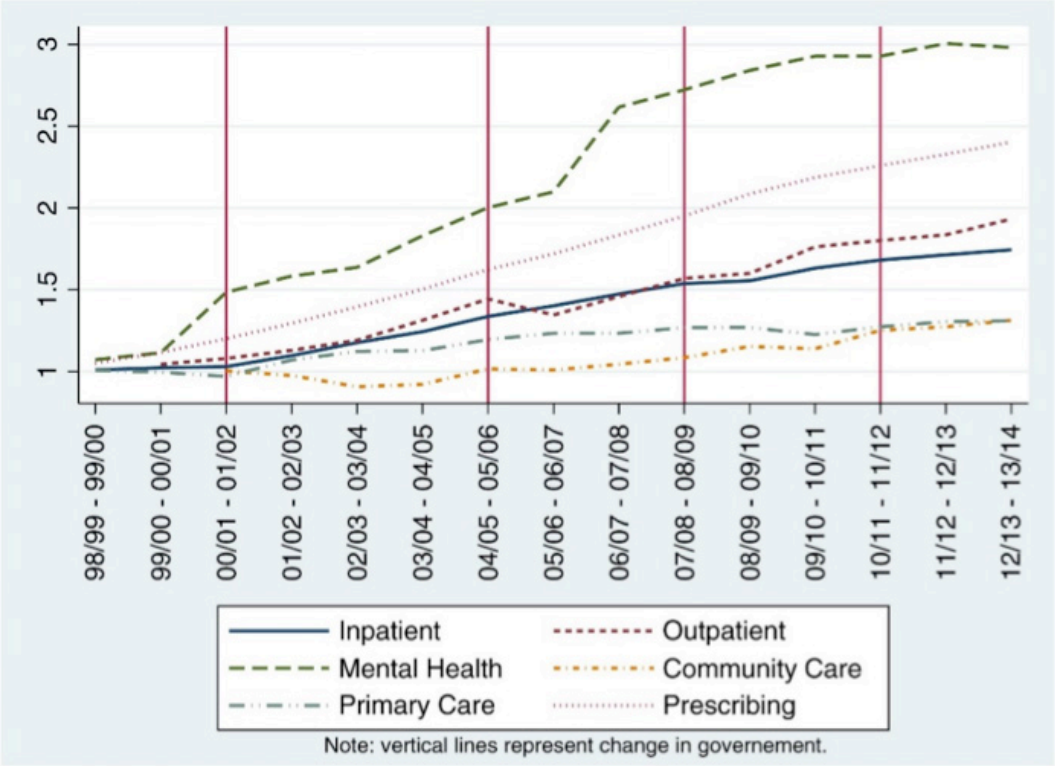
In summary, the UK historically has been poor at providing the necessary support to working-age, disabled individuals and caregivers who wish to enter, return to, or remain in the labour market. So far as prevalence is concerned, mental health and musculoskeletal disorders appear to be the predominant challenge. The key issue for health policymakers is to identify the priorities for NHS action. These are likely to include coordination with employment, benefits, public health and prevention programmes, and with employers. Working across sectors is always a challenge and this will be no exception.

4. Demonstrating Good Stewardship of Public Resources

Treasury stewardship concerns about health care are familiar: some commentators argue that health spending is a bottomless pit; powerful vested interests may distort priorities and impose barriers to optimal policies; and inefficiency is a chronic problem in all health systems.

One measure of health system performance is the relationship between health spending and amenable mortality[2]. The UK performance is around the median of European countries. The UK has been taking steps to address the efficiency challenge. Figure 4 shows output growth by health sectors calculated by colleagues from the University of York. Mental health has experienced the greatest growth, an important finding given its impact on participation in the labour market as noted above

