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How does the NHS compare with health systems in other countries?

by Natalie Berry

This is one of a series of overviews looking at key areas of quality: safety, waiting times, mental health, person-centred care and international comparisons.

See: www.health.org.uk/qualityoverview

The UK's health system has strong foundations to work with, but more could be done to prevent and treat ill health

This overview looks at the use of international comparisons, and examines how the UK health services compare with other countries' health systems in a number of key areas. Data submitted for international comparisons are generally UK-wide aggregate statistics. As such, this overview focuses on the United Kingdom unless otherwise stated.

Key points

- **The UK health systems provide universal coverage for the population.** Relative to other countries, the NHS provides highly equitable care. It also performs well internationally on a number of reported measures of experience and access.
- **The UK's comparative performance against key health outcome measures (such as deaths that could be prevented by effective health care) is less positive.** Where condition-specific effectiveness measures are available, they present a mixed picture in terms of the UK's comparative performance and suggest significant room for improvement.
- **International comparisons present a complex challenge.** They can be over-simplistic and the results risk being misleading when taken at face value. Information from international comparisons is best used to stimulate further questions and improvement. When doing so, the headline indicators should be considered alongside a wide range of other information in order to fully understand the nuances associated with a particular issue.
- **Taken together, this information suggests that the UK's health system has strong foundations to work with.** However, more could be done to prevent and treat ill health, both within and outside of the remit of the NHS.

'League tables have simply not proved a satisfactory way to compare entire complex health care systems'

National Quality Board⁴

International comparisons in context

The use of measurement and comparison is a cornerstone of quality improvement. For any comparison to be useful – whether between services or whole systems – it is essential to understand its strengths and limitations. While international comparisons enable us to ask questions and gain insights into potential areas for improvement, their usefulness is limited by various methodological issues.

The scale, range and complexity of health care make measuring the overall quality of a single health care system, or even that of individual organisations within it,¹ extremely challenging. The task of trying to compare health care systems internationally is harder still. Rankings can, and do, vary significantly depending on the weight and value judgements assigned to specific metrics or themes.² While league tables of health care systems are still produced (such as the 2014 example published by the Commonwealth Fund),³ experts, including the National Quality Board, have questioned their utility.⁴

The country rankings produced by the World Health Organization in 2000 were also widely criticised, even by those countries that had received the top rankings.^{4,5} Even without league tables, international comparisons of the performance of health care at a national level can lack meaning without a detailed understanding of the context behind them, or without looking across a range of measures and sources of information.

This overview looks at a small selection of themes relating to the Institute of Medicine's six domains of quality: equity, patient safety, timeliness, person-centredness, efficiency and effectiveness.⁶ We compare outcomes across 20 countries, comprised of the EU-15^{*} plus five non-EU, high-income counterparts: USA, Australia, New Zealand, Switzerland and Japan. In some cases, data were not available for all of these countries against selected indices. It is also important to note that averages supplied by the Organisation for Economic Co-operation and Development (OECD) are based on a wider range of countries than just those presented, the total number of which is noted in each case.

This is an overview, not a comprehensive review of international comparisons or the issues associated with such themes. Later in 2015 we will publish a separate, more in-depth review of international comparisons in health care as part of QualityWatch, a joint Health Foundation and Nuffield Trust research programme.[†]

A snapshot of key themes

Equity of access to care

The NHS achieves universal health care coverage of the UK population.⁷ In 2014, the Commonwealth Fund ranked the NHS as first among 11 comparable systems, largely due to the weight placed by the authors on the protection that such universalism offers to citizens.³ One example of the impact of this publicly funded protection is that out-of-pocket health care expenses in the UK are very low in comparison with health systems in other countries (figure 1, page 3).

* 'EU-15' refers to the first 15 countries to join the European Union: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom.

† For more information about the programme, see: www.qualitywatch.org.uk.

