How good is the NHS?

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Key findings

- Overall, our analysis shows that the NHS performs neither as well as its supporters sometimes claim nor as badly as its critics often allege. Compared with health systems in similar countries, it has some significant strengths but also some notable weaknesses.
- Its main weakness is health care outcomes. The UK appears to perform less well than similar countries on the overall rate at which people die when successful medical care could have saved their lives.
- Although the gap has closed over the last decade for stroke and several forms of cancer, the mortality rate in the UK among people treated for some of the biggest causes of death, including cancer, heart attacks and stroke, is higher than average among comparable countries. The UK also has high rates of child mortality around birth.
- Among its strengths, the NHS does better than health systems in comparable countries at protecting people from heavy financial costs when they are ill. People in the UK are also less likely than in other countries to be put off from seeking medical help due to costs.
- Waiting times for treatment in the UK appear to be roughly in line with those of similar countries and patient experience generally compares well.
- While data is limited, the NHS seems to be relatively efficient, with low administrative costs and high use of cheaper generic medicines.
- The NHS appears to perform well in managing certain long-term illnesses, including diabetes.
- Health care spending in the UK is slightly lower than the average in comparable countries, both in terms of the proportion of national income spent on health care and in terms of spending per person.
- The UK has markedly fewer doctors and nurses than similar countries, relative to the size of its population, and fewer CT scanners and MRI machines.

Introduction

As a defining part of life, politics and society in the UK, there has long been extensive interest in measuring the successes and failures of the NHS. The Commonwealth Fund, a US charity, made headlines when it declared the UK health service to be the world's best health care system, in a ranking based on global polling of patients and staff.[1] The important data on health care standards and resources collected and published by the OECD, the organisation which brings together 35 wealthy countries, has been widely discussed and debated. Our four organisations have all looked in different ways at how the health service stacks up in terms of funding, staff and quality.

This report aims to take a broad, up-to-date view which draws on all these sources of data as well as on work and knowledge within our organisations, and discussions with experts in particular health conditions. It looks at three aspects of what we might mean by a good health care system: the speed and accessibility of care, the efficiency of the system and the outcomes delivered for patients. It also sets the scene by looking at what the health service has to work with, so that we can consider whether it is doing a good job given the circumstances. In each field we compare the NHS to its peers: health care systems in countries belonging to the same categories of high-income, industrialised countries as the UK.

These categories are the EU15, the grouping of Western European nations; the G7 group of the world's largest developed economies; and the Anglosphere which brings together the UK with its close cultural and constitutional relatives, the United States, Australia, Canada and New Zealand. We excluded city-states from this analysis, in case their commuter population distorted measures which are divided by population or GDP. This gives us 18 other countries with which to draw a comparison: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Portugal, Spain, Sweden, and the US.

While this report aims to look specifically at the NHS, in practice it is usually both necessary and desirable to cover all patients and all health care in the UK – both public and private. Many other countries have a more even mix of public and private care, so comparing the public system in the UK only with the public system of other countries would create distorting effects.

We look at how all four countries of the UK compare, taken as one. Methodologically, this is the most feasible unit of comparison: the OECD and academic studies of outcomes almost all treat the UK as a single unit. It also makes sense in the context of the characteristics of the health service. While there are important differences between the health services in Scotland, England, Wales and Northern Ireland, in an international context they are quite similar. All are based on tax funding, GP referral to specialists, mostly public sector provision of specialist care, and the shared values and heritage of the National Health Service, established across the UK in 1948.

There are several important limits to what we can know. Quality of care is difficult to measure in the first place, and the data produced by different health systems often cannot be fairly compared between them. The way information is defined and collected often changes, making comparisons over time especially hazardous. This situation is improving,

with more and more comparable data made available, often by the OECD whose work we draw on throughout this report. But sizeable gaps remain. Unfortunately, it is especially difficult to get a handle on the relative standards of care outside hospital, and mental health care, which are both increasingly recognised as being central to the future of the NHS.

Meanwhile, people's health is affected by the society, economy and culture they live in more widely – not just by health care systems. Indeed, in the UK many important tasks that relate to health, like reducing obesity, are actually given to other bodies like councils rather than the NHS itself. This means, as we will see, that we often cannot be sure whether the differences we see are due specifically to health care.

Lastly, comparing how health systems perform does not tell us the reason for these differences or whether they could be justified. Some countries will have taken an intentional choice to prioritise certain areas over others. This, coupled with the lack of data, makes producing an objective overall ranking or score impossible. The winner would depend on which factors were weighted more heavily and which had available data.

1 What does the NHS have to work with?

We will start by looking at how well resourced the NHS is compared with its peers, in terms of money, staff and equipment, drawing mostly on the comparable data compiled by the OECD.

This is not a measure of how good the service is. From the point of view of efficiency, the fewer the resources used to produce successful outcomes, the better. But we must know what the NHS has to work with before we can look into whether it is using it well.

The answer appears to be that, compared with health services in the other 18 countries as listed in the introduction, the NHS is relatively poorly resourced – especially in terms of staff and physical equipment, but less so in terms of funding. The table below summarises this.

	Relative resources
Share of GDP spent on health care	Similar
Expenditure on health care per person	Lower
Doctors	Fewer
Nurses	Fewer
Imaging machines	Fewer

Another important point to consider is the background health of the UK's population. This is largely shaped by factors beyond health care, so it is a way of looking at whether the NHS has a relatively easy or difficult task. Again, we are able to draw on OECD data to look at a range of indicators. The picture here is complicated.

	Relative health status
Life expectancy	Poor
Obesity	Poor
Smoking	Good
Long-term illness	Similar
Diabetes	Good
High blood pressure	Good
Alcohol consumption	Similar

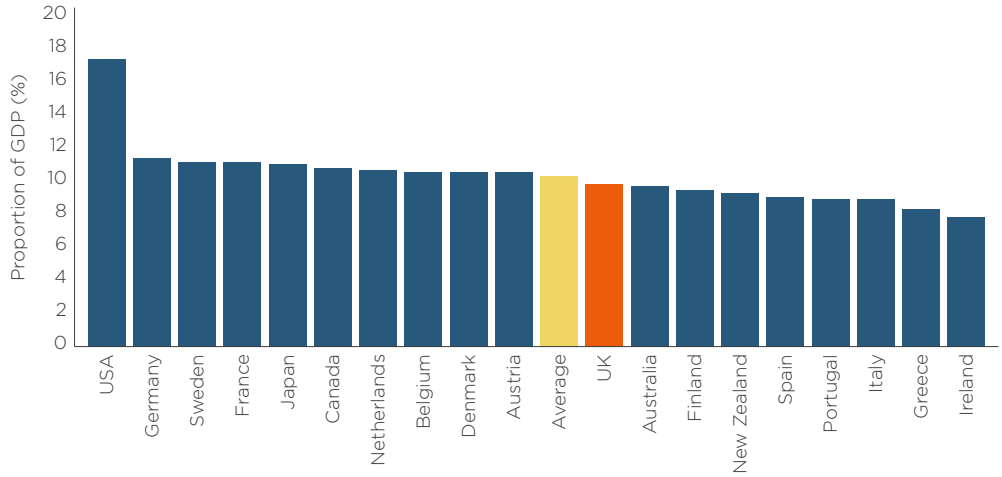
Funding

Figures compiled by the OECD show that the UK spent around 9.7% of the total value produced in its economy (our 'gross domestic product', or GDP) on health care in 2016. The UK's expenditure is just below an average of 10.2% for our comparison group. As shown in Figure 1 below, UK expenditure is well below France and Germany, with 11.0% and 11.3% respectively, but above Ireland (7.8%) and several southern European countries like Spain (9%).

The United States spends much more than any other country in the group (17.2%). Excluding the US brings the average down to 9.8%, so that the UK remains below average, but only very slightly.[2]

Reflecting the NHS's principles of being funded from taxation and free at the point of use, health care spending from taxation and compulsory insurance is slightly above average in the UK, at 7.7% of GDP compared with an average of 7.5%. But spending from charging patients and from private insurance is below average, at 2%, compared with 2.7% across the comparison countries.[3]

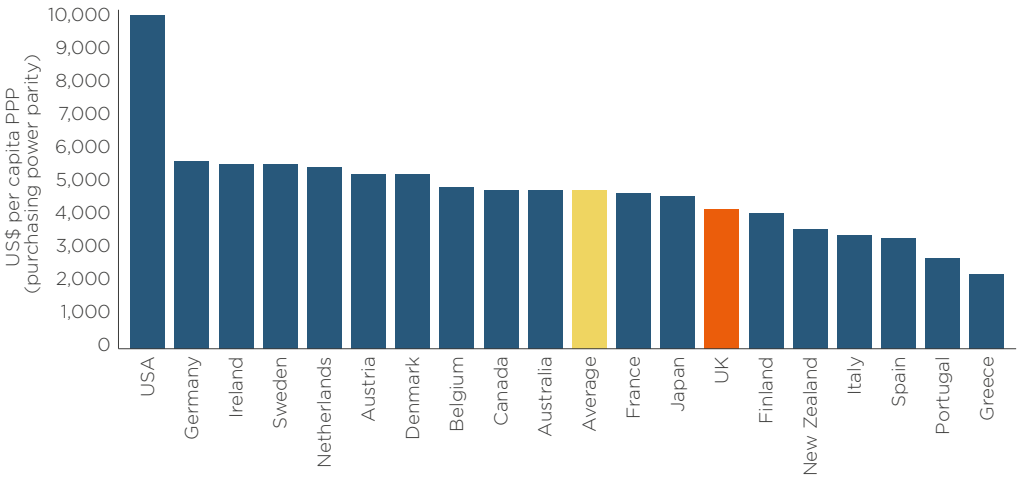
Figure 1: Health care spending as a proportion of GDP (2016)



Source: OECD 'Health expenditure and financing' dataset.[6]

The rules for what counts as health care spending for international comparisons were changed in 2011. For example, capital investment on buildings and IT is now excluded, but spending on some long-term care services (known in the UK as social care) is included. This new system caused the UK's apparent expenditure to jump upwards: previously it had looked as though it was further below the average.[4] Looking at the longer-term picture since 2000 is difficult because of this break in the data, but it appears as though the UK has certainly never been a high spender.

Figure 2: Health care spending per person, adjusted for living costs (2016)



Source: OECD 'Health expenditure and financing' dataset.[6]

When we look at the total amount spent per person, adjusted for the cost of living in different countries, the UK seems slightly further below average, as shown in Figure 2.

