

Institute for Public Policy Research



RESILIENT HEALTH AND CARE

LEARNING THE LESSONS OF
COVID-19 IN THE ENGLISH NHS

Chris Thomas

July 2020

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SUMMARY

Covid-19 is one of the biggest shocks in modern peacetime history. It has caused huge loss of life, and severely impacted both our society and our economy. It might be tempting to see the outbreak as a case of bad luck – a one-off event from which we should return to normal, as soon as possible. This would, however, be a mistake. The evidence is clear that global disease outbreaks are a growing threat (WEF 2019). We should, therefore, approach Covid-19 like a natural disaster. When flooding or earthquakes occur, it is always important to build back with flood defences and resilient construction. We need to do the same in the health and care system.

Put another way, the next few months will not just be about rebuilding our healthcare system to its previous state, but about building it back better. Of course, that does not mean preparing retroactively for an identical crisis. The next health shock, when it comes, is likely to look quite different. Instead, the onus is on the government to consider how the healthcare system could be if it were given the capacity, resources, and flexibility to adapt to shocks when they emerge.

To begin this process, we need to explore why our system struggled this time. Through a rapid review of the international data, we identify three key macro-themes: capacity, resourcing and population health (**see annex 1 for a summary scorecard**). Across these themes, we show that the UK system was in a poor position to resist a health shock, compared to the international standard.

The fact that the UK's health and care system has struggled during the coronavirus pandemic can be traced back to decisions taken during austerity. Driven by a desire to cut the deficit after the 2008/09 financial crash, government challenged public services to deliver the same level of service, and the same outcomes but with steadily less resources. Their underlying logic was that quality could be protected, while waste would be cut. Covid-19 has shown the consequences of these cuts, and exposed their short-termism and inefficiency.

Now, the UK government should take the opportunity to create a system where resilience is considered efficient, where long-term thinking is encouraged, and where resources are allocated to deliver on it. To this end, English health policy might borrow from economic policy's 'fiscal rules', and introduce six 'health and care resilience rules'. We recommend that these are as follows.

On capacity

- 1. Capacity rule:** The UK lacked capacity at the beginning of the Covid-19 outbreak, and had to withdraw services from huge cohorts of people. This follows a decade of bed closures across the acute sector, without corresponding investment in community or social care services. Government should allocate catch-up funding in the community and social care sector, to build their capacity as primary sources of care. In the community sector, legislation should link catch-up funding to acute sector closures. In the first instance, it should receive a funding uplift equal to the historic savings from the 8,800 bed closed between 2010 and 2020 (£4.5 billion) – plus a rebate equal to the annual 'savings' still being made from those bed closures (£650 million per year). This would equal £8 billion between now and the end of the parliament – or £2 billion extra community sector funding per year. Any further bed closures should raise this sum proportionately higher.

2. **Staffing rule:** Covid-19 proved that workforce capacity is critical not only for our own safety, but also for the mental health and wellbeing of healthcare staff. The UK has one of the smallest health and care workforces in the world – particularly given the size of our health system and our overall economy. Modern health and care is also changing what is expected from its professionals – stressing adaptability, teamwork, problem solving, generalist knowledge, and ability to work with technology and innovation. To adapt to this after the pandemic, the government must expand the People Plan process – by allocating funding, including social care, and extending the time horizon covered to ten years. Beside that, government should commit to recruiting at least an additional 250,000 people into the NHS and 400,000 people into social care by 2030. To support that, legislation should be introduced that guarantees health and care workers an immigration fast track until that target is met – defined as skilled worker status and exemption from Visa fees and the NHS surcharge. This recruitment drive should be supported by a £3.5 billion training budget over this parliament.

On resourcing

3. **Modernisation rule:** While Covid-19 has proved to be a catalyst for some remarkable transformation, such as the shift to digital in primary care, the UK had a standing start. Compared to other countries, our use of the best digital tools, medical technologies, machinery, and medicines is far behind. Government should aim to meet international standards of adoption and spread of technology and for NICE-approved medicines.
4. **Sustainable funding rule:** Inevitably, capacity, innovation, and workforce are all related to funding. While the UK spends more than the OECD average on healthcare, it spends less than the G7 group of advanced economies. Moreover, it spends much less on some parts of healthcare – such as infrastructure, treatments, and technology (Thomas 2019b). Government should ensure that the NHS has sufficient revenue and capital. Overall, this should mean a commitment to increase the NHS budget to at least £183 billion by 2029/30 (Darzi et al 2018). On capital, this should mean raising the Department of Health and Social Care capital budget to £13.3 billion by 2024/5 – to meet the OECD average (Thomas 2019b). Government should also ensure a sustainable funding deal for social care, delivered through general taxation (Quilter-Pinner 2019).

On public health

5. **Population health rule:** A healthier population will, almost always, be more resilient to disease outbreaks – including Covid-19. However, the UK performs poorly on preventing the causes of ill health. Government have committed to a ‘long-term strategy for empowering people to live healthier lives’ (Conservative Party, 2019). This strategy should be published as a white paper during 2020. It should include ambitious plans to a) progress towards halving childhood obesity and bring UK adult excess weight below the OECD average of 59 per cent b) to beat the OECD average, by reducing the average number of litres consumed by the average adult down by 1 litre per year urgently c) bring the smoking rate below 5 per cent by 2030 d) meet WHO recommendations on vaccine coverage and e) achieve international standards on diagnosis and treatment management – secondary and tertiary prevention – for conditions such as cancer.

6. **Health inequality rule:** Covid-19 exposed systematic injustice in the UK's public health system, putting some at much greater risk than others. The evidence shows that the English health inequalities strategy (1997–2010) did make progress on our stubborn levels of inequality (Barr 2017). However, with the government departing from this strategy in 2010, progress has stalled. Government should commit to restarting progress – with an overall commitment to cut inequality by at least 10 per cent by the end of the parliament. To deliver this, a new health inequality strategy should be overseen by a Cabinet Office 'Health Inequality Committee' chaired by the prime minister, in the model of the National Security Council.

REMIT

This analysis focusses on lessons that can be generated for England. Where England data is unavailable, in international datasets, UK data is used. However, in this report, we limit our policy recommendations that UK government can take to improve resilience in the English NHS. The lessons may, however, be relevant within devolved contexts.

1. THE CURRENT APPROACH

REFLECTING ON COVID-19

Covid-19 has been one of the most significant shocks to the UK in modern history. It has caused tens of thousands of deaths, pushed our health and care system to extremes, done significant economic damage, and necessitated some of the most invasive social policies in most of our lives.

It might be tempting to see the outbreak as a case of bad luck – a one-off event from which we should return to normal as soon as possible. But this would be a mistake. The evidence is clear that global disease outbreaks are a growing threat (WEF 2019). This makes Covid-19 more like a natural disaster. When flooding and earthquakes occur, it is always critical to build back with flood defences and resilient construction. We now need to do the same in the health and care system.

Put another way, we need to consider not just rebuilding our pre-existing system, but building back better. Of course, that does not mean preparing retroactively for an identical crisis. The next health shock, when it comes, is likely to be very different. Rather, we should consider how the system could better resist shocks when one next emerges.

Reflection is more important for the UK than for most, as it is clear that the UK's Covid-19 outcomes were amongst the world's worst. By the 31st of May, the ONS reported the total number of Covid-19 deaths at 46,687 (ONS 2020a).¹ Beyond the mortality rate from Covid-19, our health system also saw:

- 2 million 'non-urgent' operations cancelled (Sample 2020)
- a 75 per cent drop in urgent cancer referrals from GPs (Hiom 2020)
- a 50 per cent drop in attendance at A&E for heart attack (Bakker 2020)
- a 52 per cent increase in excess deaths from dementia (Alzheimer's Society 2020)
- a 20 per cent drop in mumps and rubella vaccinations (by April 2020), on top of the UK's lost 'measles free status' in 2019 (McDonald et al 2020).

These figures are indicative of why the number of deaths in the UK from causes other than Covid-19 have been much higher than normal during the outbreak.² It is important we understand why, and what proportionate steps we can take to support both recovery and future sustainability in the aftermath.

AUSTERITY WAS AN INEFFICIENT APPROACH TO HEALTHCARE MANAGEMENT

A clear place to start is our reaction to the global financial crash, from 2009 onwards. This fundamentally changed our approach to public services – with good financial management, efficiency, and spending 'within our means' central to the Coalition government's new economic model. Put simply, the government wanted to deliver the same outputs for significantly less money.

1 Rates are reported by nation: 363.8 per 100,000 people in England, 319.5 in Scotland, 289.3 in Wales, and 185.9 in Northern Ireland.

2 Excess deaths were double the usual rate in the UK in April. In Europe, only Spain observed a higher peak (and is now reporting better outcomes than the UK) (Tallack 2020).

Cuts to adult social care and public health were particularly sharp. Local government lost almost 60p in every £1 of central government funding (LGA 2019). Ringfenced public health budgets have seen real-terms cuts of almost £1 billion in just five years (2014/15 to 2019/20) (Thomas 2019a).

The NHS was meant to be spared austerity. David Cameron's 2010 election pledge was to 'cut the deficit, not the NHS'. But in reality, funding did not keep up with inflation, and the population grew and aged. The health service was, in the end, asked to do much more with much less: through £20 billion of efficiency savings. A similar target was set in the Five Year Forward View (2015 to 2020).