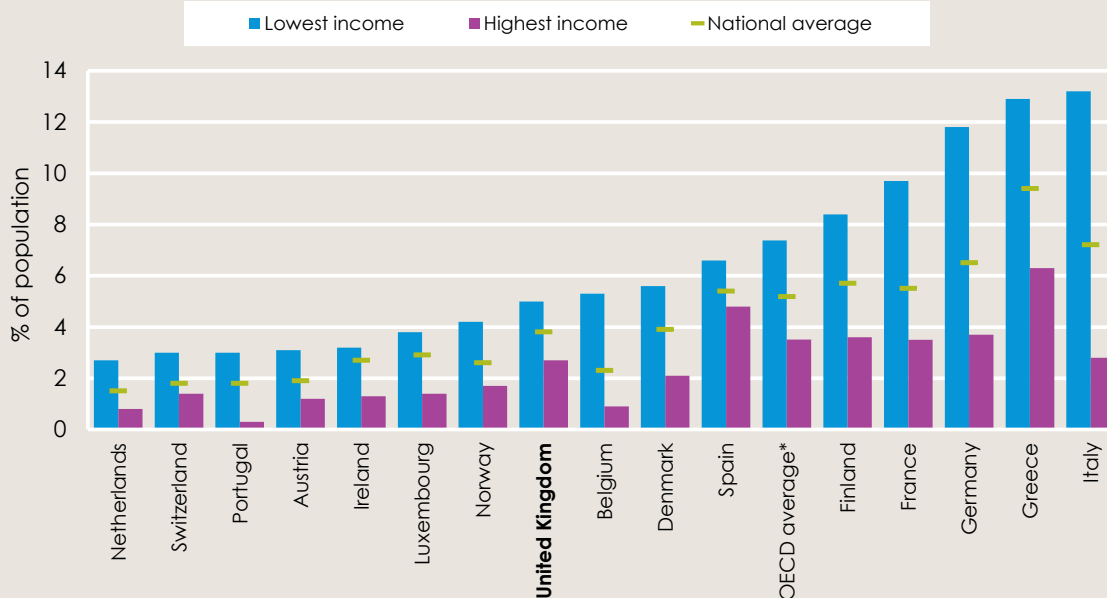
Figure 1: Out-of-pocket medical spending as a share of final household consumption, 2011 (or nearest year)



* OECD average based 34 countries.
 Data for Australia, Austria, Japan and New Zealand is 2010 data
 Source: OECD Health at a Glance data, 2013

However, while overall reported levels of unmet care needs are lower than the OECD average, nearly 4% of the UK population (on average) report barriers to accessing necessary medical examinations. A common finding across countries is the unequal distribution of results depending on income group, with the poorest more likely to report unmet care needs than the richest. The UK follows this pattern (figure 2).

Figure 2: Unmet care needs (for any reason) for medical examination, by income level, 2011



* OECD average based on 24 countries.
 Data on unmet health care needs come from the European Union Statistics on Income and Living Conditions survey (EU-SILC). Survey respondents are asked whether there was a time in the previous 12 months when they felt they needed a medical examination but did not receive it, followed by a question as to why the need for care was unmet. The reasons include that care was too expensive, the waiting time was too long, the travelling distance to receive care was too far, a lack of time, or that they wanted to wait and see if the problem got better on its own. Figures presented here cover unmet care needs for any reason. Cultural factors, public expectations and policy debates may affect attitudes to unmet care. Caution is needed in comparing the results across countries.
 Source: OECD Health at a Glance data, 2013