In US dollars adjusted for living standards, it spent $4,193 (£3,148) per person, compared with an average of $4,690 (£3,521) per person,[5] a gap of about 10%. Again, the high spending of the United States has an important effect here: leaving it out, the gap shrinks to about 5%.[6]

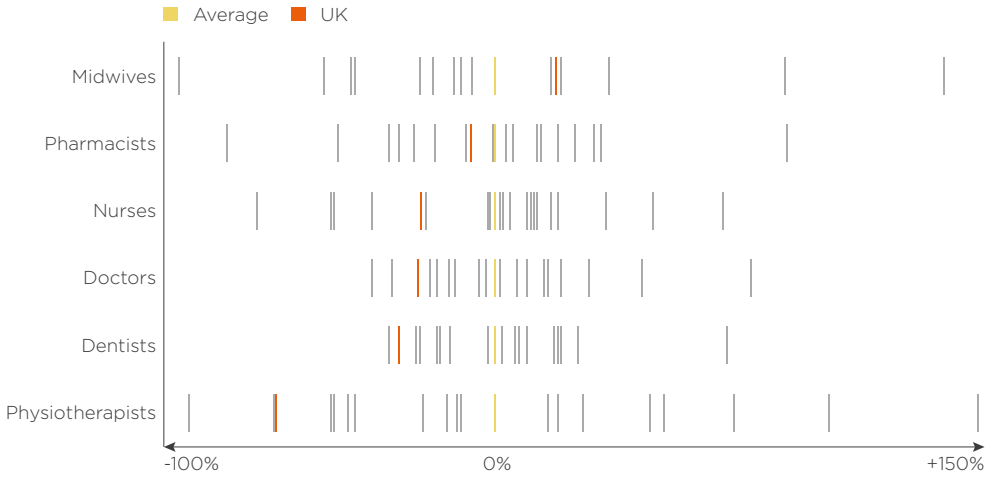
Breaking spending down into its components, it is notable that in the latest data, for 2015, the UK spends less on capital investment for health care than any of the comparison countries. This measure reflects spending on long-term assets like imaging machines and buildings.[7] Much of this, as noted above, is no longer counted in total spending. The UK caught up with the average of the other countries' spending on capital between 2007 and 2009, but has now fallen back to previous lower levels of investment. Compatible with this, figures for England show a sharply rising backlog of maintenance work which is not being done.[8]

It should be noted that responsibility for health care funding is devolved to each of the four countries of the UK and varies between them – although the difference is relatively slight. Looking at 2016/17 spending on a per-person basis, England had the lowest expenditure (£2,169) and Scotland the highest (£2,332).[9] These figures are much lower than those used for international comparison, as they leave out social care and private spending.

Staff

Staff are the backbone of a skilled service industry like health care, and spending on staff is the single biggest cost for the NHS.[10] As Figure 3 shows, compared with the other countries in our group the UK has a lower than average number of staff for all professional groups except midwives.[11]

Figure 3: Health care professionals per 1,000 people (2016 or latest year)



Source: OECD 'Health care resources' dataset.[11]

The UK has 2.8 doctors per 1,000 population compared with an average of 3.6. Put differently, in the UK there is one doctor for every 356 people, compared with one for every 277 people on average.

The data shows that the majority of UK doctors, 3 in 4, are categorised as 'specialist', with just 1 in 4 described as general medical practitioners – for example GPs. This suggests we are more tilted towards specialism than the average for our comparator group.

The UK is above average for the percentage of its doctors and nurses from overseas, with 28.1% of doctors and 15.2% of nurses trained outside the UK. It is notable that the countries with the highest percentage of foreign-trained doctors and nurses are generally those with English as a first language (New Zealand, Australia and the UK).

These figures seem to throw up a paradox: given that staff account for most health spending, how can we have fewer of nearly all types of staff when we are spending an almost-average amount?

One possibility would be that we simply pay them more, but it is not clear that this is the case. Remuneration comparisons are available for specialist doctors and hospital nurses. At first glance, UK specialist doctors do indeed appear to be paid well above the average for the group ($165,886 versus $132,853). However, the UK data for specialist doctors includes additional pay elements like bonuses and overtime, which are not counted by some other countries. Meanwhile, pay for hospital nurses in the UK is actually below average ($50,470 versus $53,689).

Another possibility may be that we are employing more health care workers who are not captured in this data. We know that many NHS staff, including those delivering vital patient care, would not be counted in these professional groups because they do not have specific qualifications. Figures for the European Union show we have significantly more health care assistants and home-based personal care workers than average – groups which would capture many of these workers.[12] However, we cannot be sure how many of these people worked in the NHS or health care of any sort, as opposed to social care.

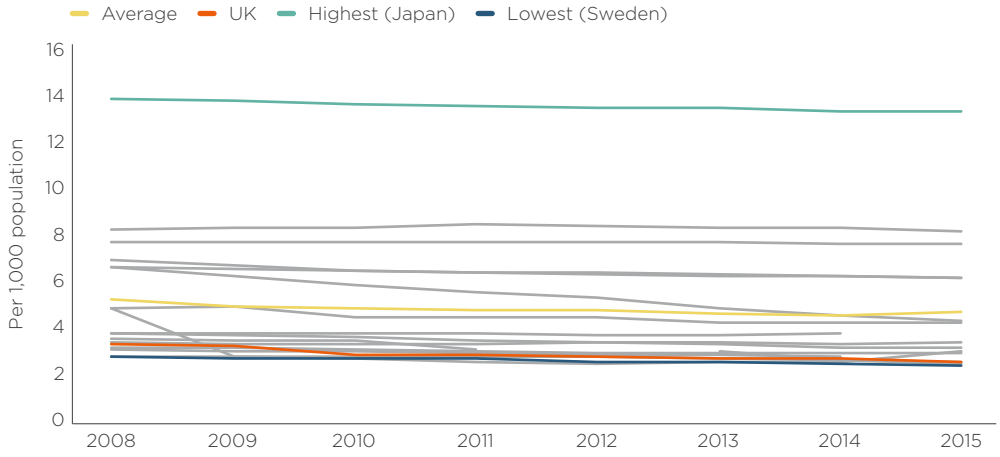
Physical resources

While staff are important, a health service also needs physical resources to deliver care: beds, hospitals and medical equipment of every description. The data here misses out many important resources, especially those used outside hospitals, but for what we can measure the NHS tends to have less than other systems.

Compared with the group, the UK has a very low number of hospital beds: 2.6 per 1,000 population, compared with an unweighted average of 4.5 across the other countries, as shown in Figure 4. Japan has the most with 13 beds per 1,000, which may be an anomaly due to having many small hospitals for historical reasons.[13] Every country except Sweden and Denmark had more beds per person than the UK in 2015.

In part, this reflects a conscious policy across many countries to make health care more efficient by prioritising short lengths of stay and more care outside hospital. This decision has led to a significant reduction in the number of hospital beds, in England more than halving over the last 30 years. There has recently been a debate as to whether this trend is reaching its limits. The proportion of beds occupied has risen across the UK,[14, 15] making it more difficult to admit patients in a timely fashion. Simon Stevens, Chief Executive of NHS England, announced last year that any further bed reductions must meet a new test to ensure quality of care is not affected.[16, 17]

Figure 4: Hospital beds (2006–2016)



Source: OECD 'Health care resources' dataset.[17]

The UK has 46.5 beds in residential long-term care facilities per 1,000 population aged 65 and over, which is just below the average for the group of 48.1. However, there is significant variation: the Netherlands is at the top with 73.9, compared with Italy with just 18.5 at the bottom. This range may in part reflect variation in models of care as the number excludes both care beds in hospitals and those as an adaptation in someone's home.

Limited comparison data is available for medical technology, but the data we do have on the number of MRI and CT scanners shows that within the comparator group the UK has the lowest number of both types of machine. It has 7.2 MRI units per million population compared with an average of 19.6, and 9.5 CT scanners compared with an average of 30.7.

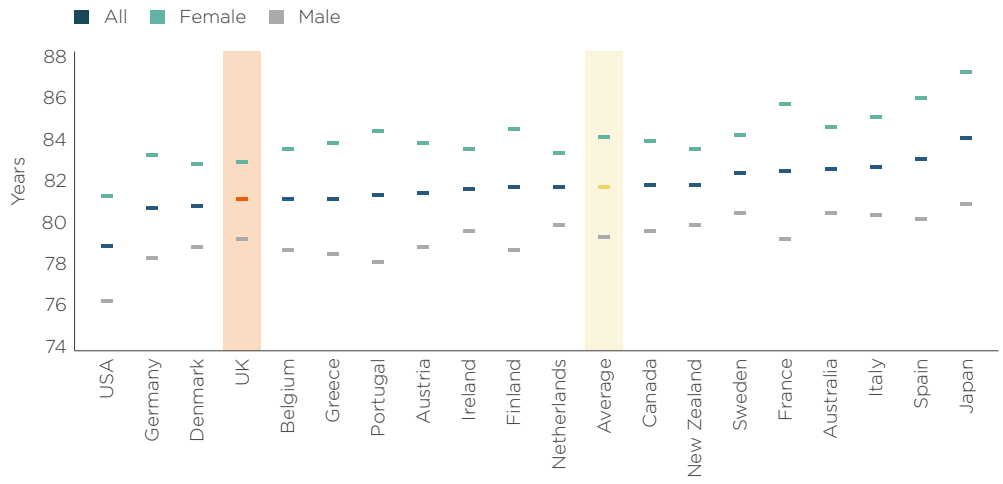
The UK data does not include scanners in the private sector, which accounts for a fifth of our health care spending, so these exact figures should be used with caution.

The health of the population

The broadest measure of population health is average life expectancy. For all countries in our group, women can expect to live longer than men, with a difference between the averages of 4.7 years. The UK has one of the lowest female life expectancies at 82.8 compared with an average of 83.9. However, its male life expectancy is average at 79.2 years. This leaves the UK with a smaller gap than average, at 3.6 years, and overall a relatively short life expectancy.[18]

The World Health Organization also measures 'healthy life expectancy'. This is worked out by adjusting down the total number of years for which a person might be expected to live by counting years spent in only partial health as only part of a year.[19] The UK is somewhat below average, with a healthy life expectancy of 71.9 years compared with an average of 72.3. This puts us well above the United States, where people can expect the equivalent of just 68.5 years in good health, but well below Japan where people can expect the equivalent of 74.8 years in good health.[20]

Figure 5: Male, female and total life expectancy at birth (2015 or nearest year)

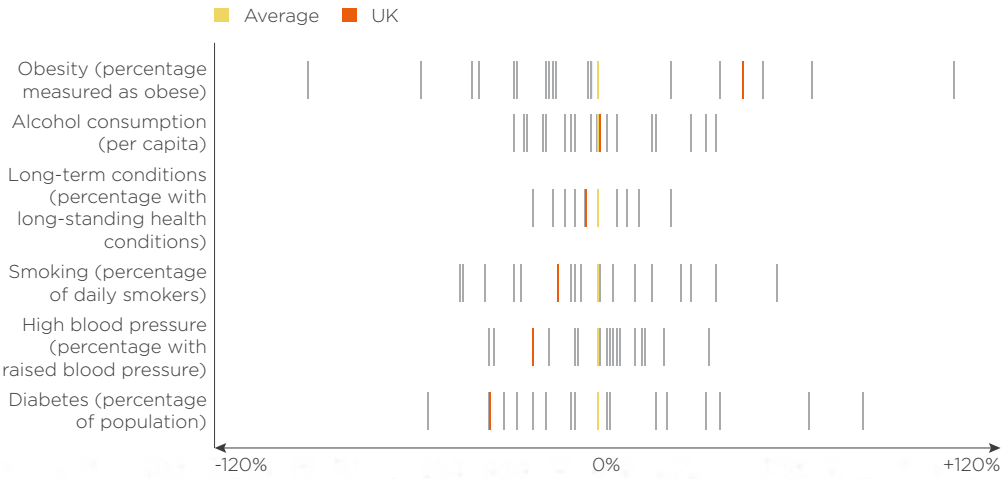


Source: OECD 'Demographic references' dataset.[18]

The OECD collects another broad measure of healthiness: the 'perceived health status' that people report when asked in surveys. The percentage of people in the UK rating their health as 'good' or 'very good' is about average, though it has declined over the last five years. Countries with a high perceived health status do not necessarily have a high life expectancy; for example Japan has the highest life expectancy but the lowest perceived good health, whereas Ireland is about average for life expectancy but has high perceived good health.

