



ANALYSIS

NHS AT 70

Productivity in the NHS: why it matters and what to do next

A clear strategy for increasing productivity is vital for a sustainable NHS, argue **Jennifer Dixon and colleagues**

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Earlier this year, the prime minister announced a financial settlement for the NHS over the next five years of 3.4% real terms growth, or £20.5bn (€23bn; \$27bn) a year by 2023-24.¹ Although greater than the 1.5% growth over the past eight years, the settlement is less than the long term average of 3.7% and the 4% recommended after recent detailed analyses.² It will not be enough to modernise the service or head off difficult decisions about what services and treatments to provide. These decisions will be easier if the NHS is able to get more out of the funding it receives, which requires a focus on productivity.

Productivity is not normally a centrepiece of reforms to the NHS, but it should be. Paul Krugman, the distinguished US economist, put the issue starkly: “Productivity isn’t everything, but in the long run it is almost everything. A country’s ability to improve its standard of living over time depends almost entirely on its ability to raise output per worker.”³

However, productivity is a subject guaranteed to kill the attention of clinicians and patients. Clinicians associate it with working harder—something viewed with derision in today’s resource squeezed stressful working environment—and patients with cutting costs. Policy makers highlight new technologies that “disrupt” usual working practices as being the key to higher productivity—a narrative that can easily alienate staff and often omits the need to support staff to introduce and adapt new innovations, without which diffusion is slow. It is true but a cliché that increasing productivity means working more effectively not necessarily harder, reducing waste not sacrificing quality.⁴

Consistent with the rest of the economy⁵ and international best practice,⁶ productivity of the NHS is calculated by measuring how much output is produced from resources (inputs). The output measure attempts to capture both the amount and the quality of care, including waiting times, survival rates, patient reported outcomes, and preventive primary care.⁷ Inputs include

the number of doctors, nurses, and support staff providing care, the equipment and clinical supplies used, and the hospitals and other premises where care is provided.

Until 2008, productivity growth in the NHS (with adjustment for quality) more or less tracked that in the wider economy. But since 2009, it has averaged 1.4%, easily outperforming that in the wider economy of 0.2%.⁸ However, recent productivity gains have occurred mainly because of restrictions in staffing levels⁹ rather than a purposeful strategy. This clearly is not sustainable in the long term. What should the NHS now do?

What can help to increase productivity?

Welfare and morale

Studies across several sectors report that the health and welfare of staff influences their productivity.¹⁰ The NHS has one of the largest workforces of any organisation in the world, and about 70% of the costs in the NHS are from employing staff. Work is often physically, emotionally, and psychologically demanding as the service runs 24 hours a day, 365 days a year.

The NHS staff survey is a barometer of morale, engagement, and stress levels across England and results vary widely by trust. In 2017, 38% of the 487 727 staff who responded reported feeling unwell because of stress in the past 12 months.¹¹ The annual findings could feature much more highly in the assessment of performance by trust boards and regulators (Care Quality Commission and NHS Improvement) and be linked to scrutiny of management practice and leadership style of the organisation. It is no coincidence that trusts rated by the Care Quality Commission as high performing, such as Salford, Northumbria, East London Foundation Trust, and Frimley/Wexham Park, score highly on the staff survey. General practitioners don’t participate in the staff survey, but a 2015 survey conducted by the Commonwealth Fund of GPs from 10

countries found that 59% of those from the UK said their job was extremely or very stressful, a higher proportion than elsewhere.¹²

The sickness absence rate for all those working in the health sector amounts to 3.5%, considerably higher than the rate of 2.9% for the public sector as a whole and 1.7% for private sector workers.¹³ Public Health England estimates that the cost of sickness absence by NHS staff is £2.4bn a year: reducing absences by one day per person a year would save around £150m (roughly the cost of 6000 full time staff).¹⁴

The NHS is already investing in initiatives to improve physical and mental health and wellbeing in the workplace.¹⁵ These include promoting healthy food choices in the workplace, the cycle to work scheme, uptake of flu vaccination, mindfulness, and other prevention and self-management support, as well as targeted support such as counselling and physiotherapy. These types of interventions are effective,¹⁶ yet implementation is highly variable across the NHS.