Timeliness, person-centredness and safety

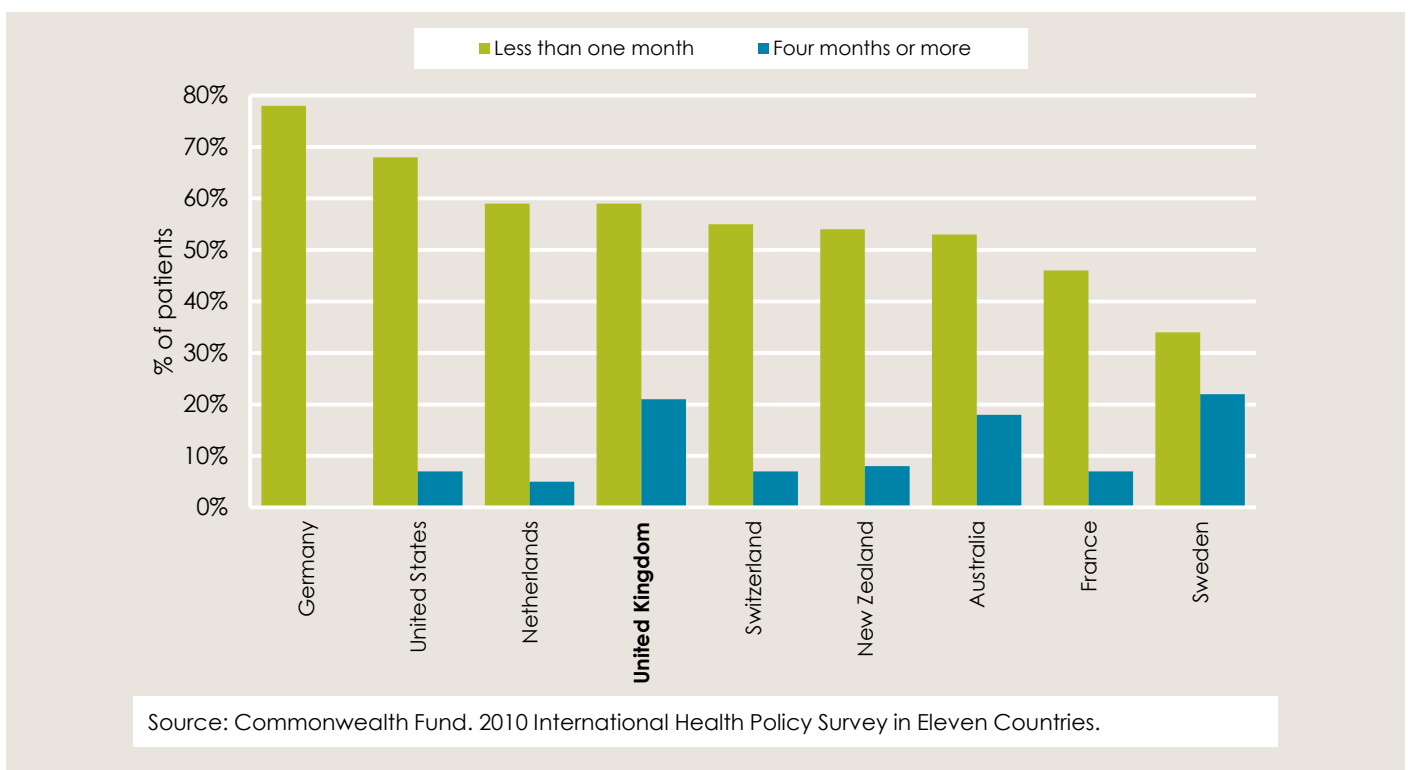
In 2014, the Commonwealth Fund ranked UK health systems first for safety, person-centredness and access to health care, based on a range of measures for each domain.

However, as our overviews on waiting times, person-centred care and patient safety demonstrate, it is difficult to give a definitive assessment of performance over time in these complex areas within the NHS, and this challenge is compounded when comparing internationally. As such, there are three issues we should consider alongside the Commonwealth Fund's assessment.

First, timeliness of access to health care can be measured in many different ways. The major waiting time indicators used within the UK (for example, the four-hour A&E target) are domestic measures that cannot be compared internationally. Some are not even applicable or comparable across the four countries of the UK due to differences in policy.

Based on the available evidence, the UK performs quite well in relation to most accessible and comparable international measures of access to care.³ For example, for reported waits for elective surgery, the UK performs well in comparison to selected peers when we consider reported waits of less than a month. However, for reported waits of four months or more, the UK performs among the least well in this peer group (figure 3).