Life expectancy and self-reported health are affected by economic, social and lifestyle factors. But they will also reflect the success or failure of health care itself in keeping people well – so they are not simply a measure of what the NHS has to work with.[21] For a fuller idea, we can also look at specific behaviours and conditions in the UK population which will affect the illnesses presented to the NHS in the first place compared with its peers. The UK's relative position in these is shown in Figure 6 below.

Figure 6: Health risk factors (2016 or latest year)



Source: OECD 'Non-medical determinants of health' dataset.[23] Note that UK data for long-term conditions does not include Northern Ireland.

Obesity is an increasing concern in the UK[22] and this is reflected in the data, with 26.9% of the population measured as obese, the fourth-highest for the group. One explanation may be that the UK actually measures people in order to submit its data on obesity rates. Some other countries simply rely on what people say and, perhaps unsurprisingly, their obesity rates tend to appear lower. However, even compared only to other countries which measure obesity directly, the UK has a higher rate than average.

In contrast, when looking at other factors which influence the health of the population, the UK has one of the lowest rates for prevalence of diabetes and high blood pressure, and is around average for alcohol consumption, smoking and the number of people with long-term conditions.[23]

2 How efficient is the NHS?

The efficiency or inefficiency of the NHS is a perennial subject of public discussion in the UK. Studies and accounts data suggest it has been making significant productivity savings in recent years, outpacing the rest of the economy until recently.[24, 25] Yet much of the public believes that waste remains widespread.[26] So how well is the NHS using its resources compared with its peers?

We do not have enough data, on either inputs or outputs, to do a full calculation for the efficiency of the NHS compared with the other 18 countries in our comparison basket. But there are particular things we can look at that give a sense of whether the health service is using particular resources well, compared with at least some of the comparison countries.

On these measures the NHS is average-to-good in terms of efficiency, as summarised in the table below.

	Relative efficiency
Administrative costs	Good
Antibiotics	Good
Generics	Good
Length of stay	Similar

Administrative costs

Although spending on administration is necessary and not intrinsically bad in managing a complicated organisation like the NHS, unusually high administrative costs might suggest the health service could and should be more efficient.

The OECD has compiled data on administrative costs of different health care systems at the 'macro' level – which captures the amount spent on planning, funding and monitoring care, but not administrative costs within individual hospitals.

They found that the NHS spends relatively little on overseeing and planning care, relative to other comparable systems. In 2014, the UK, Portugal and Ireland all devoted 1.5% or less of their government or compulsory health care expenditure to administration. This compares with an average of 3.1%, with 4.1% in France, and 7.9% in the United States.[27]

Prescribing

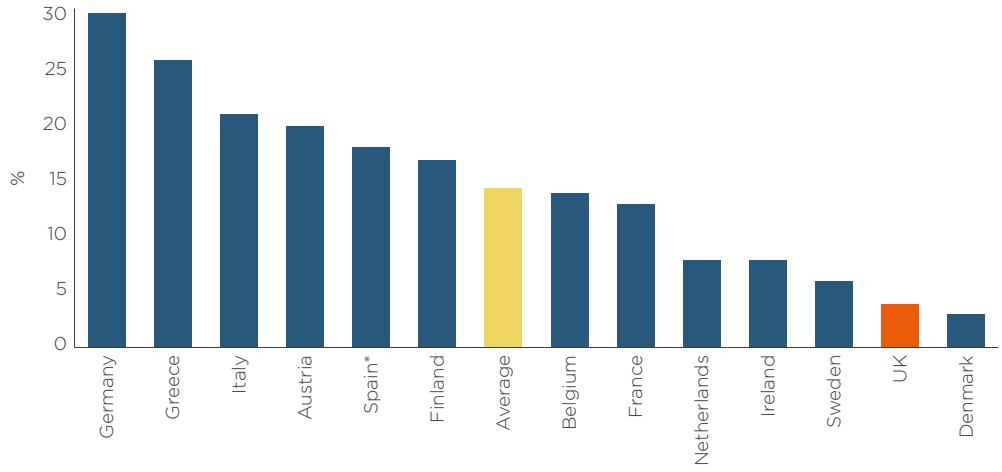
Medicines are an important element of health care that can be relatively easy to track, and how different systems use them can give us a window into their efficiency.

Antibiotics – medicines which kill bacteria – are a pillar of modern health care, but using them too much leads to diseases evolving resistance, which makes the problem bigger and more expensive in the long term. We can see how well the NHS is doing at keeping overuse down and controlling resistant bacteria by looking at the overall rate at which antibiotics are prescribed, and by looking at the rate at which 'second-line' antibiotics, used when diseases become resistant, have to be pulled into service.

In 2016, the total level of antibiotic prescribing in the community in the UK was around the average of the EU15 countries in our comparison basket.[28] However,

as shown in Figure 7, the UK has the second-lowest rate of use of second-line antibiotics (quinolones and cephalosporins) (4% in 2014).[29] This contrasts with Germany, which has very high rates of second-line use (30%).[30]

Figure 7: Second-line antibiotics as proportion of all antibiotics prescribed in primary care (2014)



* Reimbursement data, i.e. not including consumption without a prescription and other non-reimbursed courses
Refers to quinolones and cephalosporins. Source: OECD (2016) *Health at a Glance: Europe 2016*, Figure 2.6.[30]

In the hospital sector, EU data shows that the UK has relatively high rates of antibiotic prescribing, but the share of second-line or third-line antibiotics (carbapenems and polymyxins) relative to all prescriptions of antibiotics is low.[31]

The OECD has also looked at the actual levels of antibiotic resistance in different countries, combining the rates of six of the most concerning types of resistant bacteria including MRSA and drug-resistant E.coli. The UK has a relatively low level of antibiotic resistance on this measure. The OECD also notes that the UK is one of the few countries where antibiotic resistance has fallen in recent years, perhaps as a result of the drive to reduce MRSA.[32]

Another important form of efficiency in prescribing is using generic drugs where possible – drugs that are identical to brand-name products, but usually cheaper. The UK has the largest share of generic prescribing of all our comparator countries, at 84% in 2015 compared with an average of 50%.[33]

Length of stay

Assuming that outcomes are satisfactory, a shorter stay in hospital means a more efficient use of staff time and bed space, and reducing length of stay is one of the main ways to improve hospital efficiency.[34]

The average hospital length of stay in the UK across all conditions is around average among comparable countries (6.9 days in 2014, relative to 7.2 days in comparator countries).[35]

However, this masks considerable variation in relative length of stay across different procedures. Length of stay for people with heart attacks is approximately average

(7 days in the UK, compared with 6.7 days across all comparable countries). But the UK has among the shortest average length of stay for childbirth (1.5 days, compared with an average of 2.7 days), and the longest average length of stay for fractured femur (20 days in the UK relative to an average of 13.3 days across comparable countries). This contrasts with Germany, where length of stay is above average for all three conditions, or Australia, which has shorter than average length of stay for all three conditions.

The fact that the NHS has average lengths of stay but fewer hospital beds than average would seem to imply that the health service simply moves fewer people through hospital than many of its counterparts. OECD data supports this, suggesting that there were about 13 discharges from hospital for every 100 people in the UK in 2015, compared with an average of 16 in the other countries.[36]

However, another factor may be that a higher proportion of beds are occupied in the NHS than in other countries. The UK has not sent in comparative data on this for some years, but last time it did, in 2011, 84% of UK hospital beds were occupied compared with 76% in comparison countries.[37] We know that since then NHS bed occupancy rates have risen even further, especially in England where the average occupancy for all beds open overnight reached a new high of 90% in the last quarter of 2017/18.[38] This tendency to run hospitals nearer to full capacity could be seen as an efficient use of resources, but there are signs that very high bed occupancy in the NHS recently has also been linked to A&E waiting times targets being breached when there is no room to admit patients.[39] The National Audit Office has noted that hospitals with average bed occupancy above 85% can expect to experience bed shortages and increased levels of health care acquired infections.[40]

3 Is NHS care easy to access for all?

We will now move on to look at how well the NHS is delivering for patients and the public. First, we will look at how well it is doing in making health care available quickly, easily and affordably. This section draws on a range of data sources, especially comparable data compiled by the OECD and the polling carried out by The Commonwealth Fund.

This question of 'access' is widely regarded as one of the key markers of quality in health care systems. It is perhaps particularly salient for the NHS. When launched 70 years ago, the new health service was based on three principles: a comprehensive service available to all; free at the point of delivery; and based on clinical need not ability to pay.

The evidence suggests that the NHS is doing fairly well in meeting these famous commitments today. It is especially effective in protecting people against financial strain while they are ill. However, when it comes to the timeliness of the care it provides, the record is more mixed. The table below summarises the comparisons against the other 18 countries.

	Relative accessibility of care
Universal coverage	Good
Vaccination coverage	Good
Costs putting people off treatment	Good
Protection against catastrophic costs	Good
A&E waits	Similar
Urgent hip operation waits	Similar
Planned procedure waits	Similar
Access to equal care for rich and poor	Good

Population coverage

The NHS gives the UK a system of universal health care coverage, but this is far from unique among high-income countries. Many other countries have tax-funded systems on a similar model to the NHS, like Spain and Italy, or compulsory insurance schemes backed by the government, which are used in countries like France and Japan. In some countries, like Germany and the United States, significant proportions of the population are not covered by public insurance but have taken out private insurance instead.