Training in service improvement

The productivity of staff could be boosted considerably if every one of the 1.3 million workers, particularly clinical staff, is supported through training to improve their everyday work. Most trusts rated by the CQC as outstanding have some kind of structured programme to build this capacity in staff.¹⁷ One example is the flow coaching programme, part funded by the Health Foundation and delivered by Sheffield Teaching Hospitals NHS Foundation Trust.¹⁸ This has trained hundreds of NHS staff in team coaching and improvement science skills and is based on coaching programmes that have proved successful in the US.¹⁹ Clinical and non-clinical coaches receive face-to-face training to run weekly “big room” meetings, which bring together a range of staff and patients involved in a clinical pathway to discuss, plan, and review improvements.

Flow coaching academies have now been set up in seven trusts across the UK to drive improvements in patient experience and patient flow through pathways of care and reduce unwarranted variations in processes and outcomes, working cultures, and behaviours. “Why has it taken me 20 years to be introduced to these skills,” remarked one consultant recently, on learning how to improve the flow of patients through her department. “How could I do my job properly without them?” The royal colleges of general practitioners, surgeons, and physicians are among those taking the initiative by encouraging their members to train in quality improvement. But these efforts are still the exception and not yet the rule.

Good management

Good management is critical, and its large effect on productivity in many different types of organisations has been quantified convincingly over the past decade.²⁰ Highly productive organisations work at it for years, management working with frontline workers to design improvements with constant monitoring, investment, and incentives. The lessons include that small everyday changes, built up over years, add up to highly reliable and constantly improving operating processes.

To achieve this healthcare needs effective and stable management and an engaged workforce. The benefits are reliable, safe, and less wasteful care for patients—that is, important productivity gains. Although the NHS has recognised the need to improve the quality of leadership practised by clinical and non-clinical leaders,²¹ the focus on boosting good operations management has been much weaker. This needs to change.

Workforce planning

One way to increase productivity is to substitute costly with less costly staff where appropriate.^{22 23} But since 2010, the number of expensive hospital consultants has increased by 22% while the number of nurses has increased by just 1%.²⁴ Shortages have resulted from too few staff being trained, or attracted from other countries, to meet present and future demands.²⁵ If demand outstrips the supply of labour, staff command higher wages, irrespective of their productivity. Clearly the NHS needs to improve workforce planning.

Technology

Staff also need the right equipment and technology to do their jobs. One of the reasons why labour productivity is lower in European countries than in the US is that US companies have invested more heavily in capital and technology,²⁶ a process termed capital deepening.²⁷ The prime minister and the secretary of state have recently emphasised the promise of artificial intelligence, data analytics, and robotics.²⁸ And in a recent book on the future of the professions, Richard and Daniel Susskind describe these and other new and assistive technologies that are likely to substitute for some tasks currently carried out by doctors and make work processes more reliable and cheaper.²⁹

But the NHS has been experiencing capital shallowing rather than deepening as capital funds have been raided to fund hospital deficits, leading to a backlog in maintenance and limited investment in technology.³⁰ And although the government's recent industrial strategy includes investment in the life sciences, the objective is less about technology to improve the productivity of the UK's largest industry (the NHS) and more on developing businesses to boost the wider economy in the UK. Without further attention, opportunities to boost productivity in the NHS will be missed. The answer includes protecting capital funding from raids and better scanning, experimentation, and evaluation of technology for their effect on productivity in the NHS than is the case today.

Reduce variation

Another way to improve productivity is to reduce variation in clinical care, as this may indicate wasteful activity.³¹ Several important initiatives already exist. For example, in England, Getting it Right First Time (GIRFT) is a clinically led, data driven programme to improve value in hospital care³² and Rightcare supports clinical commissioning groups to improve cost effective care and reduce variation.³³ Clinical audits also seek to encourage better clinical outcomes partly by identifying variation against established guidelines. All of these are useful and rely on data to highlight the need for change.

But once variation is identified, the support to help clinicians make change is inadequate. We have already discussed efforts by trusts and some royal colleges to build staff capability in quality improvement. The NHS could also learn from clinical networks such as the ImproveCareNow initiative in the US, where networks of clinicians and patients work together to set priorities for improvement and use quality improvement techniques combined with data to make effective changes.³⁴

Reduce perverse incentives

Increasing productivity does not just mean doing more of the same with the same or fewer resources, but also adding more quality for the inputs. More quality must include producing better health—for example, such that costly hospital admission is avoided when appropriate. Each year more patients are treated

in hospital, and paradoxically this has boosted productivity: the more patients treated, the higher NHS output. This kind of higher output may represent poor quality care, and productivity measures need to be developed that better account for this.

