



A white paper
from The
Economist
Intelligence
Unit Healthcare

Health outcomes and cost:

A 166-country comparison

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Foreword

Over the past few decades, the world has seen dramatic improvements in health, helped in many cases by the rollout of universal healthcare systems. Although most countries have benefited, the gaps in health outcomes between different countries remain huge, however. Moreover, as life expectancy rises, the task of maintaining progress becomes more difficult and the need to derive maximum value from healthcare spending becomes more acute. Given this, there is an urgent need to ensure that future gains from healthcare are achieved at a price we can all afford.

This report from The Economist Intelligence Unit Healthcare is intended to add to that debate, by analysing how outcomes and spending differ in 166 countries worldwide, and outlining some of the reasons why those gaps have emerged. As such, it draws on our experience of global macroeconomic analysis and our knowledge of healthcare systems, as well as our expertise in value-based healthcare. The report shows that healthcare ecosystems frequently deliver outcomes that are at odds with their cost.

This poorer-than-expected correlation speaks to The EIU's strategic goal in healthcare: to facilitate optimal and sustainable value through independent



analysis and advice, to clients across the healthcare value chain. Over the past two years, we have integrated into our business two specialised consultancies: Clearstate, a healthcare-specific market insight and intelligence business; and Bazian, a clinically led consultancy dedicated to evidence-based medicine, epidemiology, health economics and outcomes. We have meshed these together with our extant analytical, econometric and strategic-consultancy divisions.

The result is a practice that provides customised research, analysis and recommendations in the following areas:

- Strategic advisory: analysing global and local trends and mapping these against clients' priorities.
- Market insight and intelligence: with global expertise and a unique focus on emerging markets
- Value optimisation: helping industry clients to develop propositions, products and services for a market where value is the emerging currency.
- Population-health-management solutions: helping payors, insurers and their partners to build healthcare ecosystems that optimise value.

The issues raised in this report are complex, given the interplay between lifestyles, economics and healthcare efficiency, and this report is intended to be the first in a series. Our overall aim is to draw out lessons for the future of healthcare in both developed and developing markets. The hope is that policy-makers, as well as those in the healthcare industry, will welcome the opportunity to join this debate on a subject that affects us all.

Please send your feedback to:

vbh@eiu.com

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Ana Nicholls, managing editor, EIU Industry Briefing

Annie Pannelay, senior industry consultant, EIU Healthcare and Life Sciences

Health outcomes and cost: a 166-country comparison

Some countries manage to achieve high healthcare outcomes for their populations at comparatively low cost. This Economist Intelligence Unit report compares outcomes and spending to assess value for money in healthcare.

Over the past decade or more, there have been several efforts to find out which are the world's best-performing healthcare systems. The pioneer was the World Health Organisation (WHO), which used its annual World Health Report in 2000 to perform a systematic global analysis. The methodology and the findings—with France emerging top and the US doing poorly—sparked a huge debate over performance measurement that has continued to this day. This report aims to add to that debate, but its focus will be narrower: we are looking primarily at population outcomes and spending, setting aside some of the other considerations, such as equity, affordability and patient satisfaction. We aim to return to these at a later date.

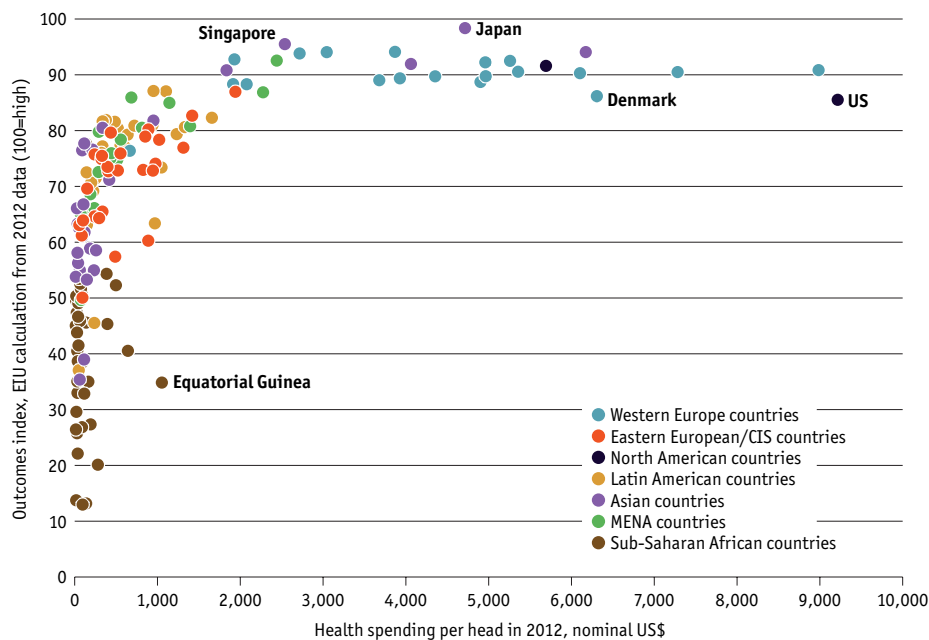
Even with the narrow aim of this current report, however, there are plenty of choices to be made over methodology. The work that The Economist Intelligence Unit has previously carried out in the area of value-based healthcare has made it clear that value is a vexed term. Even if we define it simply as outcomes versus spending, that still leaves huge questions over which outcomes will count and how spending will be counted. Trying to cover a large number of countries in the analysis does simplify decisions somewhat, however, in that there are a limited number of outcomes and spending measurements that are used consistently across the world.