DEMONSTRATING THE INEFFICIENCY OF RUNNING THE SYSTEM HOT³

Covid-19 shows that this approach is neither productive, nor efficient. During the crisis, the impact of the cuts made have become even clearer. Lost capacity in public health meant poorer population health, creating unnecessary risk (Public Health England 2020). Lost capacity in social care made it harder to draw a protective circle around our most vulnerable people. And lost capacity in the health service required the chancellor to give it a 'blank cheque', to deny millions of non-Covid patients care, and to build extravagant field hospitals like the Nightingale just in case our limited excess capacity was breached.

It is possible to quantify some of the inefficiencies of running the system hot. A first case study is the Nightingale hospital. A freedom of information request by the Health Service Journal (HSJ) revealed that the government spent £220 million setting up the Nightingale field hospitals, and £15 million running them in April (Carding 2020). This gives a highly conservative cost of the Nightingales of £235 million. The National Institute for Health and Care Excellence (NICE) reports that the cost of an excess 'bed day' in hospital is £222 – a figure derived from the national tariff (NICE 2015; Edge Health 2017).⁴ The cost of the Nightingale hospitals was subsequently equivalent to providing 963,115 days (and nights) of care in a hospital. If we had invested that same £235 million upfront, we could have equated to an estimated 2,640 more beds open throughout 2019 – allowing the NHS to use the investment to improve performance in winter 2019 *and* to enter the Covid-19 crisis with more excess capacity.

A second case study is the funding allocated as part of the government's rescue package. In total, the NHS received £6.6 billion and local authorities £3.2 billion (NAO 2020).⁵ It would be unfair to suggest that all of this could have been invested in capacity earlier – as much of it went to reactively purchase ventilators and PPE, and we do not want to suggest crisis does not require some adaptability. However, we can question the funding within this package that focussed on supporting hospital discharge. This totalled £1.3 billion (ibid).

Hospital discharge has been a long-standing problem. In 2014, the National Audit Office (NAO) showed that the NHS deals with 1 million emergency readmissions within 30 days of discharge every year, at a cost of £2.4 billion/annum. This suggests some patients are being discharged too quickly. Yet, in 2016, NAO found that the cost to the NHS of treating patients in hospital who no longer need to receive acute clinical care is more than £820 million a year (NAO 2016) – meaning other patients are not being discharged fast enough. This indicates problems across the system – namely, that the acute sector is being pressured to push some people out too early, but also that the community and social care sector do not have the capacity to take patients who could be released.

3 That is, permanently running the system at or very close to full capacity.

4 £244 per 'excess bed day' when uplifted to 2019 prices.

5 A conversion of £13.4 billion of debt into an equity share was also announced, though this is not the same as £13.4 billion of extra funding.

The £1.3 billion invested into discharge could have looked to alleviate this problem earlier – leaving the country in a better position during both normal times, and any unforeseen crisis periods. Indeed, £1.3 billion could have procured an estimated:

- 5.3 million nights of care in the acute sector (equivalent to keeping 14,597 beds open in 2019)
- 12.3 million nights of care in residential care homes (equivalent to keeping 33,645 extra beds open in 2019)⁶
- 10.3 million nights of care in residential nursing homes (equivalent to keeping 28,331 extra beds open in 2019)⁷
- 43–86 million hours of community care within people’s homes, helping support wellbeing and ensure discharge is successful⁸.
- an array of community interventions, such as, 28 million group physiotherapy services, 17 million sessions of one-to-one occupational therapy, or 15 million sessions with a dietician (Beechem et al 2020).

Alternatively, the funding could have been used to fund a mix of all four, increasing capacity across the whole system.⁹

This is relatively blunt analysis. But it does show the benefits even relatively small sums can have when they are invested in long-term quality and outcomes. The final costs of Covid-19 – government intervention is currently estimated to cost £192.3 billion by the Office for Budget Responsibility (see Shapland 2020) - will only serve to make this cost-benefit analysis more compelling.

METHODOLOGY

This briefing, therefore, begins to define what a paradigm shift to resilience should look like. It’s first important to define resilience. In this paper, we focus on the concept of robustness, as in the ‘adaptation with robustness’ definition of resilience set out by Abimbola and Topp (2018): “Robustness is the capacity of a system to absorb and recover from shocks and stress without major negative consequences. Adaptability is the capacity of a system to adjust, reorganise, transform or modify in response to shocks and stress”.

Methodologically, we generate insights into UK resilience that are based, predominantly, on international data. This provides significant insight, particularly because it allows exploration of how robustness interacts with three core themes: capacity, resourcing, and public health. Each is a core component of the UK’s ability to absorb shock. Each can also be linked, hypothetically, to the UK’s Covid-19 outcomes.

This analysis, in turn, helps identify where there have been failings in the broader health and care strategy employed in the last decade. As the policy section highlights, this can help indicate areas where policy needs to change after Covid-19 – so as to build back the NHS better.

However, this work also raises further research questions. International and retrospective analysis tell us less about the culture, direction, and values of the NHS – the adaptability component of Abimbola and Topps’s definition of resilience. This should be a focus of further research and policy, and will be the focus of additional IPPR work.

6 Based on estimates of care home places costing £741 per week (Beechem et al 2020). This included living expenses and external services.

7 Based on estimates of nursing home places costing £880 per week (ibid). This included living expenses and external services.

8 Based on estimates of homecare costing £30 per hour (UK Care Guide 2020; see all NHS 2019). Other sources estimate a cost range of £15 to £30 per hour.

9 For example, 3,649 acute beds; 7,102 nursing home beds; 8,446 care beds; and 10.8 million hours of community care and 2 million occupational therapy sessions.

2. THEME ONE: CAPACITY

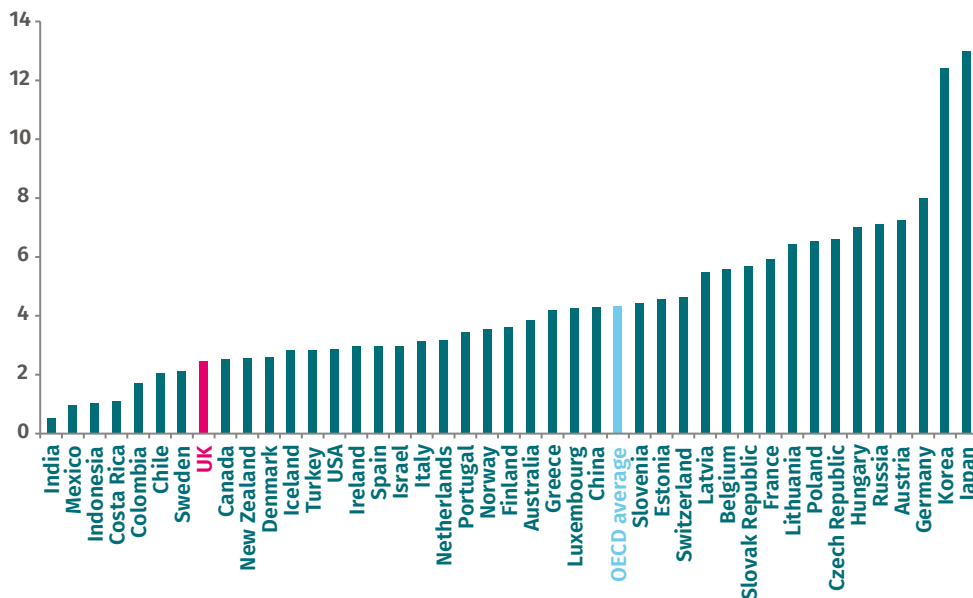
BEDS AND OCCUPANCY

Sometimes, hospital treatment is unavoidable. But many people stay in hospital when they are clinically ready for discharge. This can lead to increased costs and worse outcomes for patients (Darzi 2018).