If the NHS is failing to deliver the right sort of care in the right places, something may be wrong with the incentives for organisations and individuals. The national tariff payment system incentivises hospital treatment because the more patients that hospitals treat, the more they are paid. Transformation funds have been used to subsidise hospitals in deficit³⁵ in some parts of the country, frustrating plans to shift care out of hospital. Inadequate primary, community, and social care support are resulting in avoidable hospital treatment: the biggest increase in hospital admissions over the past 10 years is for same-day treatment for older people.³⁶ These areas need urgent attention.

Making change happen

There is clear scope for the NHS to boost productivity. Some of the ingredients to do so are already in place, but others clearly are not. Disruptive technologies that will enhance productivity may be on the horizon, but their effect is uncertain and they will require investment and staff support to be realised. In the meantime productivity gains can continually be made at the front line of care, with patients and clinicians having a large part to play supported by technology, and at the intersection between healthcare and other services. Incremental improvements on these multiple fronts could add up to make all the difference. This won't happen by chance: an overt coordinated strategy for productivity is now needed and must be included in the forthcoming 10 year NHS plan.

Key messages

Sustainable increases in productivity don't necessarily mean working harder or cutting staff and resources

Large gains can be made from good management and ensuring staff welfare and training in quality improvement methods

Technology has a big potential role, but the NHS could be smarter in scanning for opportunities, evaluating them, and supporting staff to implement them

Incremental changes over several years can add up to substantial improvements

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- 1 Department of Health and Social Care. *Prime minister sets out 5-year NHS funding plan*. Press release, 18 Jun 2018. <https://www.gov.uk/government/news/prime-minister-sets-out-5-year-nhs-funding-plan>
- 2 Charlesworth A, Johnson P, eds. *Securing the future: funding health and social care to the 2030s*. Institute for Fiscal Studies, Health Foundation, 2018.
- 3 Krugman P. *The age of diminishing expectations*. MIT Press, 1994.
- 4 Black N. From cutting costs to eliminating waste: reframing the challenge. *J Health Serv Res Policy* 2017;22:73-5. 10.1177/1355819616685739 28429979