Figure 3: Reported waits for elective surgery



Second, person-centredness or experience measures often rely on survey data. At an international level, survey data can often mask differences in definitions or cultural norms and expectations that might guide people's responses to a question differently in one country compared to another.

Third, the lack of comparable measures of safety at an international level makes this domain difficult to assess. The main indicators relating to safety that are currently available within OECD datasets relate to examples of adverse events during surgery. Data for these adverse events show huge differences between countries. However, differences in reporting and attitudes to reporting safety incidents are likely to have a significant effect. As the OECD notes in its commentary on these measures: *'In some cases, higher adverse event rates may signal more developed patient safety monitoring systems rather than worse care'*.⁸

No one type of health system funding or organisation predicts higher levels of efficiency than any other⁹

Efficiency of care

Efficiency is difficult to analyse in relation to whole health systems on their own, and harder still when comparing them to each other. In this context, efficiency relates to the relationship between the inputs going into a health system, versus the outputs and outcomes produced. As such, no single area in isolation can represent the whole story, and evidence to date suggests that no one type of health system funding or organisation predicts higher levels of efficiency than any other.⁹

Average length of stay in hospital is traditionally viewed as a crude proxy measure of efficiency in hospital. Here, increased efficiency, including that stemming from progress in medical technology and a greater emphasis on community care, has contributed to a trend of gradual reductions in length of stay across countries, including in the UK.¹⁰ Table 1 shows that the UK's average length of stay in hospital is shorter than the OECD average. It also collates some key resource indicators from the limited comparative data available. This shows that the UK spends less than the OECD average on pharmaceuticals, with a higher proportion going on generic medicines, and that, on average, the UK generally uses fewer resources than its peers (measured in terms of staff and beds).