As such, it is right that our strategy should be to maximise the use of social and community care, where appropriate (Warren 2020). Indeed, this has been a key part of government strategy, as outlined in the Five Year Forward View and the NHS Long-Term Plan for England. However, there is a right way and a wrong way to achieve this. Government strategy in the last 10 years has focussed on Roemer’s Law, which states that a ‘hospital bed is a filled bed’.¹⁰ They have subsequently looked to consistently reduce acute capacity, motivated by the idea that fewer beds will push the right people to the community and deliver savings. The UK has one of the lowest numbers of beds in the OECD.¹¹

FIGURE 2.1: THE UK HAS RELATIVELY FEW HOSPITAL BEDS

Acute hospital beds per 1,000 population 2019 (or latest year)



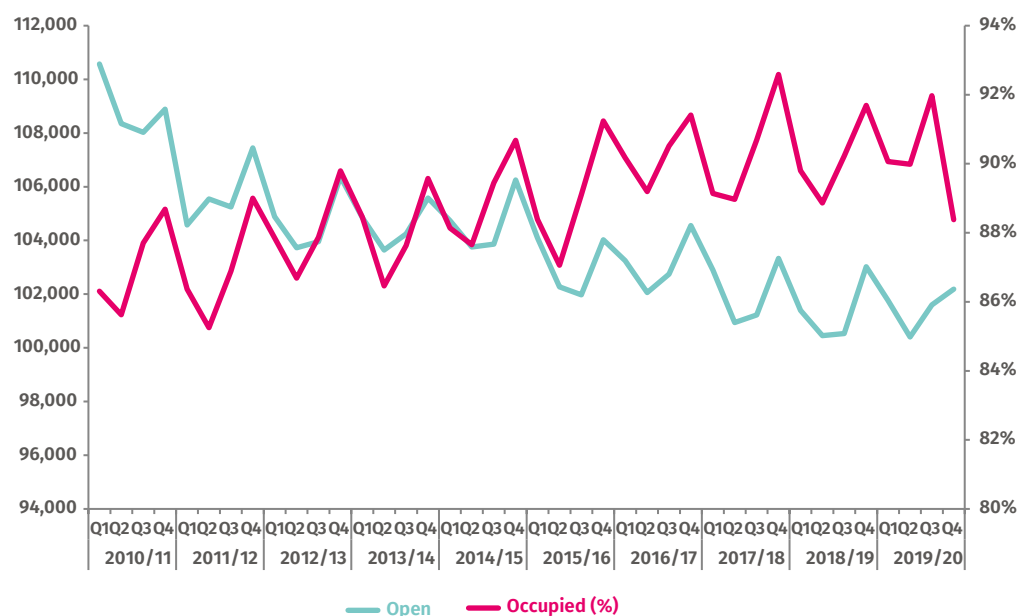
Source: Author’s analysis of OECD 2020a

10 The inference being that if a bed is available, it will be quickly filled by a patient who does not need to be in hospital, and could receive better care elsewhere

11 We would need an estimated 120,000 more hospital beds to meet that average level – based on an estimated UK population of 66.4 million people.

However, occupancy data suggests that this is not working quite as intended. Simultaneously, there has been a significant increase in the occupancy level in acute hospitals.

FIGURE 2.2: AVERAGE OCCUPANCY LEVELS HAVE INCREASED TO VERY HIGH LEVELS THIS DECADE
 Change in acute beds available (net = blue) and acute beds occupied (% = pink), England, 2010–2019, quarterly reports



Source: Author's analysis of NHS England 2020b

When acute beds are removed without adequate investment going into community and social care or public health, there is nowhere for patients who do need some care, even if care outside of hospital, to go. Instead, delayed discharge – the term for patients left in hospital unnecessarily – while patients who have been discharged, but not received enough support, return.

This poses a significant risk. The most comprehensive study of acute occupancy showed that levels above 85 per cent¹² create discernable risks during normal periods of operation (Bagust et al 1999; see also Cooke et al 2004 and NHS Providers, 2017). The average occupancy rate in England has not been below 85 per cent for over a decade.

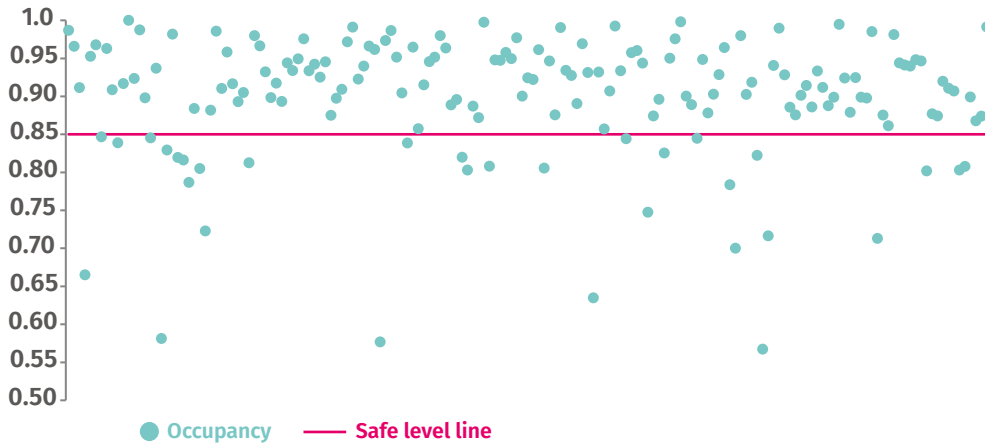
The study also showed that, at over 90 per cent occupancy, an acute hospital could expect to face 'regular bed crises' (ibid). Over the last decade, average bed occupancy in England's acute sector did not exceed 90 per cent up to 2015, but has since done so in 11 out of 21 quarters.

This trend is not driven by some outlier hospitals, where occupancy is high, but impacts the whole system. In the last data release before Covid-19 hit, less than one in five hospitals reported below 85 per cent occupancy. Three in five had occupancy over 90 per cent and a quarter over 95 per cent.

¹² The NHS officially recommended a 92 per cent maximum occupancy in 2017, though it is unclear on what grounds such a high level was chosen (NHS England 2017).

FIGURE 2.3: MOST HOSPITALS IN ENGLAND HAVE OCCUPANCY LEVELS THAT COULD BE CONSIDERED UNSAFE

Occupancy levels (%) for all reporting acute hospitals in England



Source: NHS England 2020b

Critical care occupancy was much lower – and is an area in which capacity has seen a small increase in recent years (King’s Fund 2020). However, the UK has one of the lowest intensive care unit (ICU) bed numbers in Europe, relative to its population (Rhodes et al 2012). Indeed, many regions entered Covid-19 with just tens of beds open.¹³

FIGURE 2.4: CRITICAL BEDS AVAILABLE BY REGION IN JANUARY 2020

Number of ICU beds open, but not occupied in England, NHS commissioning regions, January 2020



Source: NHS Digital 2020

¹³ Caution should be applied to overly blunt cross-region comparisons. Population sizes vary between NHS commissioning regions, and some critical care beds might serve people from more than one region.

This further suggests little tolerance to significant increases in demand, and a need to invest in resilience.

Overall, the occupancy challenges in the acute sector suggest that there has not been a sufficient increase in capacity in social care or the community sector. Data on social care and community bed capacity is not available in England (Ewbank et al 2017). However, there are clear indications of shortages. For example, the Care Quality Commission estimated that there were 407,000 social care beds in 2017. Despite our growing and ageing population, this is lower than the 525,000 social care beds available in the mid-1990s (King’s Fund 2020). Furthermore, IPPR have estimated a shortage of 75,000 beds by 2030.

STAFF NUMBERS AND WELLBEING

Capacity means little without an adequately staffed, trained, and healthy workforce. The UK’s health workforce size is small compared to other advanced economies. It would require an additional 20,584 doctors and 28,552 nurses to meet the average.¹⁴

FIGURE 2.5: THE UK HAS RELATIVELY FEW DOCTORS PER 1,000 PEOPLE

Doctors per 1,000 population 2019 or latest data



Source: Author’s Analysis of OECD 2020b

Furthermore, domestic analysis has shown that shortages persist in almost every other UK medical role, including:

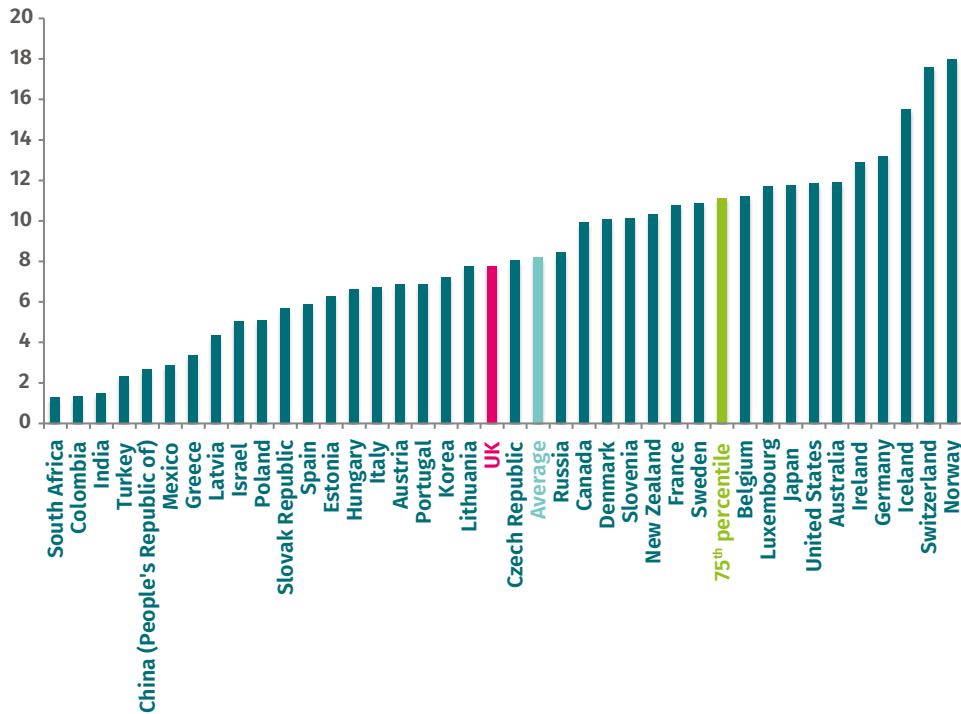
- the lowest number of GPs, relative to the population, since 2003
- a nursing shortage of over 40,000
- a shortage of 100,000 full-time equivalent (FTE) staff amongst mental health and community providers (Health Foundation 2019).