Figure 4. Chained output growth index by sectors; rebased to 1998–99

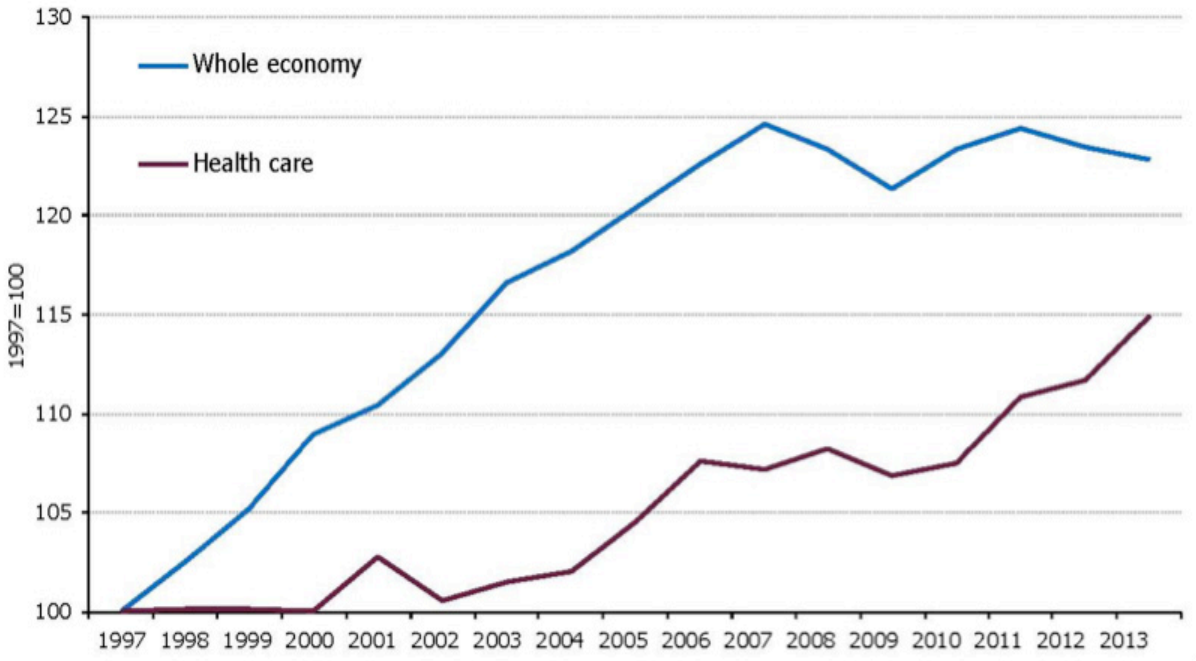


Source: Bojke et al, 2017, p557

The Office for National Statistics (ONS) uses similar methods and produces indices of publicly funded health care productivity growth. A 2018 analysis for the years 1995–2015 shows a steady increase in productivity of about 1.5% per annum over the 10 year period to 2015 (ONS, 2018). Productivity growth in health care and growth in the entire economy are shown in figure 5. The publicly funded NHS, according to this analysis, has outperformed the economy as a whole in recent years.

[2] "Amenable mortality" is "deaths that should not occur in the presence of timely and effective health care" (Nolte and McKee, 2012, p.2114).

Figure 5. Cumulative productivity growth in health care and in the whole economy



Source: Licchetta and Stelmach, 2016, p.14.

The NHS has frequently launched initiatives to promote the efficient delivery of services. Lord Carter's recent reviews of hospitals is one example (Lord Carter, 2016). Agencies such as the Audit Commission, the Modernisation Agency and (currently) RightCare have focused on these issues; Public Health England has produced an Atlas of Variations that compares care for specific diseases and conditions countrywide (PHE 2018), which can act as a starting point for exploring inefficiency.

Even if each organisation within the health care system performed flawlessly, the system itself still could be inefficient if the balance of care is inappropriate— for example if hospital care is emphasized at the expense of primary care, public health or community services. Improving such allocative efficiency requires a whole-system perspective. Attempts certainly have been made—as far back as the 1960s and 1970s when a 'Balance of Care' model was developed by Department of Health analysts. But such initiatives have rarely been sustained.

The Atlas of Variation presents clear metrics that relate to balance of care and allocative efficiency, but these require careful interpretation. Take as an example a country-wide map that shows variations by county of the rate of emergency admission for people aged 75 years and over with a length of stay of less than 24 hours. At first sight, areas with high admission rates might be assumed to reflect failed care, but there are many reasons why an area might have a high rate including factors other than the quality of care.

Where does the UK stand, then, on the pursuit of efficiency? Numerous initiatives to measure and improve technical efficiency have been undertaken, but few have been sustained. Something very like the Audit Commission needs to be reconvened with a stronger focus on technical efficiency in NHS organisations. Lack of institutional continuity is a problem at the centre, as is to managerial capacity in many NHS organisations.