- 5 Office for National Statistics. *Methodology: national accounts*. 2016. <https://www.ons.gov.uk/economy/nationalaccounts/uksectoraccounts/methodologies/nationalaccounts>
- 6 Eurostat. *European system of accounts: ESA 2010*. <http://ec.europa.eu/eurostat/documents/3859598/5925693/KS-02-13-269-EN.PDF/44cd9d01-bc64-40e5-bd40-d17df0c69334>
- 7 Bojke C, Castelli A, Grašić K, Street A. Productivity growth in the English National Health Service from 1998/1999 to 2013/2014. *Health Econ* 2017;26:547-65. 10.1002/hec.3338 27046836
- 8 Castelli A, Chalkley MJ, Rodriguez Santana IDLN. *Productivity of the English National Health Service: 2015/16 update*. Centre for Health Economics, 2018.
- 9 Bojke C, Castelli A, Grašić K, Howdon D, Rodriguez Santana I, Street A. Productivity of the English NHS: 2014/15 update. Centre for Health Economics Research Paper 146. University of York, 2017.
- 10 Loeppke R, Taitel M, Haufle V, Parry T, Kessler RC, Jinnett K. Health and productivity as a business strategy: a multiemployer study. *J Occup Environ Med* 2009;51:411-28. 10.1097/JOM.0b013e3181a39180 19339899
- 11 NHS staff survey 2017 results. http://www.nhsstaffsurveys.com/Caches/Files/P3088_ST17_National%20briefing_v5.1_LB_RC_FR_20180419.pdf
- 12 Davies E, Martin S, Gershlick B. *Under pressure: What the Commonwealth Fund's 2015 international survey of general practitioners means for the UK*. Health Foundation, 2016.
- 13 Moberly T. Sickness absence rates across the NHS. *BMJ* 2018;361:k2210. 10.1136/bmj.k2210 29802100
- 14 NHS Employers. *NHS health and wellbeing framework*. 2018. <https://www.nhsemployers.org/your-workforce/retain-and-improve/staff-experience/health-work-and-wellbeing/health-and-wellbeing-framework>
- 15 NHS England. *NHS staff health & wellbeing: CQUIN 2017-19 indicator 1 implementation support*. 2018. <https://www.england.nhs.uk/wp-content/uploads/2018/05/staff-health-wellbeing-cquin-2017-19-implementation-support.pdf>
- 16 Braun T, Bambara C, Booth M, Adetayo K, Milne E. Better health at work? An evaluation of the effects and cost-benefits of a structured workplace health improvement programme in reducing sickness absence. *J Public Health (Oxf)* 2015;37:138-42. 10.1093/pubmed/udu043 25002437
- 17 Jones B, Woodhead T. Building the foundations for improvement. How five UK trusts built quality improvement capability at scale within their organisations. 2015. <https://www.health.org.uk/publication/building-foundations-improvement>
- 18 MCA. Flow coaching academy. <http://www.sheffieldmca.org.uk/flow>
- 19 Dyess SM, Sherman R, Opalinski A, Eggenberger T. Structured coaching programs to develop staff. *J Contin Educ Nurs* 2017;48:373-8. 10.3928/00220124-20170712-10 28759696
- 20 Bloom N, Genakos C, Sadun R, Van Reenen J. Management practices across firms and countries. Harvard Business School Working Paper 12-052. 2011. <https://www.hbs.edu/faculty/Publication%20Files/12-052.pdf>
- 21 NHS Improvement. *Developing people, improving care: one year on*. 2018. <https://improvement.nhs.uk/resources/developing-people-improving-care-one-year/>
- 22 Niezen MG, Mathijssen JJ. Reframing professional boundaries in healthcare: a systematic review of facilitators and barriers to task reallocation from the domain of medicine to the nursing domain. *Health Policy* 2014;117:151-69. 10.1016/j.healthpol.2014.04.016 24857559
- 23 Martínez-González NA, Djalali S, Tandjung R, et al. Substitution of physicians by nurses in primary care: a systematic review and meta-analysis. *BMC Health Serv Res* 2014;14:214. 10.1186/1472-6963-14-214 24884763
- 24 Lalond S, Charlesworth A. *A year of plenty?* Health Foundation, 2017.
- 25 House of Commons Public Accounts Committee. *Managing the supply of NHS clinical staff in England HC731*. Stationary Office, 2016.
- 26 Bloom N, Sadun R, Van Reenan R. Americans do IT better: US multinationals and the productivity miracle. *Am Econ Rev* 2012;102:167-201. 10.1257/aer.102.1.167
- 27 Kumar S, Russell RR. Technological change, technological catch-up, and capital deepening: relative contributions to growth and convergence. *Am Econ Rev* 2002;92:527-48. 10.1257/00028280260136381
- 28 Wise J. Investing in artificial intelligence could help the NHS pay for itself. *Telegraph* 2018 Jun 3. <https://www.telegraph.co.uk/business/2018/06/03/investing-artificial-intelligence-could-help-nhs-pay/>
- 29 Susskind D, Susskind R. *The future of the professions*. Oxford University Press, 2017.
- 30 Kraindler J, Firth Z, Charlesworth A. False economy: an analysis of NHS funding pressures. 2018. <https://health.org.uk/sites/health/files/False-economy-NHS-funding-pressure-May-2018.pdf>
- 31 Mays N. Reducing unwarranted variations in healthcare in the English NHS. *BMJ* 2011;342:d1849. 10.1136/bmj.d1849 21427034
- 32 Getting It Right First Time. <http://gettingitrightfirsttime.co.uk/>
- 33 NHS England. *NHS Rightcare*. <https://www.england.nhs.uk/rightcare>
- 34 Improve Care Now. *What we do*. <https://www.improvecarenow.org>
- 35 National Audit Office. *Sustainability and transformation in the NHS 2018*. <https://www.nao.org.uk/wp-content/uploads/2018/01/Sustainability-and-transformation-in-the-NHS.pdf>
- 36 Stevenon A, Deeny S, Friebe R, Gardner T, Thorlby T. *Emergency hospital admissions in England: which may be avoidable and how?* Health Foundation, 2018.

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