International data also shows that the UK has a relatively small number of workers in long-term care roles – indicating a significant lack of capacity in adult social care (figure 2.7). Moreover, it shows that the UK also experienced one of the largest drops in the relative size of its long-term care workforce between 2011 and 2016.

¹⁴ Given the size of the UK economy, the amount we spend on health, and the demographic makeup of our population, there is a strong argument that our workforce should be above the OECD average. An alternative target would be meeting the 75th percentile, which would require an estimated 70,000 more doctors and 220,000 more nurses.

FIGURE 2.6: THE UK HAS RELATIVELY FEW NURSES PER 1,000 PEOPLE

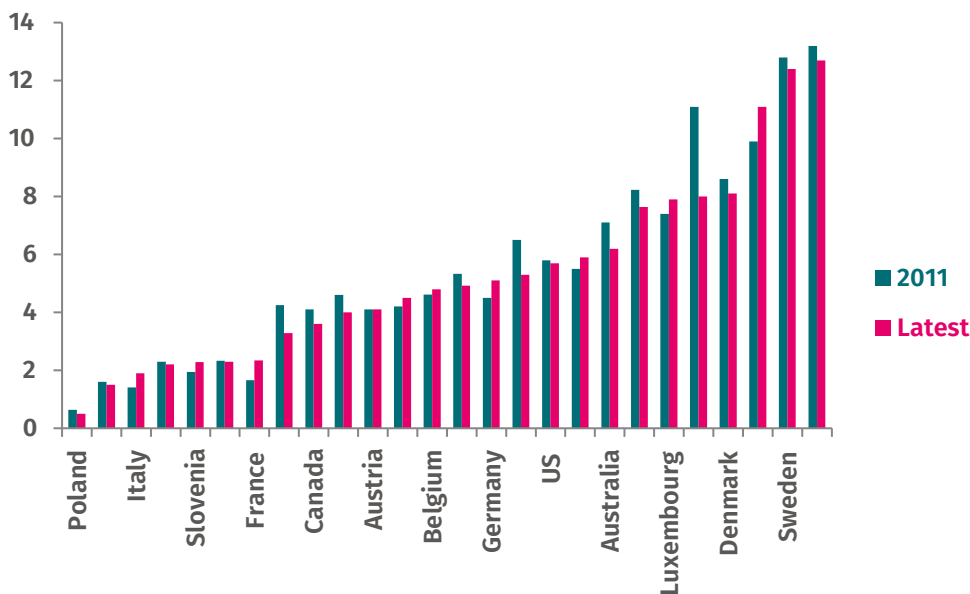
Nurses per 1,000 population 2019 or latest data



Source: Author's Analysis of OECD 2020c

FIGURE 2.7: THE UK HAS A SMALL AND DECLINING 'LONG-TERM CARE' WORKFORCE

Social Care Workforce per 100 people over the age of 65, 2011 and 2016 (or latest) data



Source: Recreated from OECD 2018

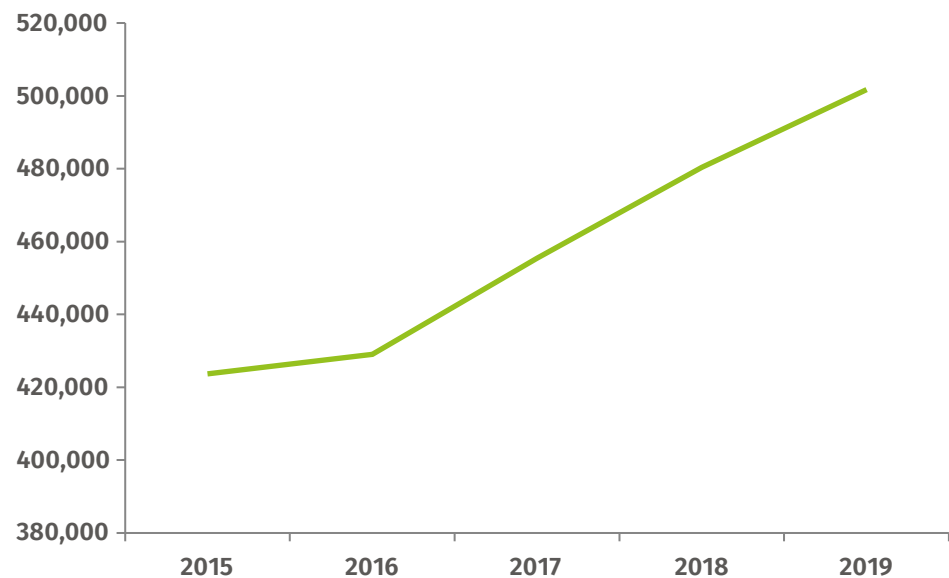
This is likely driven by the poor conditions in social care. IPPR analysis has shown that over half of all workers in social care were paid below the real living wage in 2018, and one in four workers were on a zero hour contract (Dromey and Hochlaf 2018). This underpins an unsustainable level of turnover in the sector. Skills for Care estimate that 440,000 people leave their jobs every year – in a sector with approximately 122,000 vacancies at any one time. This equates to a turnover rate of 30.8 per cent (Skills for Care 2019).

Workforce shortages have consequences for the workers who remain in their roles. Healthcare sector shortages have seen workload, stress, burnout, and mental ill-health become business as usual for the healthcare sector. For example, the regular NHS staff survey shows that only 32 per cent of workers feel staffing levels are sufficient for them to do their job adequately. High levels of dissatisfaction have been recorded since the question was first introduced in 2015.

At the same time, the number of workers reporting illness from work related stress has increased – to over half a million in 2019, a 100,000 rise since 2015. Covid-19 is likely to raise this further.

FIGURE 2.8: WORKFORCE SHORTAGES ARE TAKING A HEAVY TOLL ON HEALTHCARE PROFESSIONALS HEALTH

Number of NHS workers who reported feeling ill due to stress, 2015–2019



Source: NHS England 2019

Over 1 in 2 health workers also indicated that they have come to work despite not being well enough to perform their duties – a worrying sign of pressure creating presenteeism (Ibid).

THEME 1 SCORECARDS

BEDS AND OCCUPANCY: SCORECARD

Indicator	Current	Comparator
Bed numbers	2.5/1,000 people	The average amongst G20 nations is 4.3/1,000.
Bed occupancy, general and acute	90.1 per cent average (2019/20)	On current evidence, 85 per cent is the best occupancy target.
Social care/community capacity	Estimated 470,000 capacity in social care; limited community data	While a 'shortage' in social care hasn't been quantified, supply is too small. We will need at least 550,000 beds by 2030. More data is needed to establish and monitor community capacity.

Assessment: Capacity has been reduced to unsafe levels over the last decade. Moving capacity to the community is a good goal, but closing acute beds without replacing the capacity in the community is poor strategy to achieve it. It is unclear that community and social care settings have received sufficient investment to increase their role in the healthcare economy.

Source: Author's analysis of NHS England 2020b; OECD 2020a; Dromey and Hochlaf 2018

STAFF NUMBERS AND WELLBEING: SCORECARD

Indicator	Current	Comparator
Nurses per 1,000	7.78	OECD 75 th percentile equals 11.14
Doctors per 1,000	2.95	OECD 75 th percentile equals 4.02 per 1,000 people
Long-term care workforce per 100 people over 65	3.3	OECD 75 th percentile equals 7.3 per 100 over 65s

Assessment: Capacity means little without workforce. The UK workforce is smaller than the OECD average, despite the UK spending more than average on health. This is evident to many in the country, who are coping with a full workforce crisis, particularly in nursing, general practice, and mental health settings. While capacity is important, the UK should also pay attention to the skills and make-up of its health and care workforce. Modern health and care is changing the demands we place on professionals – stressing adaptability, generalist skills, the ability to work with tech and innovation, collaboration, and communication skills. This should be a focus in attempts to increase workforce size.