We therefore relied on WHO data on disability adjusted life years (DALYs), health-adjusted life expectancy (HALE), and adult mortality in 2012, as well as life expectancy at age 60 in 2010 (latest available figures). We converted these

indicators into an index to show outcomes and then compared that with WHO spending data. A full description of the methodology is on page 7. We recognise that it is only one of many possible methodologies, and are happy to throw it open for debate.

The results of our analysis confirm that there is a high—but not complete—correlation between health expenditure and outcomes in the world’s healthcare system. The most generous healthcare systems have supported high life expectancy, low rates of ill-health and low mortality in European and Asian countries such as Switzerland, Singapore and, above all, Japan, which tops our outcomes index. Given that high health spending is a proxy for wealth, however, other factors are affecting the outcomes beyond the provision of healthcare services. These range from diet and sanitation to smoking rates and injury rates, with better living standards contributing to better outcomes in many of the wealthier countries.

Outcomes versus health spending



Sources: The Economist Intelligence Unit; World Health Organisation.

There is also, however, a trade-off between healthcare spending and outcomes, because the countries with the best outcomes have made those gains at considerable expense. Measured purely as outcomes versus cost (how much does each extra point on our outcomes index cost?), less advanced healthcare systems are better value than more advanced ones, even though the latter group delivers better overall outcomes.

This should not be surprising, given the law of diminishing returns in healthcare. The world's major healthcare gains over the past 50 years or so have come from cutting infant and child deaths, often through relatively low-cost measures such as vaccination. As life expectancy rises and disease profiles shift towards chronic disease, gains at older ages or for the seriously ill become hard-won, often entailing months of expensive care or high-priced medicines and medical technologies. The chart on page 3 shows how abrupt this transition from low-cost care to high-cost care is.

Tiered pricing policies by pharma companies and higher labour costs exacerbate these resourcing pressures in developed countries. There is also a danger that, as spending on healthcare rises even higher, the quality of provision saturates and may even decline. There comes a point where countries spend a great deal extra on care that benefits their citizens very little, if at all. Money may be spent inappropriately or in a vain effort to prolong human life, even when this is impossible. Meanwhile, the possible harms from treatment (medical error, unavoidable adverse events) increase linearly with healthcare activity, so the balance of benefit and harm will change.

In short, value in healthcare is a very different concept for low-income countries than it is for middle- or high-income countries. To enable us to draw out lessons from each stage of development, we ranked all 166 countries for:

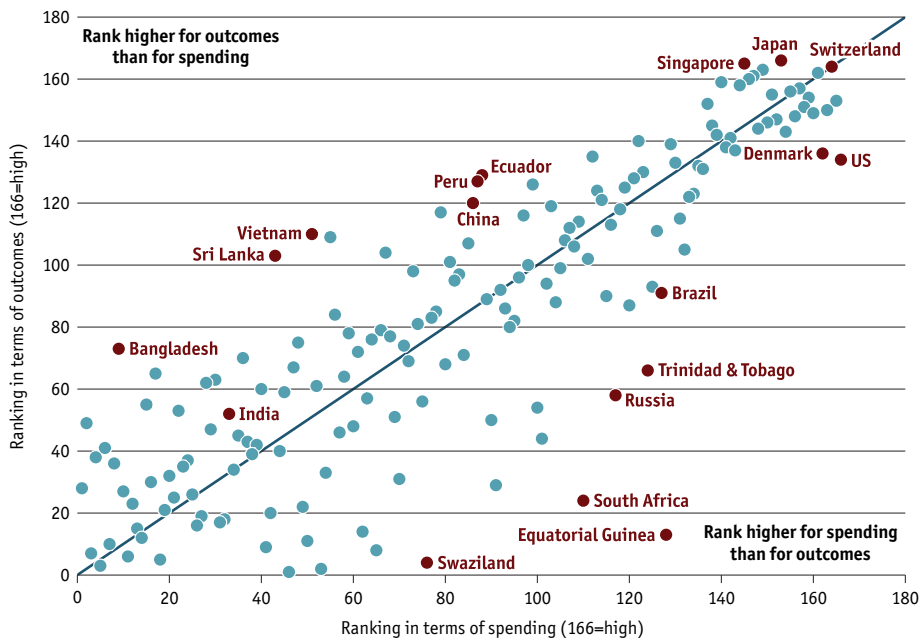
1. Overall outcomes (with a ranking of 166 indicating the best outcomes)
2. Spending per head (with a ranking 166 indicating the most expensive)

We then used the first of these rankings to divide the countries into six tiers according to their overall population health outcomes. Within each tier, where countries enjoy similar outcomes, we could then compare healthcare spending to see which countries had managed to achieve these at the lowest cost.

A more complete picture emerges when we try mapping one ranking against the other, as in the chart on page 5. This shows clearly the link between the two. It also highlights which countries are spending more than their peers for similar outcomes and which are spending less. Broadly speaking, those above the line are doing well in terms of the relationship between spending and outcomes, compared with their peers, while those below are doing poorly. We have also used the disparity between the two rankings to compare countries within each tier, as we discuss them in more detail in the sections below.

Given the complexity of healthcare systems—and the broader economies, demographics and political systems that surround them—it is not easy to explain all the findings in our index. This report is only intended to open up the debate. Nevertheless, some clear patterns emerge both from the trends and the outliers:

Outcomes rank versus spending rank



Sources: The Economist Intelligence Unit; World Health Organisation.

- In general, spending correlates with outcomes and value for money deteriorates as outcomes improve. But there are wide differences between the amounts that countries are spending on healthcare for similar outcomes. This may point to misdirection of spending or wastage in healthcare systems, as well as the effect of other factors such as diets and lifestyles.
- The regional spread in terms of outcomes is marked. Asia, Europe and North America dominate the higher tiers, with the Middle East, the former Communist belt and Latin America taking up the middle. The bottom three outcome tiers are almost entirely African, with a sprinkling of the poorer Asian countries. In these tiers, even those countries with recent oil wealth are struggling to catch up with the rest of the world.
- In terms of countries, Japan has the best outcomes in our analysis and also scores comparatively well on value for money. Singapore and South Korea achieve similar outcomes, however, at an even lower cost.
- The US, as its reputation suggests, emerges from our analysis as a poor-value healthcare system. Despite spending the most per head (US\$9,216 in 2012) of the 166 countries we covered, it ranks 33rd on our outcomes index, behind countries such as Lebanon and Costa Rica.
- The poorest outcomes are in Sierra Leone and Lesotho. Healthcare spending per head amounts to just US\$96 and US\$138, respectively, in these countries, and outcomes are poor, with particularly high infant and child mortality rates,

as well as high HIV prevalence. Other countries with similar HIV and infant mortality profiles, such as Mozambique and Malawi, still manage to achieve better outcomes with far lower spending levels.

- Several other countries also have low outcomes compared with their economic peers. One is South Africa, thanks to the AIDS epidemic. Russia's short life expectancy, particularly for men, drags it down. Among the wealthier countries, Denmark has disappointing outcomes, particularly for cancers.
- The greatest disparity between spending and outcomes, however, is in Equatorial Guinea. Even considering its moderately low healthcare budget, its outcomes are extremely poor, reflecting its inability to control communicable diseases such as malaria.

In the rest of this report, we will explore how outcomes and spending map against other attributes of healthcare systems, ranging from inputs such as doctor numbers and vaccinations to systemic factors such as health funding sources, as well as the effect of population trends. We will also discuss what countries are doing, or could be doing, to improve healthcare outcomes and the efficiency of their healthcare systems, as improving life expectancy and the rise of chronic diseases pushes up spending in both developed and developing countries alike.

The methodology

In choosing which data to use for this report, we were aware that our choices could bump countries up and down the rankings by several places. The results of our analysis should be read with this caveat in mind.