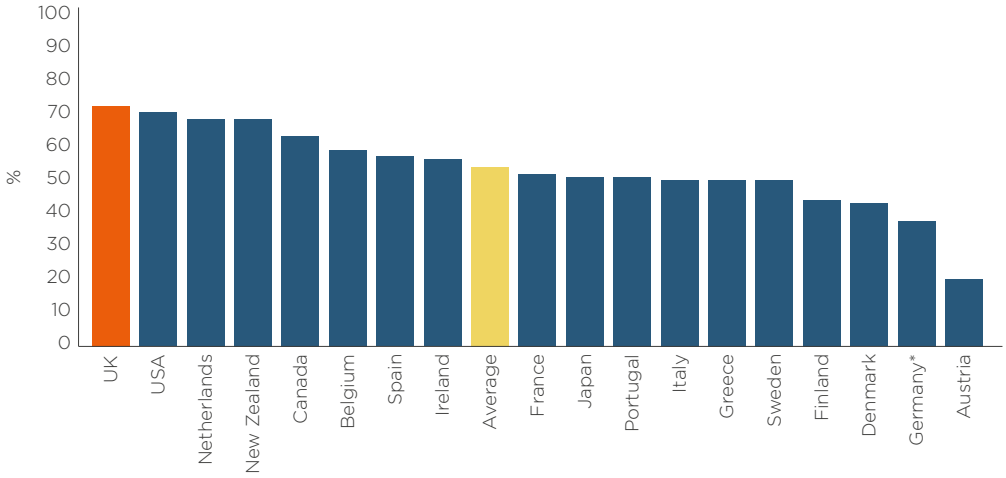
Of all our comparison countries, only the United States and Greece have a significant proportion of people who are not covered by any health care system at all – 9% of Americans, and 14% of Greeks.[41]

However, this does not necessarily mean all countries are the same in terms of the availability and coverage of care in practice. In many countries, the first point of contact with the health system is through 'primary care' – services like GPs and dentists who serve as the first port of call. Access to effective primary care services can improve population health and wellbeing, prevent avoidable illnesses (for example, through vaccination) and treat and manage common health conditions that should not require hospital treatment.

The World Health Organization sets minimum coverage targets for childhood vaccinations in order to achieve whole-population protection. Looking at how successfully different countries are achieving this is a measure of the extent to which the whole population is being reached by basic health care in practice.

Data reported by the OECD suggests the UK has improved the coverage of children under one year old who receive vaccination against diphtheria, tetanus and pertussis (DTP) and measles. By 2015, the latest year for which comparable data is available, the UK exceeded the target for DTP and met the target for measles. Most of the countries in our comparison met or exceeded the targets, but five were below the target for DTP and eight were below target for measles.[42]

Figure 8: Proportion of over 65s receiving influenza vaccine (2015 or nearest year)



* German data counts over 60s.
Source: OECD 'Health care resources' dataset.[42]

As shown in Figure 8, the UK also currently performs well on the percentage of people aged 65 years or older who receive the influenza vaccination. The OECD has reported that 71% of over 65s in the UK were vaccinated in 2015 – the highest percentage of countries in our comparison where data was available – compared with 42% in Denmark, 37% in Germany and just 20% in Austria. This may reflect a particular drive in recent years by UK authorities to provide free flu vaccinations to vulnerable groups.[43]

While the majority of the countries in our comparison have universal health coverage, what and how people pay to access health care services – and the extent to which health systems protect people from incurring catastrophic costs – varies considerably.

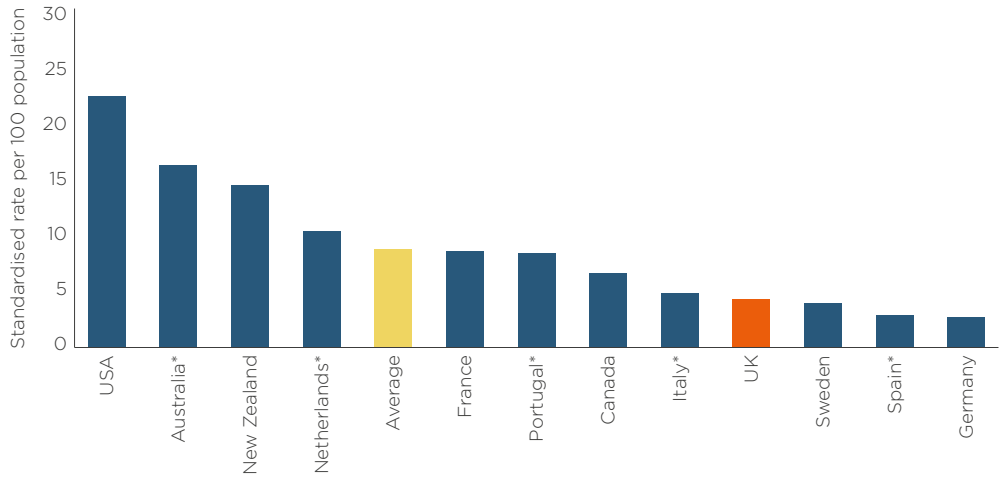
Financial risk protection

Being 'covered' does not necessarily mean that people are fully protected from the financial consequences of ill health. All countries rely to some extent on funding health care services through 'out-of-pocket' payments, where patients are required to pay a charge to access health services at the point of use. These charges, and other costs like transport, may cause people to skip consultations with a health professional or fail to take a prescription medicine, having an impact on health which disproportionately affects the poorest.

Data from the OECD, based on a survey by US charity The Commonwealth Fund, shows 4.2% of people from the UK said they had skipped a consultation due to cost. As consultations are free in the UK, this would presumably mean the cost of travel or missing work. This was lower than most countries, as shown in Figure 9, although still higher than respondents in Germany (2.6%), Spain (2.8%) and Sweden (3.9%). Among the

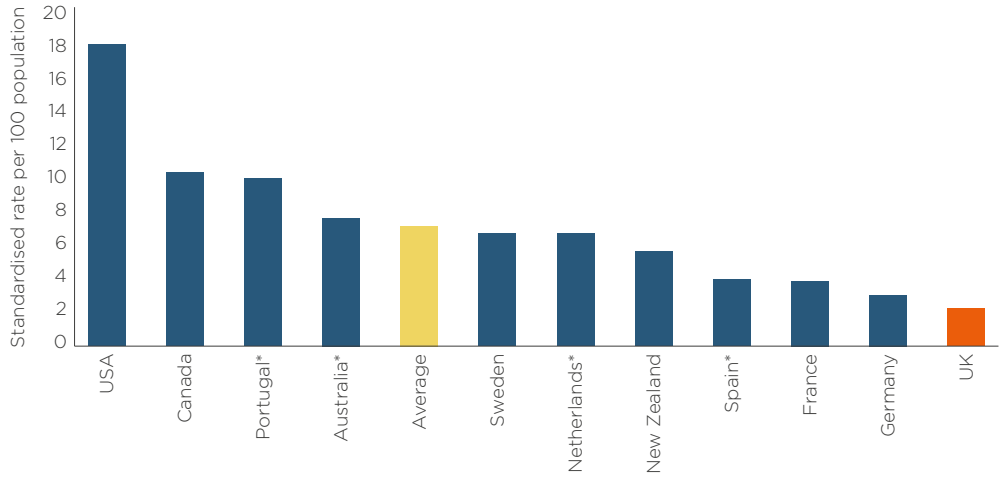
group of countries surveyed, the UK had the lowest percentage of people reporting that they had gone without a prescription medicine (2.3%), as shown in Figure 10, with the United States having the highest percentage (18.0%).[44]

Figure 9: Proportion of people who skipped a consultation due to cost (2016 or nearest year)



Source: OECD 'Health care quality indicators'.[45]
* Denotes an OECD data source other than Commonwealth Fund survey.

Figure 10: Proportion of people who skipped a prescription medicine due to cost (2016 or nearest year)



Source: OECD 'Health care quality indicators.[45]
* Denotes an OECD data source other than Commonwealth Fund survey.

The same survey also highlighted the gap between people in the lowest income group and the rest of the population. The UK had the smallest gap between low-income and all other respondents, which may suggest the NHS provides lower cost barriers to accessing health care for low-income households than the other countries surveyed.

OECD analysis suggests that, in our group of countries, out-of-pocket spending on health care varied from 1.4% of household income to 4.4%. France (1.4%) had the lowest share of

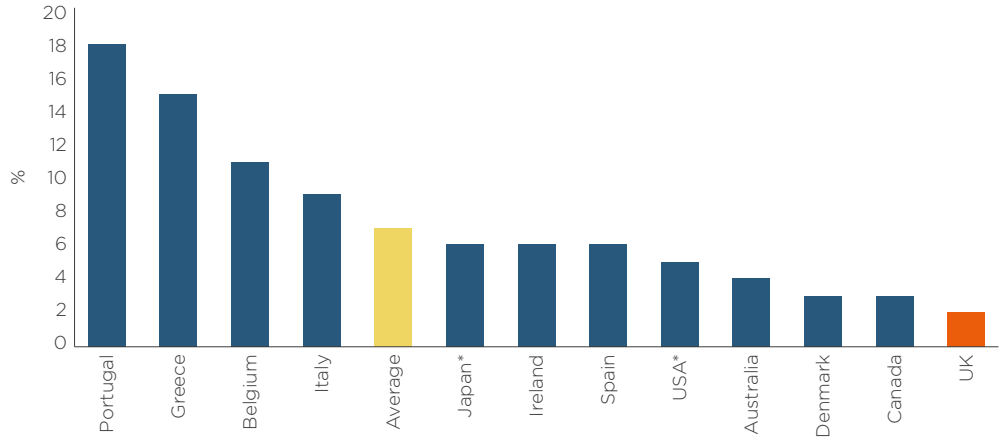
household spending on out-of-pocket payments, followed by the UK (1.5%) and Germany (1.8%). Sweden (3.3%), Spain (3.7%), Portugal (3.8%) and Greece (4.4%) have the highest shares of out-of-pocket spending.[45]

A breakdown of out-of-pocket spending by category suggests that the largest proportion went on pharmaceuticals, which in the UK accounted for a higher share of spending (42%) than in most countries. This may be due to prescription charges being one of the few areas where patients pay directly for NHS services, albeit only in England. Despite this, UK households spend a lower share of income on pharmaceuticals (0.6%) than all of the countries we compared except France and Germany (both 0.5%) and only half of the share spent in Australia, Sweden and Spain (all 1.2%).

The need to avoid catastrophic costs arising from health problems is also part of the purpose of health care coverage more generally. This purpose is more obvious in countries with insurance systems, but the NHS fills the same role.

Even though everybody is covered by insurance or state guarantee in nearly all countries, high levels of out-of-pocket payments for health care may cause households to incur catastrophic costs. These can cause financial hardship and may even push individuals and families into poverty.[46]

Figure 11: Proportion of people spending more than 10% of income in out-of-pocket health care charges (2010)



* USA data 2013; Japan data 2008.
Source: World Bank 'Out-of pocket health care expenditure' indicator.[46]

According to the World Bank, people in the UK were the least likely of all our comparison countries to spend more than a tenth of their income on the out-of-pocket costs of health problems, as shown in Figure 11. The World Bank also looked at how many people had to pay more than a quarter of their income in health care charges. Again, the UK showed the highest degree of financial protection, with only 0.5% of people paying this amount. By contrast, in Portugal, 18.4% of the population spent more than 10% and 3.3% spent more than 25%.[47]

These differences may be explained by the NHS's relatively limited use of charging. As long as they are UK residents, people in this country are never expected to pay

out of pocket for hospital care or general practice. This is very different elsewhere. For example in Portugal, which in many ways has a system similar to the NHS, there is a charge for each visit to A&E or to a GP, while in Belgium, among other countries, patients pay a fee for each night in hospital.[48, 49]

It should be noted that while the NHS may provide good financial protection, the UK's system of social care has been criticised by our organisations and by independent reviews for providing poor financial protection.[50] In England, Wales and Northern Ireland, only people who have both relatively serious needs and little money are eligible for state support for these services, which include residential care and help with everyday tasks for older people. The result is that some people do have to pay tens of thousands of pounds simply due to poor luck with their health, often having to sell their homes[51] – something which is not captured in data specific to health care.