Source: Author's analysis of OECD 2020b; OECD 2020c; OECD 2018

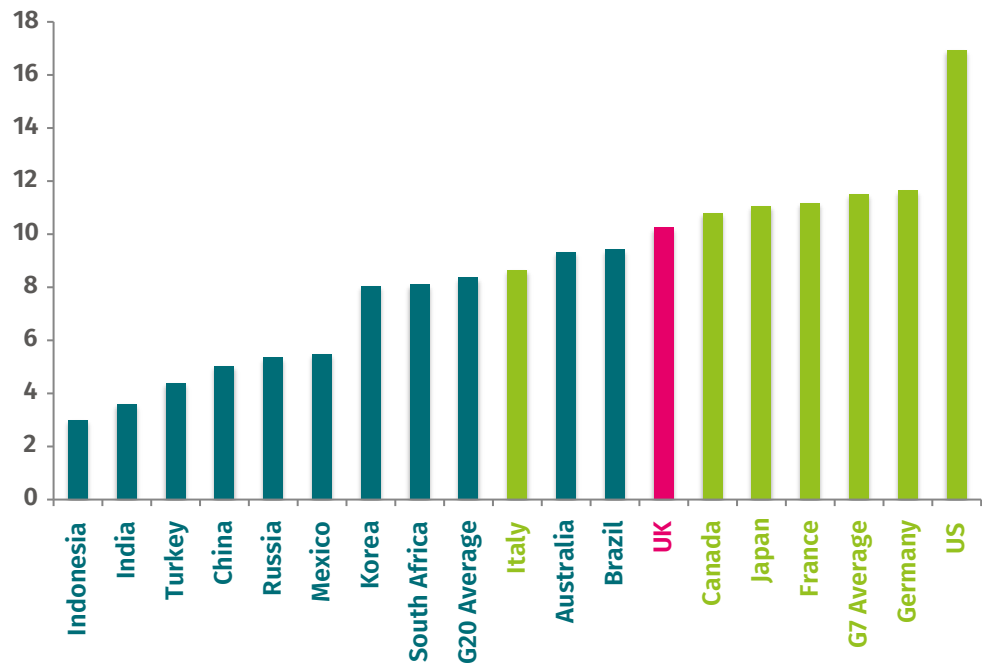
3. THEME TWO: RESOURCING

FUNDING

Relative to the size of its economy, the UK does spend slightly more on healthcare than the G20 average. However, it spends significantly less than the most advanced, G7 economies. Specifically, the UK spends the equivalent of 10.25 per cent of its GDP on health, compared to the G7 average of 11.5 per cent.¹⁵ The UK remains below the average even if the US is considered an outlier and removed from the calculation (10.6 per cent of GDP).¹⁶

FIGURE 3.1: THE UK SPENDS MORE THAN THE G20 AVERAGE, BUT LESS THAN THE G7 AVERAGE, ON HEALTH

Health spend by nation (% of GDP), 2019 or latest data (UK in pink, G7 in green)



Source: Author's analysis of OECD 2020d

Capacity, innovation and technology uptake rely on the capital component of the NHS budget. During austerity, this budget was often cut significantly – and was sometimes reallocated to the venue budget through capital-revenue transfers. This leaves us with a small capital budget, relative to our economy. The UK spends 0.32 per cent of GDP on healthcare capital, compared to an OECD average of 0.41 per cent of GDP.¹⁷

¹⁵ Meeting this level of spend would require £27.7 billion more investment per year.

¹⁶ Meeting this level of spend would require £7.6 billion more investment per year.

¹⁷ This translates to a £1.95 billion shortfall – though this would not account for any necessary 'catch-up funding' (for example, for maintenance, see Thomas 2019b).

FIGURE 3.2: THE UK SPENDS RELATIVELY LITTLE ON HEALTH CAPITAL, COMPARED TO THE OECD

Capital spend by OECD country (5 year rolling average, latest data, % GDP)



Source: Author's analysis of OECD 2020d

Insufficient capital funding makes transformation difficult. It makes it hard for the NHS to invest in the physical capacity it needs to deliver care, and it prevents it from delivering services differently – for example, by investing in digital infrastructure and technology that might replace or reduce strain on brick and mortar hospitals. This often relies on upfront investment, and therefore the NHS in 2020 remains one of the world's leading users of fax machines and pagers in an era of email and mobile phones. Indeed, rather than a digital transformation, the lack of capital in the NHS makes it hard to even maintain the estate. The urgent maintenance backlog – including issues like fire hazards and sewage leaks – is now over £3 billion (Thomas 2019b).

MODERNISATION

The UK has been the driving force behind many healthcare innovations, some of which have (or will) transform global health. However, we are also often slow to adopt those same innovations in our own health and care system. This can mean that outdated equipment, medicines, and care pathways remain in use – at least in some parts of the country.

In the short term, this evidently impacts patient outcomes. However, it also has an impact on our health resilience in a number of ways.

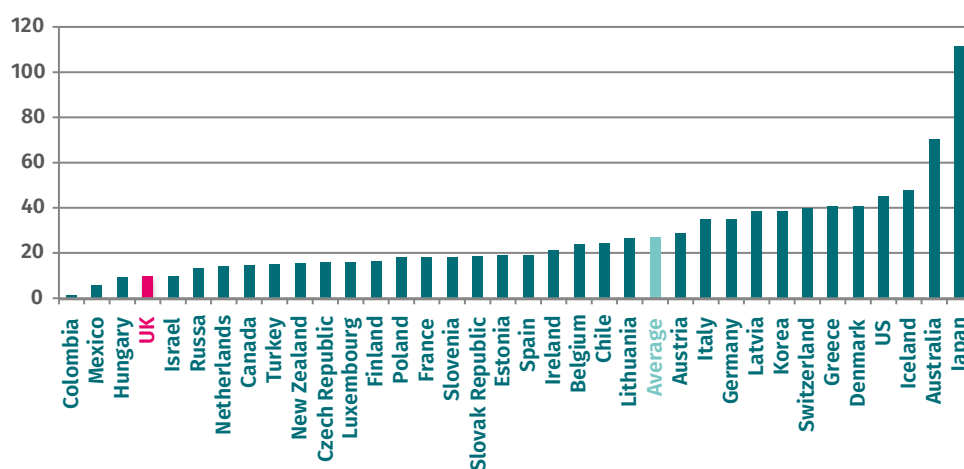
- Using up-to-date practices can free up time and capacity. For example, stroke service recalibrations in London not only improved care, but also saved time and money. Delivering on this potential is a key ambition of the NHS Long Term Plan for England.
- Covid-19 forced us to implement many digital innovations – such as telehealth in primary care. While this implementation was broadly successful, more proactive innovation would have made this transition easier and saved valuable time.

- Covid-19 has caused huge disruption to other treatment and care. Cancer, heart disease, and dementia have all been impacted – and there could be a detrimental affect on outcomes for years to come. Innovation could help the system recover and begin providing the best possible outcomes for people with these conditions.

In establishing how innovative the UK system currently is, it is possible to look at our use of both technology and innovative medicines. Regarding the former, OECD comparisons exist for CT scanners, radiotherapy equipment, and MRI machines. The UK comes out significantly below average in terms of availability.

FIGURE 3.3: THE UK HAS VERY FEW CT SCANNERS

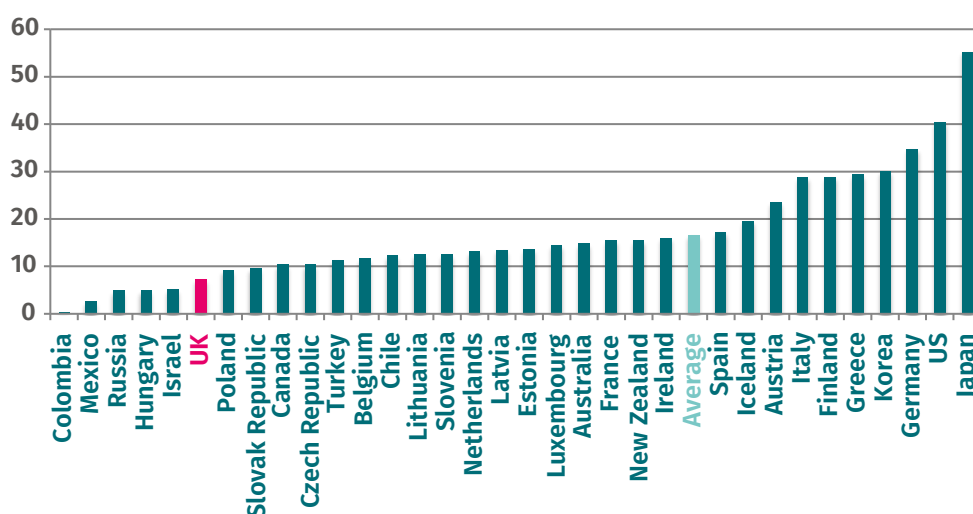
CT scanners per 1 million population



Source: Author's analysis of OECD 2020e

FIGURE 3.4: THE UK HAS VERY FEW MRI MACHINES

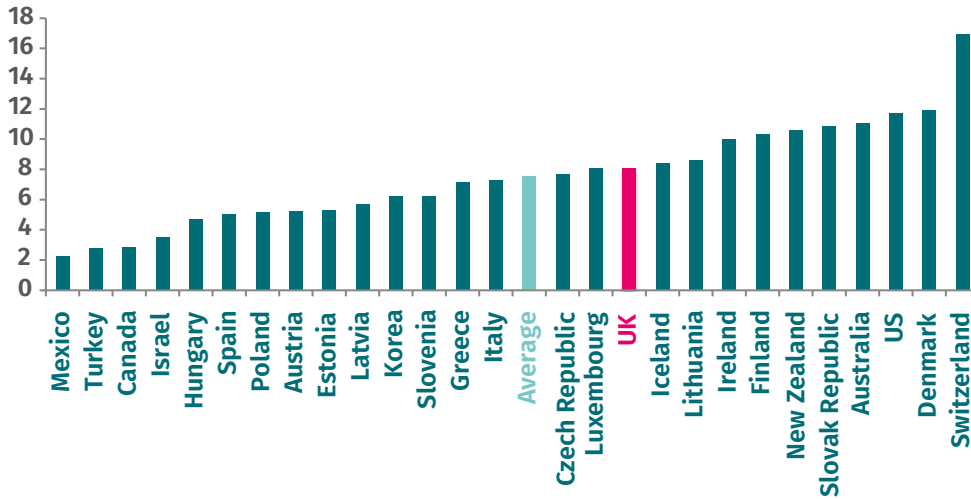
MRI machines per 1 million population



Source: Author's analysis of OECD 2020e

FIGURE 3.5: THE UK HAS AN AVERAGE AMOUNT OF RADIOTHERAPY EQUIPMENT (RTE)