Table 1: UK and OECD comparisons across selected resource indicators

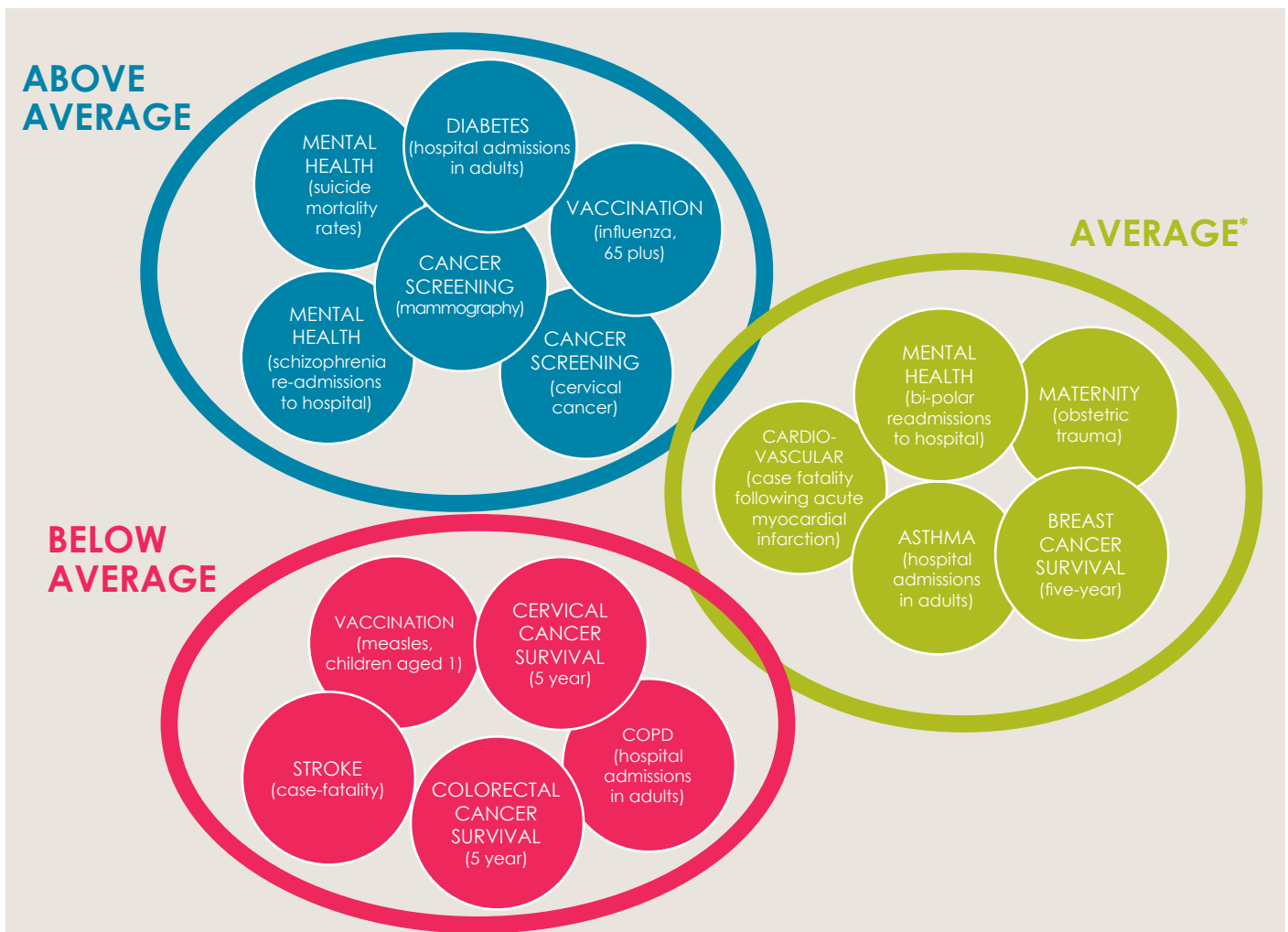
	UK, 2012 or nearest year	OECD average, 2012 or nearest year
Average length of stay in hospital, all causes (days)	7.0 (2011)	7.6 (2011)*
Total hospital beds (per 1,000 people)	2.8	5.0
Number of nurses (per 1,000 people)	8.2	8.1
Number of doctors (per 1,000 people)	2.8	3.1
Pharmaceutical expenditure per capita (US\$PPP) [†]	367 (2008)	462 (2008)
Pharmaceutical generic market share (% volume) [‡]	75 (2011)	40.5 (2011)

Source: OECD Health at a Glance Data, 2013.

Notes: *Excluding Japan as data are not comparable; [†]United States Dollar Purchasing Power Parity, a way of comparing prices across countries; [‡]OECD Health data 2013, Health at a glance.

However, different systems have evolved to place different emphases on the balance between care based in or outside of hospital, between specialists and generalists, and between self-referral and gatekeepers within the system. As a result, it is difficult to make like-for-like comparisons based on activity alone.

Figure 4: Summary of UK's position compared to the OECD average across condition-specific indicators¹¹



* 'Average' means within three countries above or below the OECD average

Condition	Indicator
Asthma	Asthma hospital admissions in adults, 2011 (Age-sex standardised rates per 100,000 population).
COPD	Chronic Obstructive Pulmonary Disease (COPD) hospital admissions in adults, 2011 (Age-sex standardised rates per 100,000 population).
Diabetes	Diabetes hospital admissions in adults, 2011 (Age-sex standardised rates per 100,000 population).
Cancer	Cervical cancer screening in women aged 20-69, 2011 (% of women screened).
	Cervical cancer five-year relative survival, 2006-11 (Age-standardised survival rates, %).
	Mammography screening in women aged 50-69, 2011 (% of women screened).
	Breast cancer five-year relative survival 2006-11 (Age-standardised survival rates, %).
	Colorectal cancer, five-year relative survival, 2006-2011 (Age-standardised survival rates, %).