Waiting times

While the NHS largely provides care to everybody on the spot without high costs, how quickly it does so has long been a contentious issue. The British public name waiting times as one of the top reasons for dissatisfaction with the service.[52]

Internationally comparable data on waiting times is particularly patchy. While statistics on waits are extensively collected in the UK, the same is not always the case in other countries, and those which do exist may use different definitions. However, there are enough measures to get some sense of how long NHS patients wait, relative to their counterparts for several crucial types of health care.

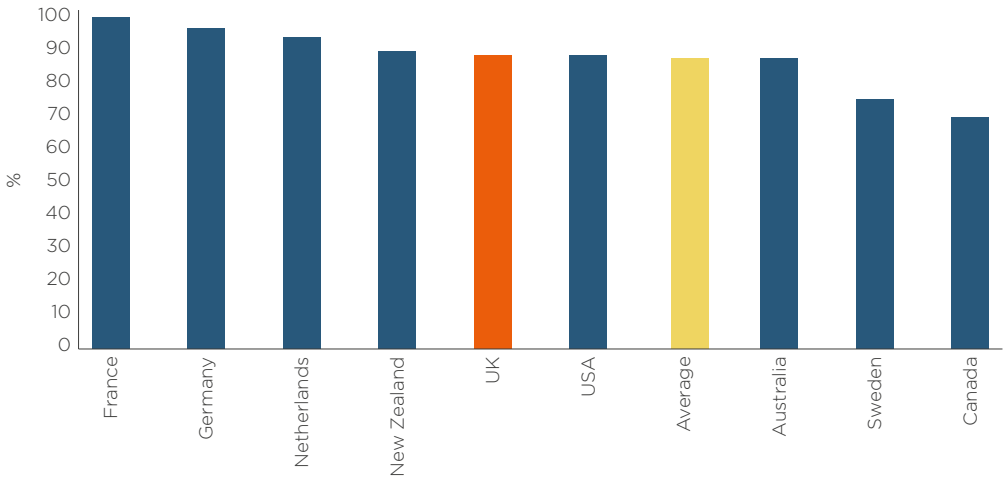
A Commonwealth Fund survey recently asked people in several countries about how long they had waited to be treated the last time they visited an A&E department. They found that 88% of people in the UK reported having been treated within four hours, a roughly average performance, as shown in Figure 12.[53]

The survey only collected data from 9 of the 19 countries in our comparison, and the sample of people in the UK surveyed was relatively small so the results may not be fully representative. However, the data for the UK is broadly in line with NHS figures on how many people are admitted or discharged from A&E within four hours – currently at around 88% in England and Scotland.[54, 55] The equivalent figures for Wales and Northern Ireland are 80% and 65% respectively.[56, 57, 58]

The Commonwealth Fund also asks people whether they have seen a doctor or nurse at all within certain periods of time – which in a UK context would typically mean through general practice, although in other countries people can go straight to hospital specialists. The results show that the UK was roughly average in the proportion of people who were able to see someone the same or the next day.[59]

For people admitted to hospital with a fractured hip, there is general agreement that there is a lower risk of complications and better outcomes if surgery is performed within 48 hours. OECD analysis of 14 of the countries in our comparison found Denmark (96%) has the highest percentage of patients treated within 48 hours of hip fracture, followed by the Netherlands (95%), Canada (93%), Sweden and the UK (both 92%). Italy (53%), Spain (48%) and Portugal (47%) had the lowest percentage of patients treated in 48 hours.[60]

Figure 12: Proportion of people seen within four hours at emergency departments (2016)



Source: Health Foundation.[58]

Waiting times for planned, non-urgent treatment delay the benefits of treatment and may leave patients in unnecessary pain and discomfort. Reducing this type of waiting is therefore an important issue in many, but not all, health systems.

The Commonwealth Fund also asked about this in its 2016 survey. Around half of people in the UK said they were treated within a month, similar to the average in other countries. However, people in the UK were somewhat more likely to say they had to wait more than four months.[61]

The OECD collects hard data on waiting times for some conditions, although only half of the countries in our comparison (10 out of 19) collect and report national data about waiting times for planned care.[62]

This analysis suggests the NHS's performance on waiting times for selected procedures – cataract surgery, hip and knee replacements – is generally around the average in relation to the other countries that report data.

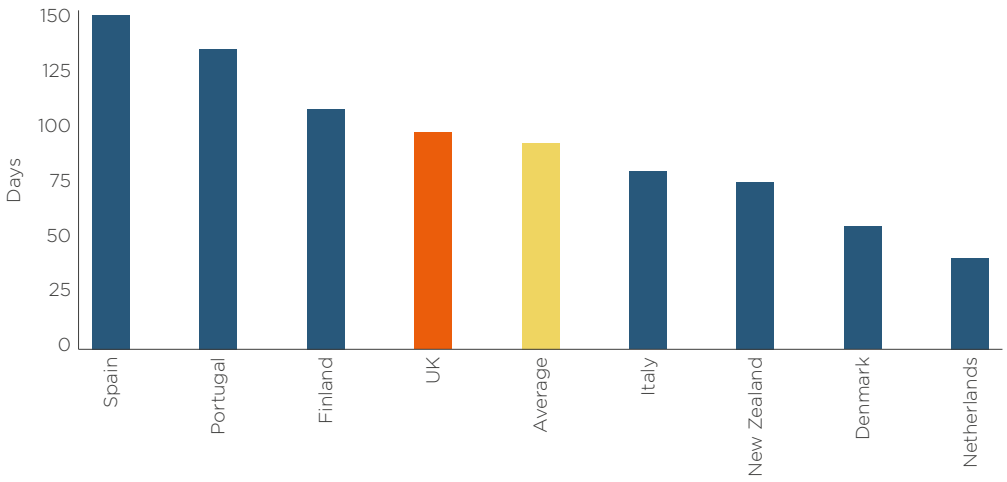
The Netherlands (37 days) and Italy (50 days) report shorter mean average waits for cataract surgery than the UK (73 days), while Finland, Portugal and Spain all report mean waiting times of just over 100 days.[63]

Figure 13 shows waiting times for hip replacements. Patients in the Netherlands have the shortest mean waiting times, at just 42 days, while those in Spain wait for 150 days. The UK is in between, reporting a mean waiting time of 97 days.

For knee replacements there is a similar picture, with the Netherlands reporting the shortest waits, again at 42 days, and the UK in the middle of the pack. Portugal reports the longest mean waiting times for knee replacement, at 208 days.

It should be noted that these statistics mostly look specifically at publicly funded health care, directly comparing the NHS against its peers.[64] All of these countries will also have some private patients, who may be treated more quickly.

Figure 13: Waiting times for hip replacements (2015)



Source: OECD 'Health care quality indicators' dataset.[63]

Equality in care

Lastly, we might ask whether the NHS is providing access to care of equal standards for everybody who needs it. Concrete data on the outcomes of patients from different socioeconomic backgrounds in the UK compared with other countries is not generally available – and in any case, the effect of NHS care would be hard to disentangle from the effect of inequalities in wider society.

However, The Commonwealth Fund has tried to measure the equality of care by asking people with above-average and below-average income about their care, and then comparing the results. In general, this gap is smaller for the UK than the eight other countries in our comparison group that they looked at, and they ranked the UK first in the category of 'equity'.[65]

Reflecting the NHS's strengths in protecting people from the financial costs of ill health, in the UK there is an unusually small gap between rich and poor in terms of difficulty paying medical bills. People in the UK with above-average income were actually more likely than their poorer counterparts to report that they had had to wait more than two months for a specialist appointment.[66]

4 How good are the NHS's outcomes?

Once people are through the door, how well does the NHS do relative to other countries in delivering successful care?

There are a number of ways to measure this, drawing on work by teams of scientists to index how different countries perform on particular measures, as well as on the many relevant indicators compiled by the OECD.

Amenable mortality indexes look to count the total number of deaths a country's health system could have prevented, but failed to. There are also many measures of quality which look at outcomes for people with particular diseases or problems. We decided to look at specific outcome measures for the 12 conditions which cause the most deaths in high-income countries, according to the World Health Organization.[67] In addition, we looked at outcomes related to childbirth. Childbirth is no longer a major cause of death in developed countries, but supporting it is a vital role for any health care system.

Lastly, we looked at measures of whether or not patients had a good experience while using services. As well as clinical outcomes, this is also widely recognised as an important aim for health systems.[68, 69]

The table below summarises how well the NHS appears to be doing, first on each of the 12 most lethal diseases, and then on the other three fields. As well as the NHS's performance in the latest year, it also looks at whether the UK has closed the gap over the last decade. This is relevant for outcome measures since most tend to improve over time as technology improves: a good health service should not just be performing well, but also getting better more quickly.

	Relative performance	Relative change over time
Breast cancer	Poor	Improving
Colorectal cancer	Poor	Improving
Lung cancer	Poor	Improving
Pancreatic cancer	Poor	Improving
Diabetes	Good	Unclear
Kidney disease*	Good	Unclear
Chronic obstructive pulmonary disease	Poor	Unclear
Lower respiratory tract infection*	Poor	Improving
Suicide*	Good	Unclear
Dementia*	Unclear	Unclear
Stroke	Poor	Improving
Heart attack	Poor	Unclear
Amenable mortality	Poor	Unclear
Patient experience	Good	Unclear
Birth	Poor	Unclear

* Data on performance is particularly limited for lower respiratory tract infection, the mental health conditions associated with suicide, and kidney disease, and is lacking altogether for dementia.

In most areas the health service is not delivering outcomes as good as those of its peers. Performance for cancer and cardiovascular diseases, the developed world's two highest causes of death, is consistently below average. However, there are areas where it does better, and the gap is closing in some important fields.

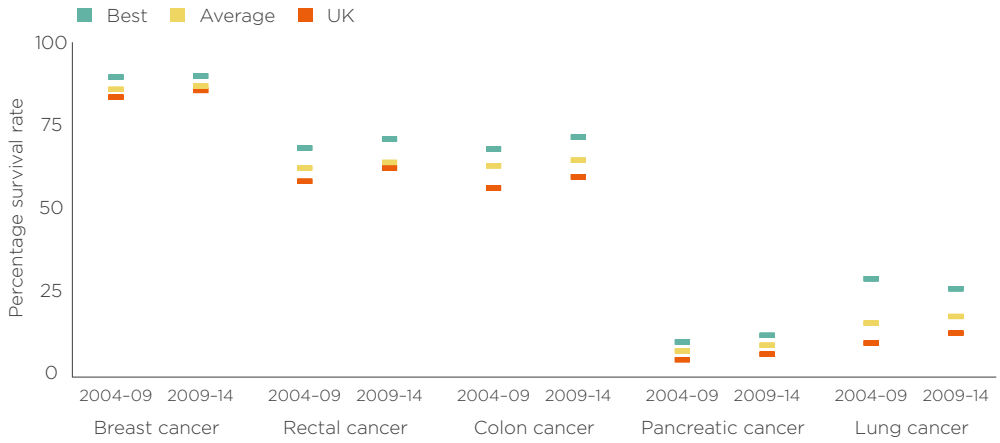
Cancers

Four types of cancer are among the 12 top causes of death in wealthy countries: lung, colorectal, breast and pancreatic. Survival rates after a particular period of time are a widely recognised measure for comparing the quality of cancer care between countries.