NICE seeks to address allocative efficiency at the micro level, but efficiency considerations often are absent in clinical guidelines. At the macro level, commissioning was the great promise for improvement, but now is widely seen as having failed. The institutional and analytic capacity needed to make an effective assessment of the balance across health care sectors—secondary, community, primary, social care and public health – is largely absent.

5. Fiscal Sustainability

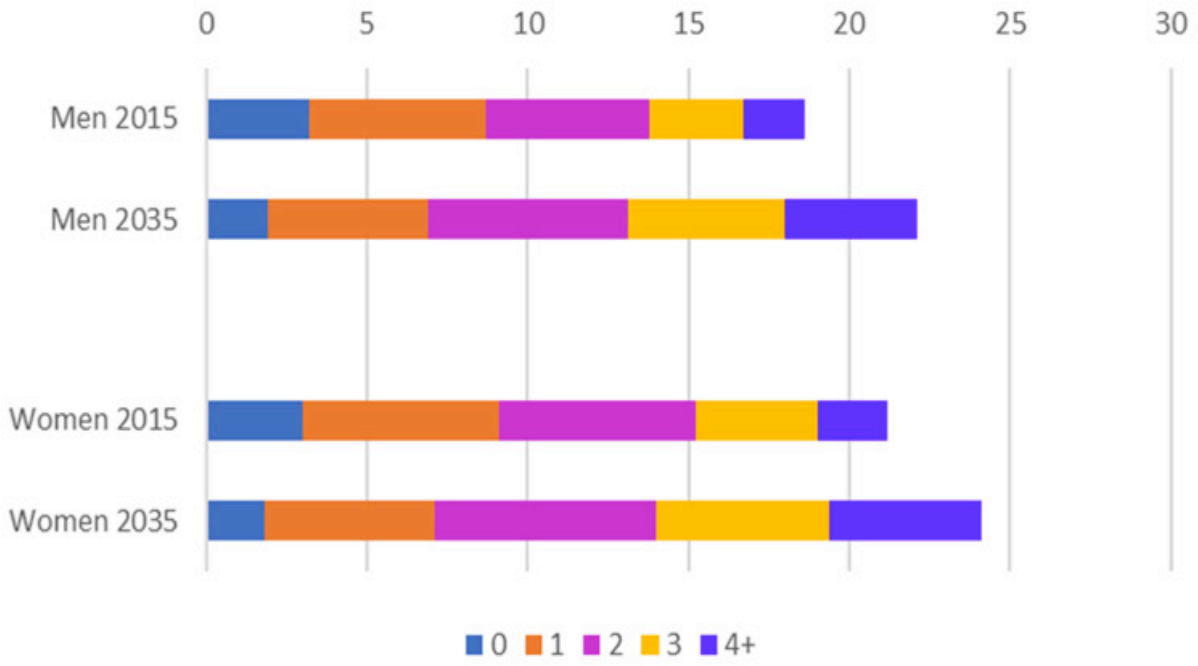
The health system gives rise to two fundamental concerns for the Treasury: first, that upward pressures on health care spending are so remorseless that the NHS as currently organised will become fiscally unsustainable and, second, that few systemic attempts have been made to moderate expectations of or specify the limits of entitlements to NHS care.

As Timmins documents, Beveridge believed that a national health service would raise the general level of health and fitness of the nation and, by reducing sickness absence, raise productivity and national prosperity (Timmins, 1995). The national health service, then, would pay for itself or, at the least, keep people well enough to avoid endlessly rising health-related costs. Beveridge's analysis assumed that over the twenty years from 1945 to 1965, costs would remain steady at £170 million per year, in retrospect a hopelessly optimistic assumption.

In recent years more extensive analysis has informed spending projections. The "Wanless Review," published in 2002, attributed much of the increase in health care spending to innovations in technology and treatments (Wanless, et al., 2007). In 2016, the Office for Budget Responsibility (OBR) published research that shows wide variations in projected spending over the coming 50 years depending on population changes, productivity and "other pressures", most notably technological innovation and morbidity changes (Licchetta and Stelmach, 2016). A 2018 publication from the Institute for Fiscal Studies and the Health Foundation analysed what impact a "modernised" NHS might have on the health budget in England (Charlesworth, et al., 2018). All these analyses have in common a predicted increase spending, which is often found to depend heavily on the assumed future health of the population.