Condition	Indicator
Cardio-vascular	Case-fatality in adults aged 45 and over within 30 days after admission for acute myocardial infarction (Age-sex standardised rates per 100 admissions).
Stroke	Case-fatality in adults aged 45 and over within 30 days after admission for ischemic stroke, 2011 (Age-sex standardised rates per 100 admissions).
Maternity & Childbirth	Obstetric trauma, vaginal delivery with instrument, 2011 (Crude rates per 100 instrument-assisted vaginal deliveries).
Mental Health	Suicide mortality rates, 2011 (Age-standardised rates per 100,000 population).
	Schizophrenia re-admissions to the same hospital, 2011 (Age-sex standardised rates per 100 patients).
	Bi-polar re-admissions to the same hospital, 2011 (Age-sex standardised rates per 100 patients).
Vaccination coverage	Influenza vaccination coverage, population aged 65 and over, 2011.
	Vaccination against measles, children aged 1, 2011.

Effectiveness of care

Clinical effectiveness is commonly measured in terms of outcomes relating to specific conditions or treatments. Internationally, there is limited breadth and depth of data available on specific conditions: not all conditions have indicators available for comparison at an international level, and even those for which data are available do not necessarily reflect the reality of what quality looks like for such conditions.

Figure 4 summarises the UK's position in relation to the average across the condition-specific metrics in the OECD's *Health at a glance 2013* report.¹¹ These are a relatively narrow set of measures – for example, internationally available data on mental health focuses on suicide mortality and readmissions for serious mental health conditions. These indicators can be used to prompt further discussion around these specific topics, but have limited ability to inform conclusions around how the UK compares internationally on mental health as a whole.

In 2010, nearly a quarter of deaths under the age of 75 in the UK could have been prevented by the provision of appropriate healthcare¹³