CONCORD-3 is the most recent comprehensive study to report the proportion of people still alive after five years of being diagnosed with different types of cancer in different countries, adjusting for the risk that they might die anyway. The results are shown in Figure 14, with colorectal cancer split across two different categories.

Judged on this basis the UK is below average for people with all these types of cancer – although we are gradually closing the gap. For lung, colon, and pancreatic cancer, the UK does especially poorly. Among the cohort of comparison countries, we are the worst for pancreatic and colon cancer and the second-worst for lung cancer. We have slightly closed the gap with other countries for these cancers, being somewhat less far behind in the period ending in 2014 than in the period ending in 2009. More generally, survival for most cancers has been steadily rising in the UK and across the world.[70]

Figure 14: Five-year cancer survival rates by period and type of cancer



Source: CONCORD-3 study.[70]

For rectal and breast cancer, the UK is somewhat below average, but this is not as pronounced. It has closed the gap considerably with the average of the other countries in recent years.

Data on survival for the four types of cancer up to 2007, compiled in the Eurocare 5 study, suggested all UK countries perform similarly to one another.[71]

Academic studies on earlier international data collections of cancer survival have tried to disentangle whether the poorer performance of the UK is related to detecting cancers later. For lung, colorectal and breast cancer, they found that the UK appears to be both picking up cancer later, and for many classes of diagnosis, treating patients less successfully compared with patients picked up at the same stage elsewhere.[72, 73, 74]

There has been recognition in the UK that cancer survival is lagging behind. Cancer strategies which explicitly aim to close the gap with better performing countries are in place in Scotland, England and Wales.[75, 76, 77] Studies have identified several factors which may partially explain why our survival rates lag behind. These include patients in the UK being more reluctant than their counterparts in Australia, Canada or Scandinavian countries to bother their GP with possible cancer symptoms,[78] and UK GPs being less likely to refer people for diagnosis at an early stage.[79]

Diabetes

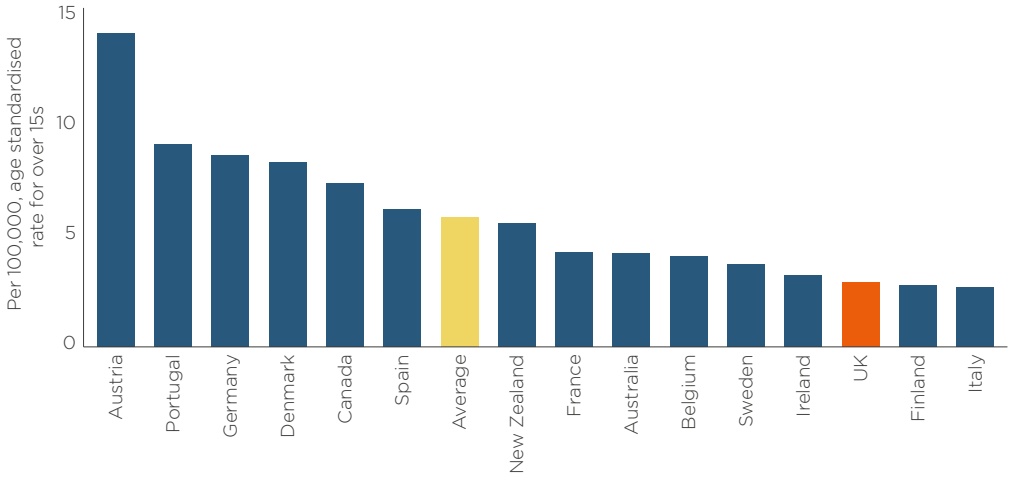
Diabetes mellitus is the eighth most prominent cause of death in wealthy countries. Type 2 diabetes, which tends to emerge gradually and is associated with obesity, is by far the most common type in the UK[80] and internationally. Global data is not currently available to fully distinguish these different types.[81]

Both type 2 and the somewhat rarer type 1 diabetes are long-term illnesses where careful management can often avoid deterioration to the point of serious injury, hospital admission and death. Available measures suggest that the UK is doing well at achieving this relative to other countries.

The OECD counts how likely adults in any given year are to be admitted to hospital for diabetes, as a measure of how well services like GPs are doing in keeping people well. The UK is one of the best countries: fewer than one in a thousand people are admitted in a given year, whereas more than two in a thousand are admitted in Austria or Germany.

OECD figures also measure one of the worst outcomes from poorly managed diabetes: the need to have feet or legs amputated due to nerve or circulatory damage. Again, the UK does well at avoiding this compared with most of the comparison countries, as shown in Figure 15.[82]

Figure 15: Rates for foot and leg amputations for diabetes (2015)



Source: OECD 'Health care quality indicators' dataset.[82]

Lastly, the Global Burden of Disease (GBD) study of amenable mortality calculates how well the UK is doing in avoiding actual deaths from diabetes. The results show we are somewhat better than the average of our comparison countries.[83]

As noted above, the UK has a low overall rate of diabetes among its population. This makes it likely that our low rates of admissions and mortality are partly due to a smaller

population with the disease. However, given that the most common type of diabetes can be prevented by lifestyle changes and medication in those at risk, it is possible that the overall rate is itself partly a reflection of NHS care.

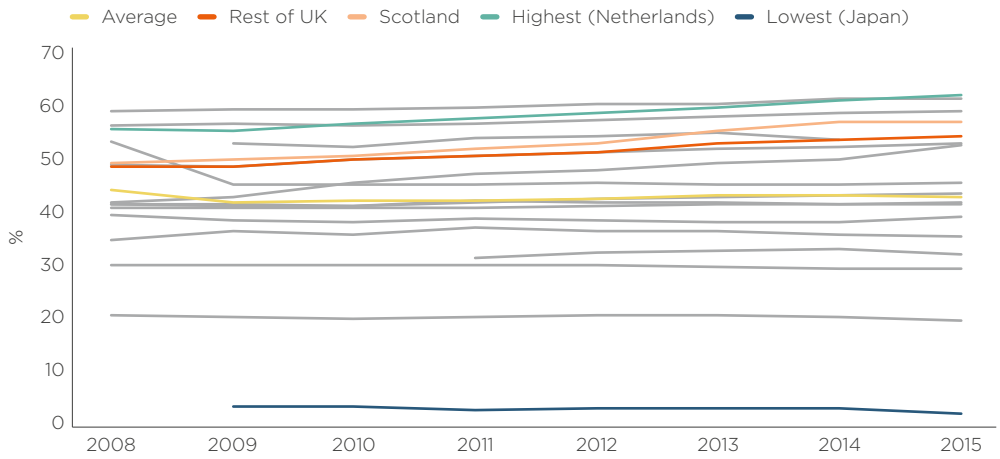
Kidney disease

Kidney disease is the ninth biggest cause of death in wealthy countries. The WHO's figures show nearly all these deaths are due to chronic kidney disease, which is a long-term problem, more common for older people and often linked to high blood pressure or diabetes.[84] The measures of quality available suggest the UK is doing well in treating kidney disease.

The United States Renal Data System (USRDS) compiles a range of statistics on kidney disease across different countries. Its data shows that the UK has a below-average incidence rate of end-stage renal disease. This is the most severe stage of the disease when the kidneys no longer function. It can be delayed or averted through successful health care. In Scotland, 115 people per one million, and 120 per million in the rest of the UK have end-stage renal disease, compared with an average of 166 per million among our comparator countries.

Among those who do have end-stage renal disease, UK patients are more likely than average to have a transplant, as shown in Figure 16. Scotland's data has been entered separately. The USRDS says transplants are considered by many patients to be the preferred treatment, with higher quality of life and longer median survival.[85, 86]

Figure 16: Proportion of end-stage kidney disease patients with transplant



Source: United States Renal Data System.[86]

The GBD study of amenable mortality also shows the UK doing well in avoiding deaths from kidney disease. In fact, with a score of 100 the UK performs the best of any country.[87]

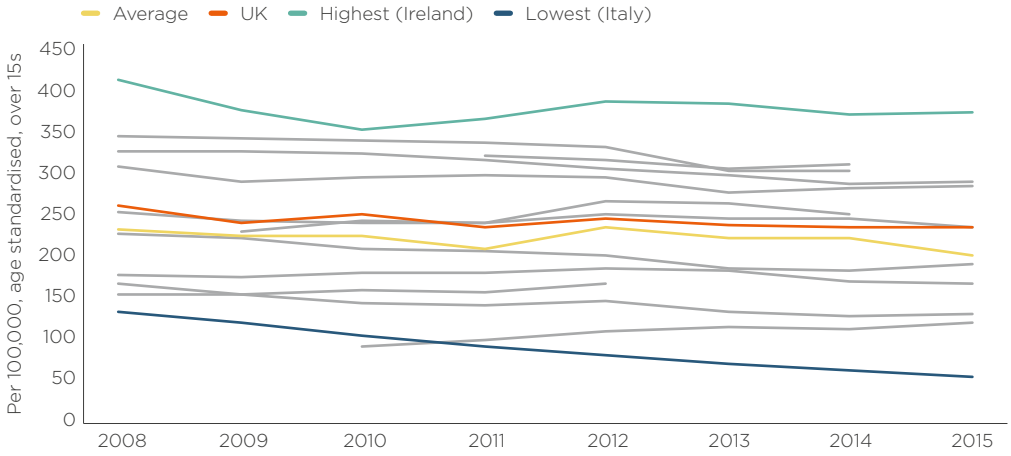
Respiratory disease

Two types of illness which affect breathing and the lungs are among the developed world's biggest killers. The data available suggest that the UK is somewhat below average in dealing with them.