Figure 6 shows the projected increase in life expectancy at age 65 over a 20-year period for men and women, using detailed microsimulation methods based on personal risk factors (Kingston, et al., 2018). For men, the years increase is from 18 to about 22; the number of coincident diseases also increases. The amount of time lived with zero diseases, or with only one, is decreasing. Without behavioural change, people are therefore likely in the future to live with longer periods of multiple disease and the associated disability A key policy question is therefore the extent to which this trend can be reversed, or chronic conditions can be better managed.

Figure 6. Life expectancy at 65 by number of diseases, 2015 and 2035

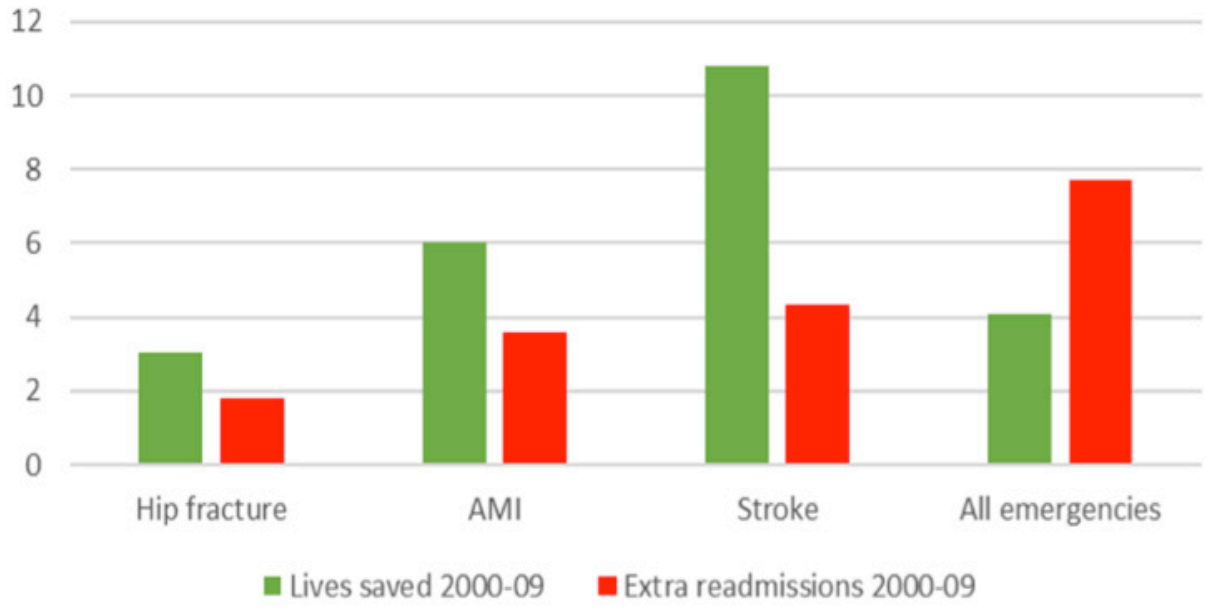


Source: Kingston, et al., 2018.

Innovation in medical technology undoubtedly benefits patients, but it also can increase health care costs in ways often unanticipated. For example, McGuire and colleagues analysed the introduction of PTCA as an alternative to coronary artery bypass grafting. They found that about 30 percent of stent procedures that used this new technology were replacements for open heart surgery. However, the remaining 70 percent were additional treatments for patients who would not have received surgery otherwise. Therefore, although PTCA is an effective and less expensive technology than CABG, it expands the treatable population. This is one example of how improved technology can increase spending, despite its benefits.

A study published in 2018 examined improved survival after an emergency hospital admission (Laudicella, et al., 2018). We found about 37 percent of the increase in unplanned emergency admissions over a ten-year period were for people who previously would have died. Figure 7 shows details for hip fracture, AMI and stroke. Of course, the improvement in survival rates is laudable, but this does create a frail population more prone to additional emergency admissions. This raises challenging ethical and economic issues that need full discussion.