RTE per 1 million population

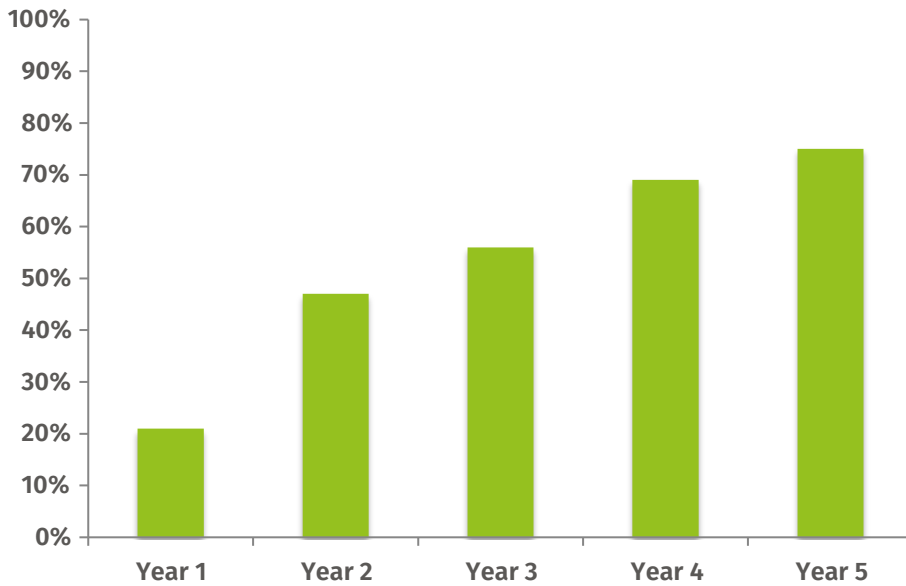


Source: Author's analysis of OECD 2020e

For the latter, information is produced annually by the Office for Life Sciences. They determine UK's uptake per capita of medicines first marketed between 2013 and 2017, and which have been approved by NICE. This is then compared to uptake of the same medicines in 15 comparator countries.

FIGURE 3.6: THE UK ADOPTS MEDICINES VERY SLOWLY, EVEN WHEN NICE APPROVED

Percentage of NICE-approved medicines adopted in the UK 5 years after their release, compared to 15 comparator countries



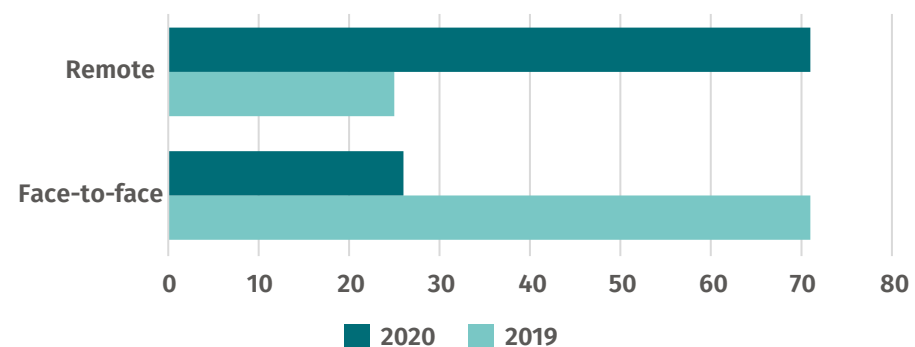
Source: Author's analysis of OLS 2019

The most recent figures show that the UK's uptake one year after the release of these medicines is just 21 per cent of comparator countries, and still on 75 per cent after five years. This makes little sense in the context of a capped medicine budget, and given the industry reimbursement scheme currently in place. Problematically, though the NHS could currently invest in a better offer – with spend over a certain limit reimbursed – it runs on a one-year 'break even' basis. As IPPR have shown elsewhere (Thomas 2020c), this often dissuades local providers from investing in innovation – even where it's cost-effective. Fixing these technical issues could give the NHS an opportunity to provide a more internationally competitive treatment offer. In turn, again as IPPR have recently shown, this transformation could have a positive impact on public finances and the economy (ibid).

More optimistically, there are signs that Covid-19 might change our difficulties with innovation. The outbreak catalysed some surprisingly rapid adoption and spread of innovation in the health system. One of the most remarkable examples of this is the shift to digital in primary care. RCGP surveillance data from a year ago shows that 71 per cent of appointments in general practice were face-to-face. The same data this year suggests that this has fallen to just 26 per cent, with 71 per cent now happening remotely (RCGP 2020).

FIGURE 3.7: THE SHIFT TO DIGITAL HAS BEEN RAPID DURING COVID-19

Face-to-face and remote appointments in general practice (%), March to April 2019 and 2020



Source: Recreated from RCGP 2020

However, it is important not just to innovate in a crisis, and the test of the system will be whether adoption and spread can be maintained post-Covid-19. If it is not, we are likely to have a standing start when the next crisis hits.

THEME 2 SCORECARDS

FUNDING: SCORECARD

Indicator	Current	Comparator
GDP Spent on healthcare (% GDP)	10.25	The average amongst the G7 is 11.5 per cent – and excluding the US, the average is 10.6
GDP Spent on healthcare capital (% GDP)	0.32	The average amongst the OECD is 0.41 per cent
<p>Assessment: Government have increased funding for the NHS, through the 2018 funding settlement. This is welcome, but more may be needed to meet the standard set by similarly advanced economies. Capital funding is a growing problem for the health system, blocking transformation. Moreover, social care funding remains in need of a sustainable solution.</p>		

Source: Author's analysis of OECD 2020d

UP-TO-DATE: SCORECARD

Indicator	Current	Comparator
MRI machines per million population	7.23	16.63
CT machines per million population	9.46	26.72
RT equipment per million population	8.06	7.54
Per capita uptake of new medicines	UK uptake is between 21 per cent and 75 per cent of the average in comparator countries, after five years	The UK should look to be as innovative as comparator countries
<p>Assessment: Innovation makes it easier to react to crises. In Covid-19, the UK has often moved from a standing start. It should prioritise the implementation of best practice medicines, technologies, and care pathways. Central to our success will be continuing some of the remarkable progress on spreading innovation seen during Covid-19 – such as in delivering digital services in primary care.</p>		

Source: author's analysis of OECD 2020e; OLS 2019

4.

THEME THREE: PUBLIC HEALTH

A HEALTHY POPULATION

Covid-19, like many infectious diseases, is more dangerous to those with underlying health conditions – such as:

- respiratory diseases (like COPD)
- heart disease
- severe obesity (BMI > 40)
- liver disease.

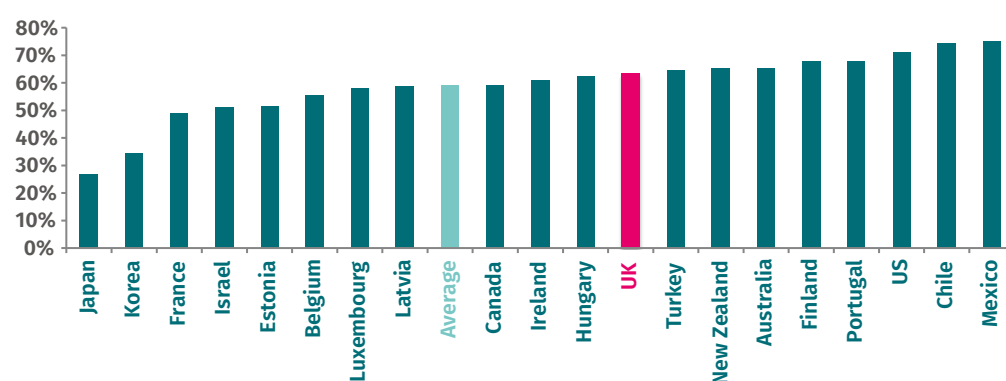
It is reasonable that a population living in better health would be more resilient to a disease outbreak – as was the case with Covid-19, but would almost certainly also be the case for any other disease outbreak. They would also be more likely to be able to deal with disruptions to any on-going care delivery.

However, people in the UK are subject to greater risk of ill-health than the international average. They drink more and are more likely to be overweight or obese.¹⁸ The UK's performance tends to be particularly poor when compared with countries in western Europe.

These trends are worrying, as each is a risk factor for long-term conditions. Moreover, the UK population is spending an ever-larger number of years in poor health.