Chronic obstructive pulmonary disease (COPD) is a long-term problem with breathing due to lung damage associated with smoking or pollution. Successful management of it should

reduce the likelihood of deterioration to the point where people need to go to hospital. The OECD counts the rate of COPD admissions as a measure of how successfully health services are keeping people well. As shown in Figure 17, the UK is slightly worse than the average of the comparison countries, and although it has slowly improved, the gap has not been closing. It should be noted that some of the fluctuations in the average are probably simply due to variation in which countries send data in.[88, 89]

Figure 17: Rates of hospital admissions for COPD



Source: OECD 'Health care quality indicators' dataset.[89]

Lower respiratory tract infection is another major cause of mortality. It is the only type of infectious disease still in the top 12 causes of death in developed countries, and covers illnesses like pneumonia, caused when viruses, bacteria or fungi infect people's lungs. The GBD gives scores for amenable deaths from these infections in 2015, and the UK performs relatively poorly.[90]

Looking at World Health Organization figures for the crude rate of death from these diseases over time, among people aged 0–70 for whom mortality should be preventable, the UK again has a relatively high rate. However, it is less far behind in 2015 than in the past.[91]

Suicide

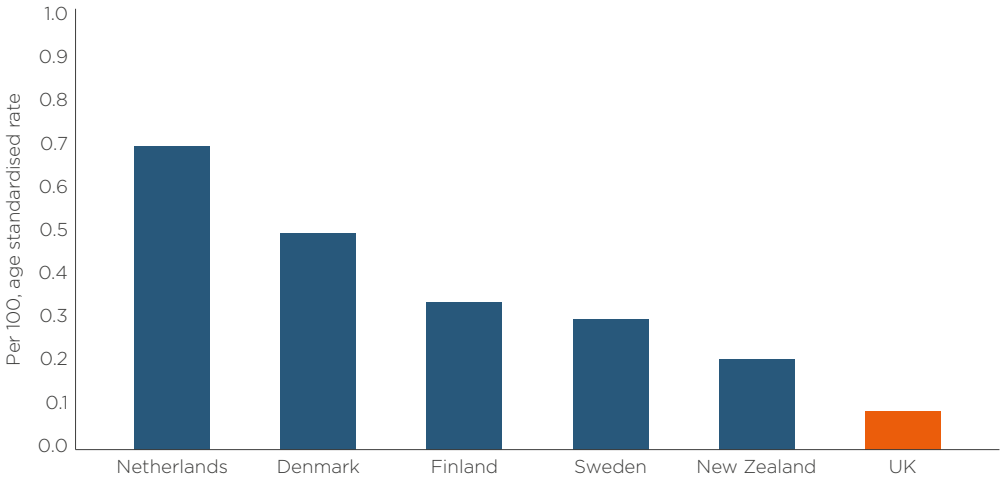
Self-harm is the twelfth most common cause of death across wealthy countries, and the most common type of fatal injury. Internationally comparable data on the quality of care for the mental health conditions linked to suicide is limited.

The OECD compiles data on how likely people are to die by suicide during and after contact with mental health services in different countries.

This data misses many of the countries in our comparison group, but among those for whom data does exist the UK has a consistently low rate of suicide. UK patients are the least likely to kill themselves as inpatients; within a month of being discharged; and within a year of being discharged.[92, 93]

Experts we spoke to suggested that while these measures have the potential to be proxy measures of health care quality, their interpretation is not straightforward. Because suicide is a relatively rare event, it is not an ideal measure of the quality of mental health care. The UK may also be recording patients differently to other countries because of the NHS's particular tendency to put physical and mental health care services on different sites.

Figure 18: Rates of suicide per 100 within a year of discharge (2015 or latest year)



Source: OECD 'Health care quality indicators' dataset.[93]

This could mean the data we give the OECD is missing some people with mental ill health who were discharged from physical health care and then died by suicide, or that its more specialist facilities are capturing a wider general pool of patients with mental health problems, pushing the rate of suicide down. It is noteworthy that on older figures for the rate of suicide among people with schizophrenia and bipolar disorder, especially severe mental health problems which are perhaps more likely to be prominently recorded, the UK did not do so well.[94]

The UK's overall suicide rate is also relatively low,[95] so it is possible that dynamics in UK society rather than health care are influencing a lower UK rate of patient suicide.

Dr Parashar Ramanuj, a psychiatrist and senior research fellow at RAND Europe, shared with us the results of an international exercise looking for any further comparable data on the quality of mental health care. This found it was not yet possible to compare important aspects of quality, like the rate at which people were kept secluded or hospitalised involuntarily, across multiple countries. It was possible to compare the rate at which patients were followed up within seven days of discharge, something considered desirable in part to deal with the risk of suicide, across England, Australia, New Zealand and the United States. England appeared to have the highest rate, although this again could reflect differences in recording or definitions.[96]

Dementia

Alzheimer's disease and other types of dementia are now the third-largest cause of death in wealthy countries, behind only heart attacks and strokes. However, we were unable to find any comparable outcome data with which to see how well the NHS does compared with other health care systems, perhaps partly because there is unfortunately relatively little that medicine today can do to prevent or delay deaths from most types of dementia.

Stroke

The OECD records the proportion of people in different countries who die within 30 days of being admitted to hospital for a stroke.[97] The UK is among a group of countries which submit 'linked' data to measure this, capturing mortality both in and out of hospital.

Compared with the other countries in our comparison basket submitting data of this standard, we perform slightly worse than average but have been catching up.

Ischaemic stroke, where a cut-off blood supply causes brain tissue to die, is the most common type. In the most recent year 11% of UK patients admitted with ischaemic stroke died within 30 days, compared with 10% across the other countries.

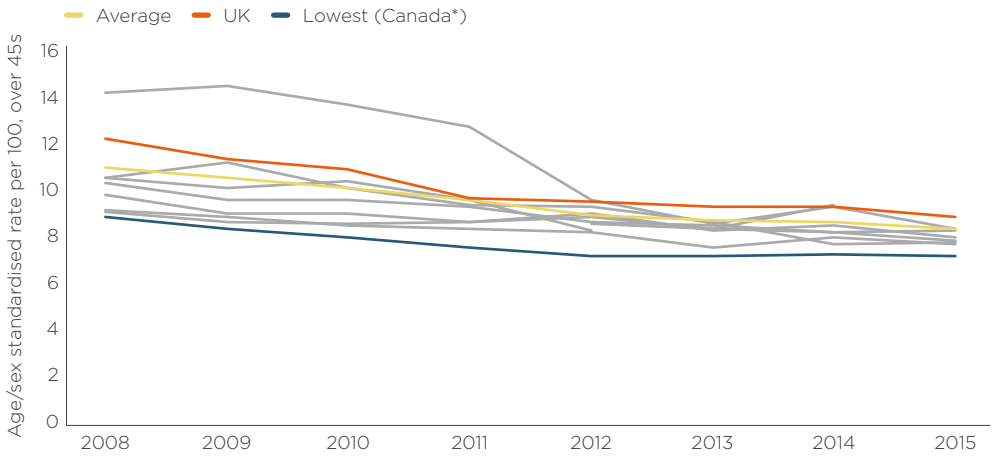
For haemorrhagic stroke, a less common but more fatal type where bleeding occurs in the brain, 28% of UK patients died within 30 days in 2016. This compares with an average of 26% across the other countries in our comparison basket who submitted fully joined-up data, and less than 20% in Finland.

The UK has improved its relative performance over the past decade, most strikingly for ischaemic stroke. In 2008, the UK was the single worst country for ischaemic stroke mortality, with its patients half again as likely to die compared with the average. It is now no longer the worst performer, and the gap is down to a tenth. These improvements may reflect a series of national and regional drives to improve the quality of stroke in the UK over the last decade, including England's National Stroke Strategy[98] in 2007, a programme to centralise services in London in line with this, and a series of initiatives in Scotland.[99]

Heart attack

Mortality within 30 days of being admitted into hospital is also an important measure of quality in caring for heart attacks. Again, using OECD statistics, it is possible to compare the UK with other countries which submit linked data. The UK generally does worse than average. Across the world there has been improvement over this period, and the UK has been getting better too, but it is not clear that it is catching up. The gap with the average of the other countries was almost closed in 2011. Since then, though, despite the UK continuing to slowly improve, the gap has opened up again as others pull ahead.[100, 101]

Figure 19: Mortality rate within 30 days of admission for heart attack



* Canadian data does not include deaths out of hospital and may be misleadingly low.
Source: OECD 'Health care quality indicators' dataset.[101]

Academics have studied UK and foreign data to try to work out why the UK has a higher mortality rate than many of its peers. One study concluded that compared with Sweden, part of the difference seems to be accounted for by the UK being slower to roll out the

best treatments, and part by UK patients being in higher-risk groups to start with. Because the OECD figures only standardise for age and sex, they may also reflect any differences in the characteristics of patients coming forward. However, this study ultimately found that much of the gap remained to be explained.[102, 103]

Amenable mortality

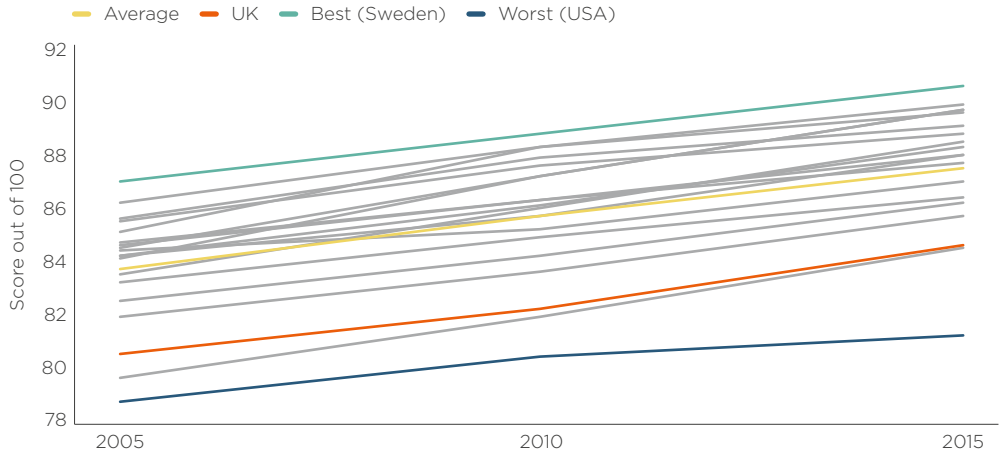
One method used to try to compare the outcomes health systems achieve across all different types of condition is to calculate the rate at which people die as a result of conditions where successful medical intervention should be able to save their lives.

These measures of 'amenable' mortality are difficult to calculate. There is a risk that differences in how countries record illness and death will skew the results. The health of people in different countries is shaped by a wide range of social, cultural and economic factors. This means it is difficult to be sure whether higher deaths from a particular condition mean a failure of the health care system, or just that a condition is more common or severe in a country to start with, for reasons that may have little to do with health care.

Last year a global team of researchers published a study based on GBD data from 195 countries, and tried to adjust for both these problems to create an index of deaths which could have been avoided, from 0 to 100. The best score is 100, representing the highest performing country. We have chosen to use the results of this study because it covers all comparison countries; it makes a particular effort to adjust for background risk factors; and it uses recent data, up to 2015.

The results show that although the UK does well by global standards, it performs poorly compared with the other developed countries in our comparison group, as shown in Figure 20. In 2015, it was third from bottom out of these 19 countries. The study also provided calculations from 2005 and 2010, and across these years it is not clear that the gap between the UK and other countries has been closing.[104, 105]

Figure 20: Amenable mortality scores, as calculated by GBD collaboration



Source: Global Burden of Disease study.[105]

The European Union also collects amenable mortality statistics for its member states. Their findings are similar, with the UK having a relatively high rate for a Western European country. In 2015, 117 out of every 100,000 people in the UK died avoidably, compared with 102 on average and only 78 in France, the best performer.[106]

Patient experience

A good experience for patients is a valuable goal of health care in its own right.