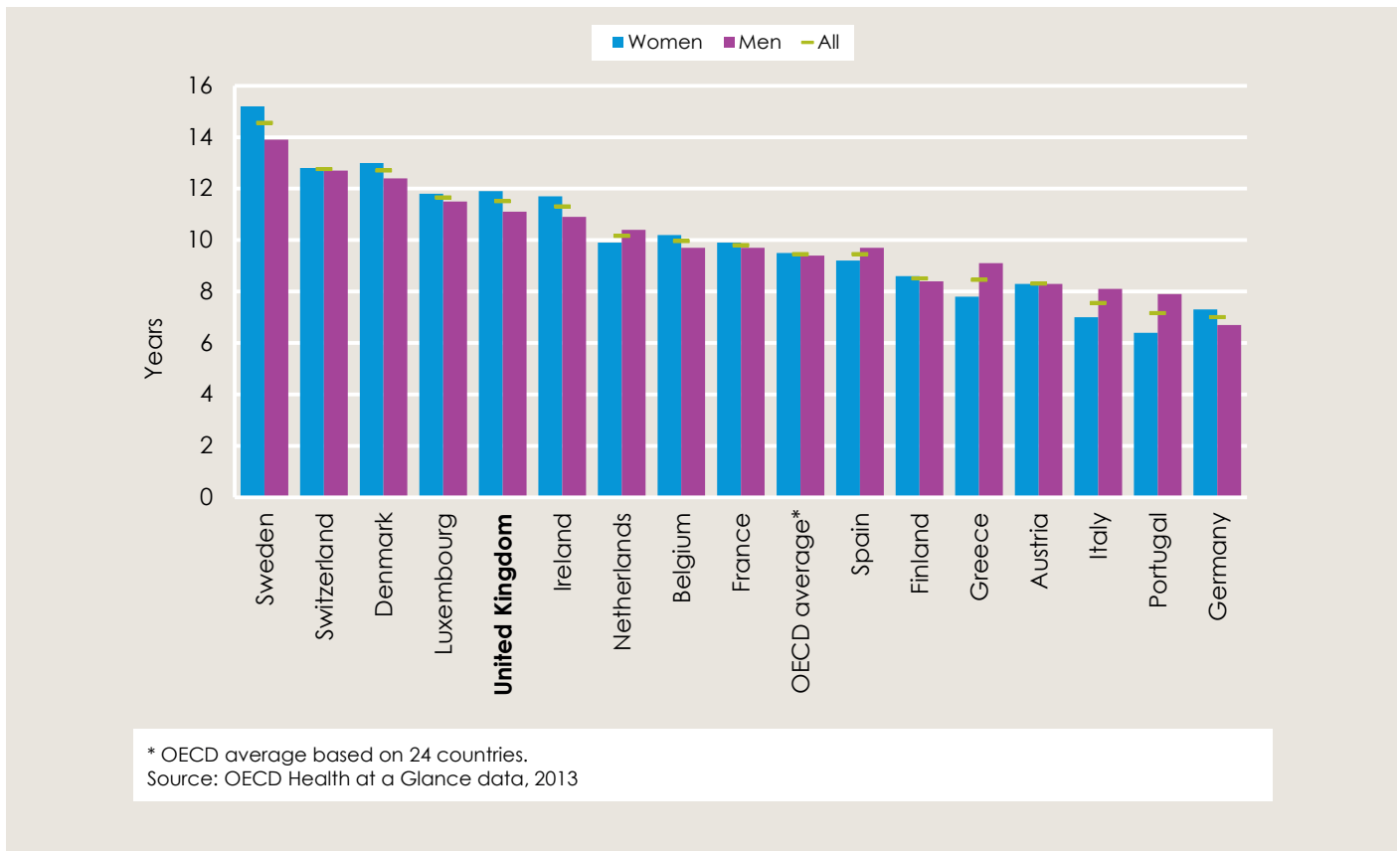
International measures relating to condition-specific mortality give a mixed picture as to the UK's performance. A measure that attempts to assess death rates more specifically in the context of health system performance is 'mortality amenable to health care'. This considers deaths that could likely have been prevented by the provision of appropriate health care. Based on updated analysis using the Page *et al* definition of mortality amenable to health care,¹¹ in 2010 nearly a quarter (24.7%) of UK deaths under the age of 75 could have been prevented by the provision of appropriate health care, compared to 19.8% of deaths in France, where the rate was lowest.^{*13} The average across all 19 high-income countries covered in the analysis was 24.2%, slightly lower than the rate for the UK.

In the Commonwealth Fund's 2014 report, the UK was placed second to last in the 'healthy lives' category, ahead of only the United States. This category uses selected indicators of population health outcomes, including mortality amenable to health care, infant mortality and life expectancy.

A useful measure in terms of life expectancy is 'healthy life expectancy', or the number of years of 'good health' people can expect to experience during their lifetime.

* Based on the 19 comparator countries considered within this analysis.

Figure 5: Healthy life expectancy at age 65, European countries, 2011



As figure 5 shows, the UK performs comparatively well on ‘healthy life expectancy’, when considered alongside its European counterparts.* For example, in 2011 a 65-year-old woman could have expected to live for nearly 12 more years in good health, compared to seven more years for a woman of the same age in Germany.†

Using a slightly different method and combination of comparator countries for such a calculation tells a different story, however. The 2010 Global Burden of Disease Study ranks the UK tenth for health-adjusted life expectancy at birth (incorporating mortality and years lived in less than ideal health) across 14 comparator countries. In this case, the countries are selected by income per capita, and go beyond EU countries alone (Japan ranks first).¹⁴ This analysis provides a further note of caution about interpreting league tables at face value, since different methods can produce different results.

The UK’s leading risk factors for premature death are linked to lifestyle

Considerations in relation to life expectancy go further than access to health care treatment alone. The Global Burden of Disease Study highlights that the UK’s leading risk factors for premature death are linked to lifestyle – in particular, dietary risks, tobacco smoking and high blood pressure. The UK’s performance compared to others in tackling such risk factors presents a mixed picture.