FIGURE 4.1: THE UK POPULATION IS MORE LIKELY TO BE OVERWEIGHT OR OBESE

Percentage of adults with excess weight according to latest OECD data

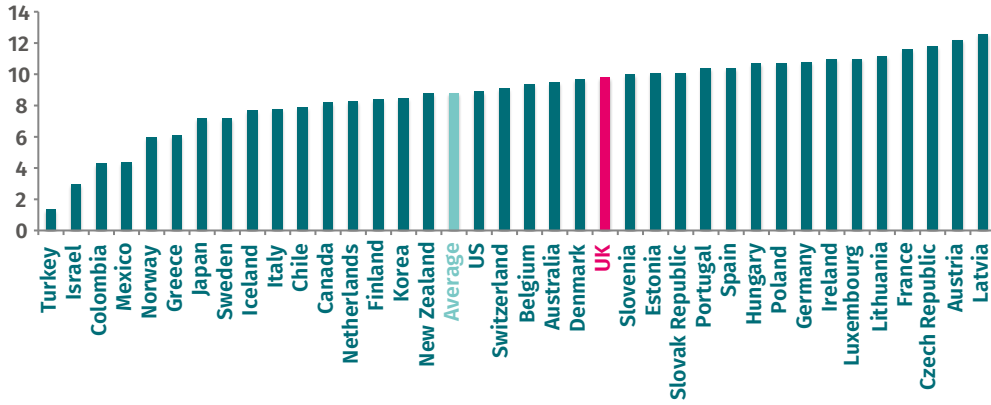


Source: Author's analysis of OECD 2020f

¹⁸ Through significant progress on tobacco control, led by policy interventions like plain packaging and a ban on indoor smoking, smoking rates are now around average.

FIGURE 4.2: UK ALCOHOL CONSUMPTION IS HIGHER THAN AVERAGE

Litres of alcohol consumed annually per capita according to latest OECD data



Source: Author’s analysis of OECD 2020f

FIGURE 4.3: UK SMOKING RATES ARE SLIGHTLY BELOW AVERAGE

Percentage of adults who smoke according to latest OECD data



Source: Author’s analysis of OECD 2020f

This suggests there is significant progress to be made on ensuring our population is as healthy as possible – and that the number who find themselves clinically vulnerable to an infectious disease, or disruptions in care, are as low as possible.

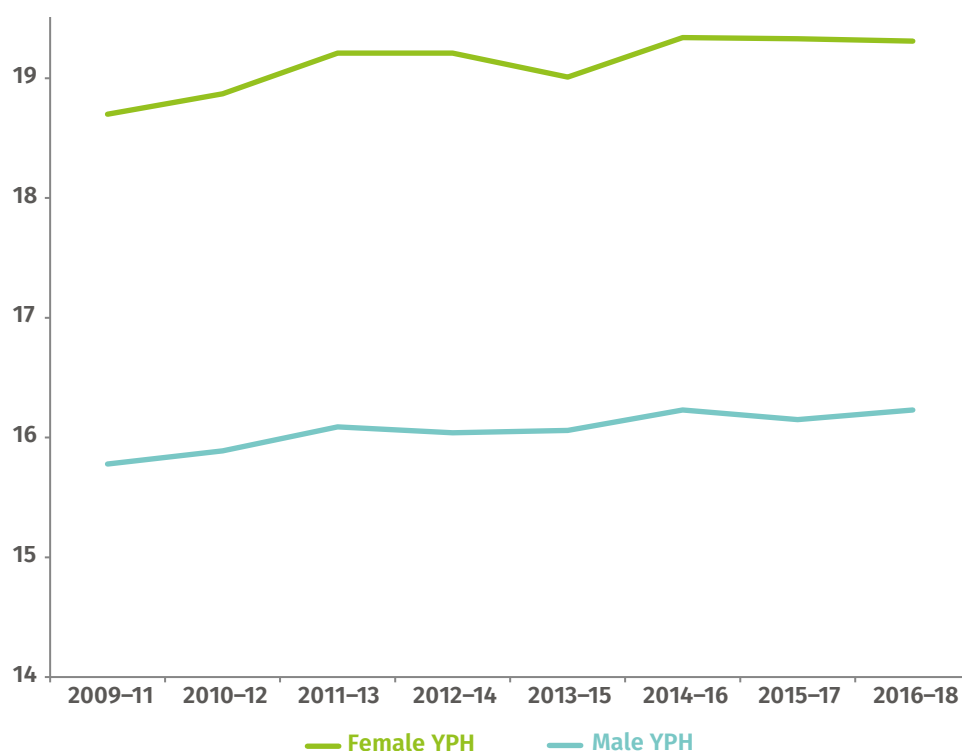
Outside of primary prevention, there is also evidence of UK performance lagging international standards in secondary and tertiary prevention. For example, on cancer, the International Cancer Benchmarking Programme (ICBP) has shown that, of analysed countries:

- people in the UK were most likely to report barriers to seeing a doctor, when they had potentially serious symptoms
- UK primary care practitioners had the lowest 'readiness' to investigate or refer potential cancer symptoms
- UK health practitioners had the least access to diagnostics (Cancer Research UK 2016).

As the NHS Long-Term Plan highlighted, addressing underlying health conditions relies on better outcomes across these areas.

FIGURE 4.4: TOTAL TIME SPENT IN 'POOR' HEALTH IS GROWING

Years spent in poor health (YPH), average for England, 2009–2018



Source: Author's analysis of ONS 2019

HEALTH INJUSTICE

It would be remiss to talk about population health, and not health injustice. One of the most shocking features of Covid-19 was how disproportionately it impacted more vulnerable people and communities. For example, deaths among black males were almost four times higher than expected, and among Asian males almost three times higher. Among white males, the death rate has been two times higher. In the most deprived decile, the Covid-19 death rate was 2.2 times that of the least deprived decile among males and females (PHE 2020).

This is a clear health injustice. However, it is not an injustice unique to Covid-19. Rather, it was representative of how good health outcomes are distributed in our system. While official data is poor, a 2015 study showed that:

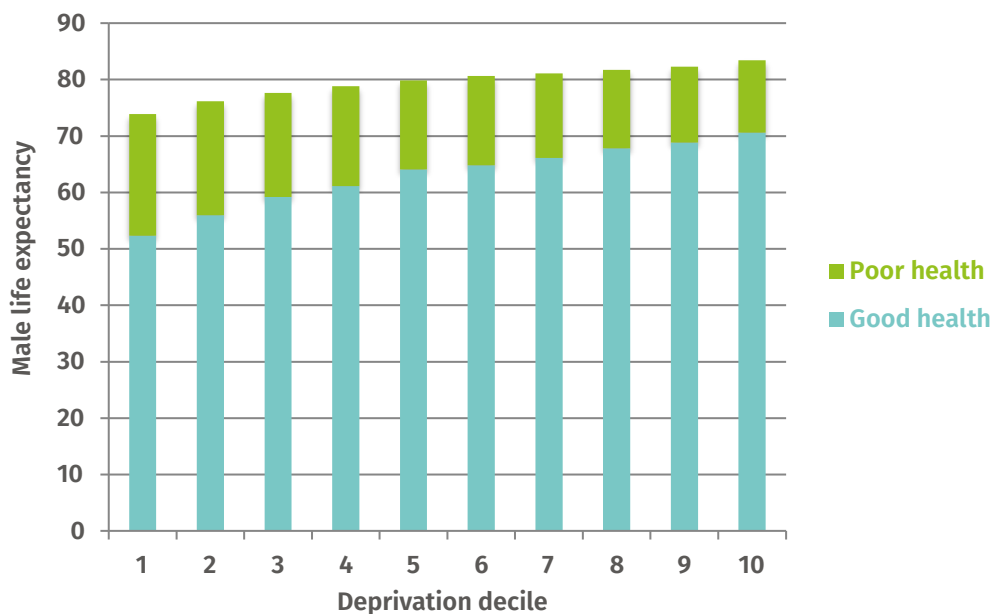
- Bangladeshi and Pakistani males could expect 7.5 and six years less disability-free life expectancy than white British males from birth (Wohland et al 2015)
- black females could expect to live between 0.9 and 4 years less disability-free years than white females from birth.

The greatest variation was a 11.9-year gap in disability-free life expectancy between Chinese and Pakistani women. Chinese people, of both genders, could expect the greatest longevity, followed by white people (ibid).

Inequality further runs across economic status. Both men and women in the most deprived decile (decile 1, figures 4.5 and 4.6) have lower life expectancies, and live longer periods of their life in poor health.