Figure 7. Increases in survival and associated readmissions within one year, per 100 patients, 2000 to 2009



Source: Laudicella, et al., 2018

To look at this from a somewhat different perspective, if the NHS can successfully improve population health and quality of life, and also either avoid or mitigate the effects of disability, then sustainability of all public services is affected positively. Rather than asking how social care can help the NHS, we perhaps should we be asking how the NHS can help social care by reducing demand. Of course, pensions, benefits and other programmes also could be positively affected in a similar manner.

To summarise, then, expenditure control always has been a strong priority in the NHS, but the focus may be too narrow. The NHS has immense potential to influence the future sustainability of the health system and broader public services, including social care. To fulfil this potential, however, the NHS needs to focus on reducing dependency on public services by according higher priority to health-related quality of life, prevention, and disease management. Productivity improvements are key to addressing expenditure constraints, but will be a gradual process requiring increased capacity for analysis and redesign of services.

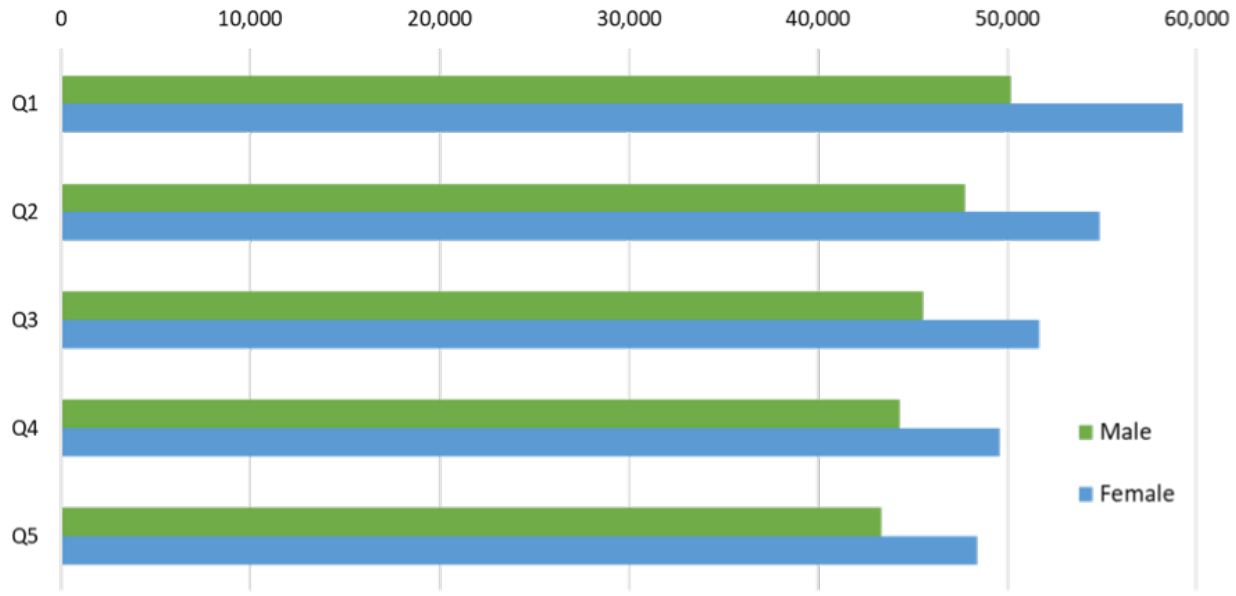
6. Supporting Societal Wellbeing

The improved health created by the NHS is essential to wellbeing, but the metrics for measuring the value of wellbeing are not well developed. The Treasury's traditional measure of progress is the improvement in per capita gross domestic product. Yet wellbeing clearly depends on factors other than income, such as health, and there is a powerful case for reassessing how it is measured.

If health care (and health insurance of the sort offered by the NHS) were to enter the calculations, a number of factors would have to be incorporated. On the plus side are: personal utility derived from benefits of health care (QALYs gained); reduction in financial risk; and the altruistic desire to ensure everyone is cared for, redistributing resources from the wealthy and healthy to those who are poor and sick. Subtracted from this are the welfare loss of paying taxes and the moral hazard that people will use more health care because it is "free". That the benefits outweigh the costs is clear from the high proportion of developed democracies that have some form of government-sponsored health insurance (Nyman, 2012).