* OECD data is based on calculations by Eurostat for European Union countries, and some European Free Trade Association countries. The disability measure is the Global Activity Limitation Indicator (GALI), which comes from the EU-SILC survey. The GALI measures limitations to usual activities due to health problems.

† Selected for specific comparison as Germany has the lowest average healthy life expectancy at age 65 of the countries presented here.

Efforts to reduce smoking rates are starting to pay off in most western countries, including the UK. The UK reported a 27.4% decrease in adult smoking rates between 2000 and 2011; in 2011, 19.6% of the adult population reported smoking daily compared to 27% in 2000. This reduction is nearly seven percentage points above the level of change seen in the OECD average (based on 34 countries).¹⁵

However, levels of alcohol consumption among adults have increased over the past two decades¹⁶ and reported levels of drunkenness among young people in the UK are higher than the OECD average.¹⁷ Diet represents another major risk factor for the UK, and available indicators here also raise concern. While cross-country comparisons are limited by a lack of consistent methods of measurement for obesity, the data point to the UK's position being above average for reported levels of both childhood* and adult obesity.^{18,19}

Conclusion

When used intelligently, international comparisons can play an important role in quality improvement. However, there are many areas where appropriate data on quality are not available or comparable. This means that any results need to be viewed as the starting point for further questions and discussion, rather than as definitive answers in themselves.

The potential for the NHS to benefit from comparisons across countries was a major part of Lord Darzi's 2008 *NHS Next Stage Review*.²⁰ It looked set to form part of the work of the National Quality Board (NQB). However, the NQB last reported on international measures in 2010.⁴ Since then, debate has frequently been dominated by the use of broad health system rankings rather than areas of specific focus. Even comparison between the four countries of the UK appears to have become primarily a political issue, rather than a tool for mutual learning.^{21,22} This is a retrograde step that should be addressed.

Our findings suggest that, in terms of performance, the UK has some successes to celebrate, such as high levels of equity of access to care compared to some counterparts. Our analysis also points to variable performance in relation to health and effectiveness, where comparable measures exist, and exposes concerning trends in relation to some key lifestyle risk factors that influence people's ability to live healthy lives. Taken together, this evidence suggests that, while the UK health system demonstrates many positive attributes, more could be done to maximise positive health outcomes.

* Childhood obesity and overweight figures submitted to the OECD are for England only.

What about comparisons between the four countries of the UK?

Most of the data compared at an international level are submitted for the UK as a whole, unless otherwise stated. However, health is a devolved matter in the UK and each of the four countries has its own particular context. As such, England, Wales, Scotland and Northern Ireland each has its own story to tell which can be lost in aggregated data.

Each of the four countries in the UK has a tax-funded health service with universal coverage, but there have been diverging policies for health care since devolution, with reorganisations taking place in each country at different times with different goals. However, the 2014 Health Foundation and Nuffield Trust research report, *The four health systems of the United Kingdom: how do they compare?*,²³ examined the comparative performance of the four countries and concluded that:

'despite hotly contested policy differences between the UK health systems since devolution on structure, competition, patient choice and the use of non-NHS providers, there is no evidence linking these policy differences to a matching divergence of performance, at least on the measures available across the four UK countries.'

Much like comparisons at a global, OECD or EU level, cross-country comparisons within the UK suffer from the same challenges: a dearth of available and meaningful data, context being all-important in understanding patterns, and difficulties in comparing like with like.

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Errors or omissions remain the responsibility of the author alone.

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Natalie has held a number of roles in policy and legislation within the DH, spanning two governments. These include: the development of the Quality Accounts policy following the publication of *High quality care for all*, supporting the independent Nursing and Care Quality Forum in its first report to the Prime Minister and leading the development of the joint DH/ NHS England strategy *Transforming Primary Care*.

Natalie also worked on NHS reform during the parliamentary passage of the Health and Social Care Act 2012 and served as Private Secretary to Rt. Hon Jeremy Hunt MP, Secretary of State for Health.

Natalie holds an MSc in Health Policy from Imperial College London.

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