FIGURE 4.5: MEN FROM THE MOST DEPRIVED PARTS OF ENGLAND LIVE SHORTER LIVES, AND A HIGHER PROPORTION OF THOSE LIVES IN POOR HEALTH

Male life expectancy, in years lived in good and in poor health, by deprivation decile

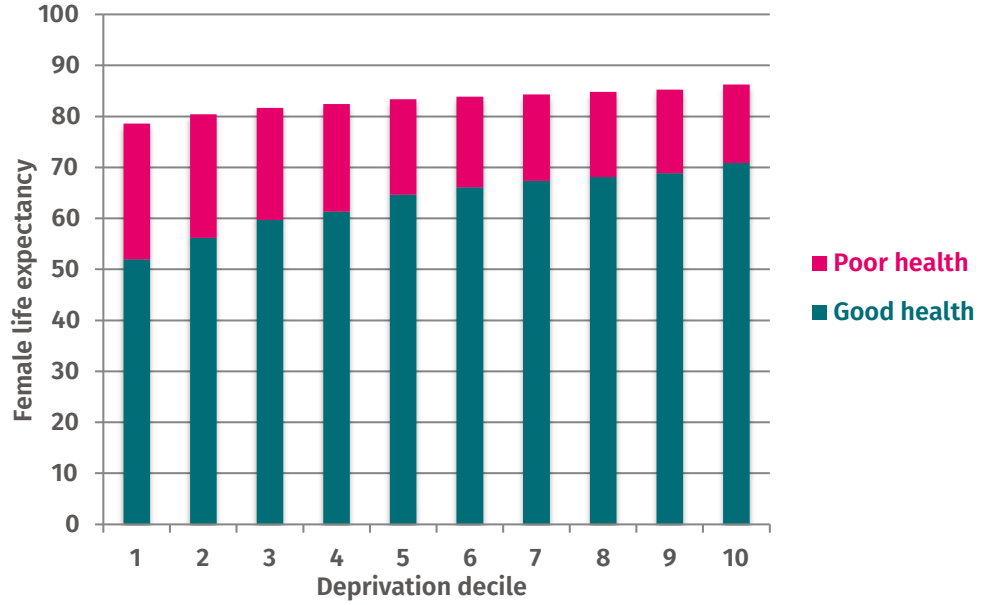


Source: Recreated from ONS 2020b

Health inequalities originate, most often, with poverty. It is therefore concerning that 4.2 million children in the UK, live in poverty (CPAG 2020), and Covid-19 is likely to accentuate that, as IPPR analysis has recently shown (Parkes and McNeil 2020). Without action, such high levels of childhood poverty could sustain continued health inequality long into the future. Indeed, the impact of poverty amongst today’s children would impact health outcomes in this country into the 22nd century.

FIGURE 4.6: WOMEN FROM THE MOST DEPRIVED PARTS OF ENGLAND LIVE SHORTER LIVES, AND A HIGHER PROPORTION OF THOSE LIVES IN POOR HEALTH

Female life expectancy, in years lived in good and in poor health, by deprivation decile



Source: Recreated from ONS 2020b

THEME 3 SCORECARDS

POPULATION HEALTH: SCORECARD

Indicator	Current	Comparator
Smokers (%)	16.6	18 OECD average
Adults with excess weight (%)	63.3	59.02 OECD average
Litres of alcohol consumer per capita	9.8	8.8 OECD average
Years lived in poor health (female)	16 (male) to 19 (female) years	Reducing this to 10–15 years by 2035 would represent a reasonable target.

Assessment: Population health is relatively poor in the UK. This undermines resilience – the healthier a population when a new health threat emerges, the smaller the size of the vulnerable population is likely to be. Recent policy has not been conducive to strong population health – including significant cuts to the public health grant.

Source: Author’s analysis of OECD 2020f; ONS 2019

HEALTH INJUSTICE: SCORECARD

Indicator	Current	Comparator
BAME life expectancy gap	Variation of up to 11.9 years lower disability-free life expectancy	Inequality is not inevitable, and no inequality should be the target.
Deprivation life expectancy gap	10 years (females) and 9 years (males)	Inequality is not inevitable, and no inequality should be the target.
Assessment: There are acute and systematic health inequalities in the UK. This leaves some groups, people, and communities at significantly higher risk when a crisis occurs, which is avoidable and unacceptable. Moreover, inequality data is often poor, which needs urgent rectification.		

Source: Author's analysis of 2020b

5.

POLICY IMPLICATIONS: HEALTH AND CARE RESILIENCE RULES

The implication of this analysis is clear. The most efficient, productive and cost-effective system is one where long-term thinking is central, and where resources are available to implement it. This is important given the current economic context. Government might be tempted to repeat the austerity experiment of the last 10 years. The analysis given in this report suggests that would be a mistake. Instead, we should look to build back better in health and care.

Economic policy could be instructive on the best route to take. There, fiscal rules look to embed more long-term thinking in policy. After Covid-19, there is a strong case to do the same in health and care policy, and truly consider health care spending as an investment in better quality and outcomes, rather than a cost to be controlled. Based on our analysis (**see annex 1 for a full summary of our scorecard**), we recommend that the government commit to the following.

On capacity

- 7. Capacity rule:** The UK lacked capacity at the beginning of the Covid-19 outbreak, and had to withdraw services from huge cohorts of people. This follows a decade of bed closures across the acute sector, without corresponding investment in community or social care services. Government should allocate catch-up funding in the community and social care sector, to build their capacity as primary sources of care. In the community sector, legislation should link catch-up funding to acute sector closures. In the first instance, it should receive a funding uplift equal to the historic savings from the 8,800 bed closed between 2010 and 2020 (£4.5 billion) – plus a rebate equal to the annual ‘savings’ still being made from those bed closures (£650 million per year). This would equal £8 billion between now and the end of the parliament – or £2 billion extra community sector funding per year. Any further bed closures should raise this sum proportionately higher.
- 8. Staffing rule:** Covid-19 proved that workforce capacity is critical not only for our own safety, but also for the mental health and wellbeing of healthcare staff. The UK has one of the smallest health and care workforces in the world – particularly given the size of our health system and our overall economy. Modern health and care is also changing what is expected from its professionals – stressing adaptability, teamwork, problem solving, generalist knowledge, and ability to work with technology and innovation. To adapt to this after the pandemic, the government must expand the People Plan process – by allocating funding, including social care, and extending the time horizon covered to ten years. Beside that, government should commit to recruiting at least an additional 250,000 people into the NHS and 400,000 people into social care by 2030. To support that, legislation should be introduced that guarantees health and care workers an immigration fast track until that target is met – defined as skilled worker status and exemption from Visa fees and the NHS surcharge. This recruitment drive should be supported by a £3.5 billion training budget over this parliament.

On resourcing

9. **Modernisation rule:** While Covid-19 has proved to be a catalyst for some remarkable transformation, such as the shift to digital in primary care, the UK had a standing start. Compared to other countries, our use of the best digital tools, medical technologies, machinery, and medicines is far behind. Government should aim to meet international standards of adoption and spread of technology and for NICE-approved medicines.
10. **Sustainable funding rule:** Inevitably, capacity, innovation, and workforce are all related to funding. While the UK spends more than the OECD average on healthcare, it spends less than the G7 group of advanced economies. Moreover, it spends much less on some parts of healthcare – such as infrastructure, treatments, and technology (Thomas 2019b). Government should ensure that the NHS has sufficient revenue and capital. Overall, this should mean a commitment to increase the NHS budget to at least £183 billion by 2029/30 (Darzi et al 2018). On capital, this should mean raising the Department of Health and Social Care capital budget to £13.3 billion by 2024/5 – to meet the OECD average (Thomas 2019b). Government should also ensure a sustainable funding deal for social care, delivered through general taxation (Quilter-Pinner 2019).

On public health

11. **Population health rule:** A healthier population will, almost always, be more resilient to disease outbreaks – including Covid-19. However, the UK performs poorly on preventing the causes of ill health. Government have committed to a 'long-term strategy for empowering people to live healthier lives' (Conservative Party, 2019). This strategy should be published as a white paper during 2020. It should include ambitious plans to a) progress towards halving childhood obesity and bring UK adult excess weight below the OECD average of 59 per cent b) to beat the OECD average, by reducing the average number of litres consumed by the average adult down by 1 litre per year urgently c) bring the smoking rate below 5 per cent by 2030 d) meet WHO recommendations on vaccine coverage and e) achieve international standards on diagnosis and treatment management – secondary and tertiary prevention – for conditions such as cancer.
12. **Health inequality rule:** Covid-19 exposed systematic injustice in the UK's public health system, putting some at much greater risk than others. The evidence shows that the English health inequalities strategy (1997–2010) did make progress on our stubborn levels of inequality (Barr 2017). However, with the government departing from this strategy in 2010, progress has stalled. Government should commit to restarting progress – with an overall commitment to cut inequality by at least 10 per cent by the end of the parliament. To deliver this, a new health inequality strategy should be overseen by a Cabinet Office 'Health Inequality Committee' chaired by the prime minister, in the model of the National Security Council.

APPENDIX 1

SUMMARY SCORECARD

Theme	Metric	UK Score	Comparator	Resilience level
Capacity	Acute occupancy	90 per cent	85 per cent limit for safety	Poor
	Acute workforce	8 nurses and 3 doctors per 1,000 people	OECD 75th percentile of 11 nurses and 4 doctors per 1,000 people	Poor
	Social care workforce	3 long-term care workers per 100 people over 65	OECD 75th percentile of 7 long term care workers per 100 people over 65	Poor
Resources	Overall budget	10.25 per cent of GDP spent on health	G7 average, excluding the USA, of 10.5 per cent	Below average
	Capital budget	0.32 per cent of GDP spent on health capital	OECD average of 0.41 per cent	Below average
	Technology	7 MRI, 9 CT, and 8 RT machines per 1 million people	17 MRI, 27 CT and 8 RT machines per 1 million people	Below average
	Medicines	5-years after their release, the UK had taken up only 3/4s of new, NICE approved medicines implemented in comparator countries.		Poor
Public health	Years spent in poor health	16 to 19 years	Target 10 to 15 years by 2035	Poor
	Socio-economic inequality	9 to 10 years and rising	No inequality is necessary or acceptable	Poor

Source: Author's analysis of OECD a-f; ONS 2020a-b; OLS 2019; NHS England 2019b

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