An array of international surveys in recent years allows us to compare how well the NHS is doing compared with its international counterparts in providing this. In general, people in the UK report relatively more favourable views and experiences of health services. It should be noted that responses to these general questions may be shaped by wider social and political perceptions, as well as actual experience of being a patient.[107]

The Commonwealth Fund carries out surveys of representative samples of adults in the UK and eight of our comparator countries, most recently in 2016. Compared with the average of adults in other countries, adults in this country were significantly more likely to say their regular doctor knew important information about their medical history and that nurses treated them with respect during hospital stays. They were at least as likely as adults in other countries to say that doctors in hospital treated them with courtesy and respect, and that their regular doctor spent enough time with them and explained things well.[108]

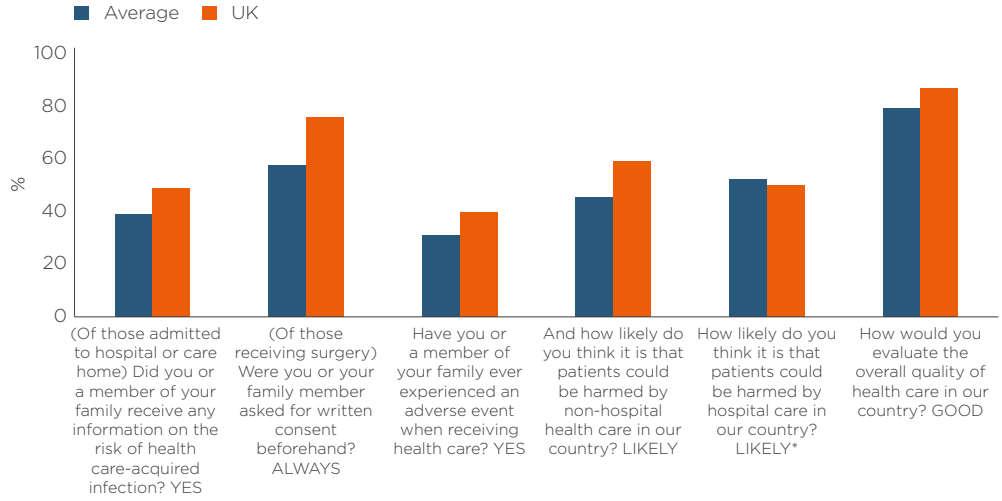
The OECD, European Commission, and Ipsos MORI have also carried out or commissioned surveys to measure patient experience across developed countries in recent years. For general questions about perceived health care quality, and some specific measures, the UK performs well:

- Ipsos MORI's Global Trends Index in 2016 found that 65% of people in the UK expected to be treated fairly by public sector health care organisations compared with an average of 57% across our comparator countries, and 69% rated the quality of health care they had access to as good, compared with an average of 58%.[109, 110]
- The OECD found UK patients to be more likely than average to report that their regular doctor involved them in decisions about care and treatment, but this has declined since 2010. UK patients were formerly more likely than average to say that they spent enough time with their doctor during their consultation, but by 2016 this had fallen to the average of the comparison countries.[111]
- The European Commission's Eurobarometer opinion polling in 2013 found that the UK did better than the average of the Western European countries in our comparison basket on overall perceptions of the quality of health care, and on whether people were asked for consent before surgery.

However, some specific questions produce more concerning findings:

- The Eurobarometer survey also found adults in the UK were more likely than average to say they or their family had experienced an adverse event while receiving health care. It should be noted that this was part of a general pattern of people being more likely to report adverse events in the wealthier countries of Northern and Western Europe, making it possible that expectations and perceptions play a role.[112]
- When asked specifically about their experiences with public sector health care in the past year, UK respondents were slightly less likely than average to say they had had a good experience, and slightly more likely than average to report major complaints or problems.[113, 114]

Figure 21: Eurobarometer polling results on quality and safety of care (2013)



* Difference within margin for error.
Source: European Commission 'Patient safety and quality of care'.[114]

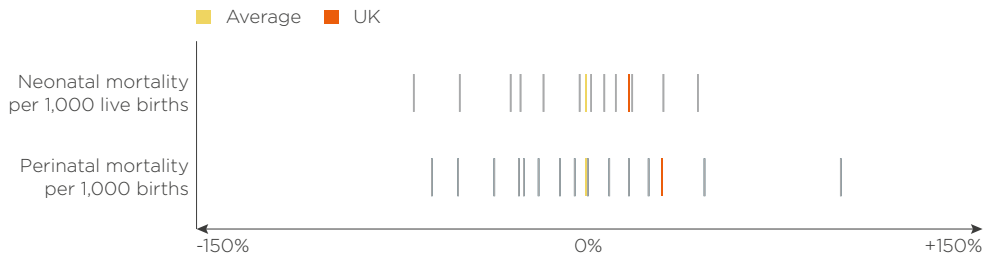
Birth

Caring for mothers and babies around birth is an important role for any health care system. A range of different measures allow us to compare the outcomes the NHS achieves in this area to those in other countries. The UK's performance is average at best and poor in many cases.

Figures are available for the deaths of babies at birth or just afterwards (perinatal mortality), and in the month after birth (neonatal mortality), from the OECD.[115]

The UK has consistently higher rates of mortality than the average of our comparator countries on both measures.[116]

Figure 22: Neonatal and perinatal mortality rates



Source: OECD 'Health status' dataset.[116]

Characteristics of the wider population, including inequality and maternal age, play an important role in driving these tragic outcomes – for example by influencing low birth weight of babies, which appears to explain part of the UK's poor performance.[117] However, these do not account for all of the difference[118] and health care does influence outcomes: a study recently found that different care might have made a difference in 80% of child mortality cases in a UK sample.[119]

The OECD also publishes maternity mortality rates. The UK appears to be doing poorly, but an expert we consulted at the University of Oxford's National Perinatal Epidemiology Unit warned that this is partly an illusion caused by the UK being more thorough in detecting when somebody who dies is a mother or is pregnant. Calculations the unit has produced to compare with other countries on a similar basis would suggest the UK was around average from 2012 to 2014.[120]

Lastly, the OECD publishes the rate at which deliveries of babies result in 'obstetric trauma' injuries to the mother. UK statistics are submitted only from Wales, Scotland and Northern Ireland. These show an average rate for trauma in deliveries using an implement, but higher than average rates of trauma for deliveries without an implement.[121]

Discussion and conclusions

The picture of the NHS that emerges from these measures is partial at best. The change in the definition of health care spending over time and the lack of comprehensive data on equipment, staff and activity make it difficult to tell how well resourced the NHS really is, and how efficient it really is. For most outcome measures, we are a long way from a measure of success that takes account of differences between the level and type of illness that is presented to the NHS compared with its counterparts.

There are limitations and caveats attached to almost every specific measure we do have, meaning all of our findings come with a degree of uncertainty.

There are also points that our methodology is unable to capture. Our decision to use mortality across wealthy countries as an objective benchmark to decide which particular conditions to look at means we fail to capture how the NHS deals with conditions that tend to cause lasting disability, but not death.

Some areas of the NHS may look good relative to other countries, and yet still be unsatisfactory in their own right. It may be the case that certain services, like mental health, are still not being given comparable focus to others within the NHS. Within particular services there are concerns that groups such as the economically deprived and those with learning disabilities[122] are poorly served: internationally comparable data is simply not detailed enough to shed much light on these issues.

And we must be careful about assuming there is a single NHS measure on any indicator to compare. Sources like the Atlas of Variation for the NHS in England show how widely everything from the rate of CT scans to the rate of deaths from heart attacks varies even within one of the UK's four countries.[123]

Nonetheless, we can reach some clear and important conclusions about our health service.

The NHS has definite strengths relative to other health systems. It provides unusually good financial protection to the public from the consequences of ill health; it appears to be relatively efficient; and it performs well in managing some long-term conditions. It does all this with an unusually low level of staffing and, in at least some categories, equipment.

However, the NHS does not have especially good outcomes relative to other wealthy countries. For the most important illnesses in directly causing death, it is a consistently below-average performer.

It is striking that this still plays a relatively small part in political and policy discourse across the UK. While health service leaders have recognised and tried to address this fact at various times in the different countries, at a political and media level waiting times remain more widely discussed, despite appearing to be roughly average in an international context.

For several conditions, we have at least some idea from academic and medical literature of what might be causing worse performance. The answers range from how likely the British public are to approach a doctor with certain symptoms, to how likely people are to be referred for tests, to the ability of the system as a whole to spread best practice.

It seems plausible that poor performance is to some extent connected to relatively low levels of staffing and equipment. The fact that the UK spends close to an average share of GDP today on health care underlines that the level of funding in a given year is not the only measure that matters in determining the resources available in health care. It also matters whether that funding is sustained and whether it is invested in permanent assets.

The low numbers of professional staff despite near-average spending, and salaries which do not seem to be uniquely high, suggest a possible constraint on supply. This is not difficult to reconcile with persistent criticism of NHS workforce planning.

We also know that nearly all health outcomes are influenced by social, cultural and economic factors beyond the health service's doors. While risk factors like high blood pressure and smoking are not especially high in the UK, our relatively low life expectancy may point to some factors influencing how healthy people are in this country which we are as yet unable to capture. There is some evidence supporting the possibility that the UK's relatively high income inequality might be linked to health outcomes, but the picture is far from clear.[124]

These findings should serve as a corrective to more starkly polarised views of the health service. Analyses of international data which focus specifically on health outcomes, especially those for acute illness, have concluded that the NHS is simply inferior to other countries' health care services.[125] But this seems difficult to square with its strong financial protection, apparently respectable efficiency and waiting times, and better than average outcomes on some important conditions.

However, on an overall view it is also hard to argue that it remains the "envy of the world", as Aneurin Bevan, its creator, said in an age when far fewer other countries had universal health coverage. The reality is that the NHS is not doing as well as its counterparts at saving the lives of patients with many of the most common and lethal illnesses.

Looking at how good the NHS is in an international context does not provide us with the final word, but rather a set of issues to address as we look forward from the health service's 70th birthday. Our reports in the coming days will look at some of the most important issues which will affect its future: funding; social care; the contract with the public; and technology. The NHS is a system set up to deliver the best care to everybody in the UK, and its staff believe deeply in this mission. The most fitting birthday present it could receive would be a national discussion about how government, society and the public can work with it to realise this goal more successfully than ever.

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To mark the BBC's coverage of the NHS's 70th birthday in July 2018, researchers from the Health Foundation, Institute for Fiscal Studies, The King's Fund and the Nuffield Trust have joined forces for the first time, using combined expertise to shed light on some of the big questions on the NHS.

The Health Foundation

The Health Foundation is an independent charity committed to bringing about better health and health care for people in the UK. Our aim is a healthier population, supported by high quality health care.

Nuffield Trust

The Nuffield Trust is an independent health think tank. We aim to improve the quality of health care in the UK by providing evidence-based research and policy analysis and informing and generating debate.

Institute for Fiscal Studies

The Institute for Fiscal Studies is Britain's leading independent microeconomic research institute. The goal of the IFS is to promote effective economic and social policies by better understanding how policies affect individuals, families, businesses and the government's finances.

The King's Fund

The King's Fund is an independent charity working to improve health and care in England. We help to shape policy and practice through research and analysis; develop individuals, teams and organisations; promote understanding of the health and social care system; and bring people together to learn, share knowledge and debate. Our vision is that the best possible health and care is available to all.