The contribution of the NHS to improved health is manifest. Furthermore, the redistributive characteristics of the NHS is presented in figure 8. Asaria et al (2016) estimate the lifetime expected costs of hospital care for each deprivation quintile, by gender, with Q1 the most deprived. One might expect that, because the life expectancy of the bottom quintile is eight years less than the top quintile, less might be being spent on that group. The reverse is true, however. This graphically demonstrates the strong redistributive nature of the NHS. It furthermore underlines the costs to individuals and the economy of the persistent the profound national inequalities.

Figure 8. Lifetime hospital costs by IMD quintile £2011/12



Source: Asaria, Doran and Cookson, 2016

The other major contribution of the NHS to social welfare is reflected in the uniquely strong financial protection it offers to citizens in times of sickness. In its periodic survey of high income countries, the Commonwealth Fund routinely finds that UK respondents report the lowest levels of financial hardship associated with ill-health, and – probably as a result – the highest levels of satisfaction with their health system (Osborn et al, 2016). Furthermore, strong financial protection is likely to obviate the unnecessarily high levels of household saving

that would be likely to occur without the national health insurance function. In this sense, the social protection associated with the NHS is also likely to offer a useful macroeconomic benefit, in the form of moderating dysfunctional levels of saving.

To summarise, policy makers need to focus more debate on wellbeing, defined by a range of measures, rather than just by economic prosperity. It is clear that the NHS succeeds in providing care to all socioeconomic levels, providing a level of social protection to those most vulnerable. Research shows that mental health is a particularly high priority, both in wellbeing and, as noted earlier, in procuring and maintaining employment. A major policy challenge is to identify how health and social care, and public health, can contribute to wellbeing, and what must be left to other sectors or to the individual.

7. Conclusions and Recommendations

Responding to scepticism about the value of health spending requires improvement in two areas. First, the terms of the debate need to be based more accurately on a better understanding, partly though better metrics, of what the health sector actually produces for the individual and society. Second, serious reconsideration needs to be given to NHS priorities and approaches. Some of this requires substantial changes in policy, some less so.

The important messages for the NHS are summarised in figure 10.

Figure 10. Messages for the NHS

For policy

- Identify optimal role for targeted preventive services
- Higher priority for disability at younger ages, especially in musculoskeletal and mental health
- Nurture links with other sectors and employers
- Create and gather better metrics to define the NHS contribution to social wellbeing

For service delivery

- Help people be prepared for employment
- Reduce the burden of caregiving
- Reduce dependence on all public services
- Undertake appropriate experimentation and evaluation

For regulators

- Adopt informed, consistent and sustained attention to efficiency improvement
- Accord greater attention to allocative efficiency using better metrics and decide who is accountable
- NICE
    - Consider formally including workforce productivity in evaluation criteria
    - Bring "unrelated" future costs into evaluation methodology

Changing our perception of the value of the NHS requires innovative methods for both understanding and expressing "value". We emphatically should not abandon the principles of compassion, solidarity and equity that underlie the NHS, but must take on economic arguments on their own terms. The first issue is macroeconomic, ensuring that working age people are healthy enough to gain and maintain employment, or to reduce the burden on caregivers. Second, is the efficient use of public funds, requiring the insight and political will to rebalance care across sectors. Third, sustaining public financing of the NHS increasingly will require attention to longer lives characterised by more coincident morbidities in later years. Fourth and finally, measuring the contribution of the NHS to societal wellbeing, beyond health per se, requires new metrics and new policy discussions.

Although it may be tempting to continue to evaluate the health sector as we do other sectors, i.e., in economic terms, a strong case can be made for both tweaking the economic perspective and for also considering factors that are less clearly monetary. A sense of wellbeing is a public good on its own, many would argue, and should be an important metric in valuing the NHS.

We have come a long way since the National Insurance Act of 1911, but our aspirations are not markedly different. As Foerster wrote of that Act, "The hope is that the nation will gain because the poor, cared-for, will become stronger industrial and social citizens. Malthus would have been skeptical. Yet nations have shown themselves capable in the last century of raising their plane of living" (Foerster, 1912, p.310).

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105 Victoria Street
London SW1E 6QT
United Kingdom
www.ohe.org

Printed in the United Kingdom
The Office of Health Economics (a company limited by guarantee of registered number 09848965)
OHE is a charity (registration number 1170829)
ISBN number 978-1-899040-69-8

Office of Health Economics

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