When it comes to outcomes, the simplest indicators are life expectancy and mortality rates, but they only reflect deaths, not the effects of ill-health during life. To overcome this problem, health economists have also developed several weighted indicators that include Quality-Adjusted Life Years (QALYs), Disability-Adjusted Life Expectancy (DALE), Disability Adjusted Life Years (DALYs), Healthy Life Years (HeaLY) and Health-Adjusted Life Expectancy (HALE)¹. Each has benefits and disadvantages as a measure of outcomes, and in the end our choice of DALYs and HALEs largely came down to expediency. These indicators, developed by the World Health Organisation (WHO), are available for nearly all the countries in the organisation's database. This makes them easy to weigh against the health spending data also published by the WHO.

DALYs show life-years lost to death or ill-health compared with Japanese life expectancy (chosen as being the longest in the world). A child who dies at birth, for example, may count as 82 years lost; a child who is disabled through injury or disease but lives a full lifespan would count as a proportion of that, depending on the extent of the disability. The results are then standardised to take into account the age profile of each nation. HALEs are broadly the reverse of this, measuring life expectancy adjusted for health, so they act as a useful check.

We therefore used DALYs and HALEs as our main outcomes measurement but, as befits the WHO's developing-country remit, both indicators weight young people and children more heavily than older ones. In effect, countries with older populations do not get much credit for keeping them alive and healthy. We therefore added in extra measures of average life expectancy at age 60 and adult mortality rates to enable us to distinguish at the top end of our outcomes scale. A composite outcome was generated from all four indicators and standardised into an outcomes index score, on a scale of 0 to 100 (with higher scores indicating better outcomes). We then ranked countries according to their score on this index, with the country with the worst outcomes score ranked number 1 and the country with the best outcomes score ranked 166.

Choices also had to be made over the health spending data. Analysts at The Economist Intelligence Unit usually use data from the Organisation for Economic Co-operation and Development (OECD) where available, to underpin the health spending forecasts offered by EIU Healthcare and tie them in with

¹ Weinstein & Stason, 1977; Murray & Lopez, 1996; Hyder, Rotllant & Morrow, 1998; Murray, Salomon & Mathers, 2000.

the accompanying economic data. For this exercise, however, we chose to use WHO data on spending as a percentage of GDP (which are different in some cases) for all countries, for consistency with the outcomes data. As usual, however, we relied on our own EIU data for nominal GDP and population size to generate per capita spending in US dollars, and then ranked countries according to this calculation, with 166 indicating the highest spending. We also calculated how much each country spent, in dollar terms, for each point they scored on the outcomes index.

Top tier by outcomes: Coping with ageing

	Health spend per head	Spend rank	Outcomes index	Outcomes rank	Cost per outcome point
	US\$	166=high	100=high	166=high	US\$
Japan	4,714	153	98.4	166	47.9
Singapore	2,538	145	95.5	165	26.6
Switzerland	8,928	164	95.1	164	93.9
Iceland	3,869	149	94.1	163	41.1
Australia	6,173	161	94.1	162	65.6
Italy	3,044	147	94.1	161	32.4
Spain	2,717	146	93.8	160	29.0
Cyprus	1,929	140	92.8	159	20.8
Israel	2,440	144	92.5	158	26.4
Sweden	5,258	157	92.5	157	56.8
France	4,959	155	92.2	156	53.8
New Zealand	4,061	151	91.9	155	44.2
Canada	5,692	159	91.6	154	62.1
Norway	8,985	165	90.8	153	98.9
South Korea	1,834	137	90.8	152	20.2
Austria	5,355	158	90.6	151	59.1
Luxembourg	7,282	163	90.5	150	80.5
Netherlands	6,103	160	90.3	149	67.6
Germany	4,964	156	89.8	148	55.3
Finland	4,354	152	89.7	147	48.5
Ireland	3,928	150	89.4	146	44.0
Malta	1,902	138	89.2	145	21.3
United Kingdom	3,679	148	89.0	144	41.3
Belgium	4,901	154	88.7	143	55.2
Portugal	1,913	139	88.3	142	21.7
Greece	2,077	142	88.3	141	23.5
Costa Rica	952	122	87.1	140	10.9
Chile	1102	129	87.0	139	12.7

The top tier of our 166-country outcomes index is dominated, by and large, by those countries that spend heavily on healthcare. Switzerland and Norway, for example, spend almost as much per head on healthcare as the US, although they achieve better outcomes for their money. Yet there is also a huge spread in Tier One in terms of per head spending, with the lowest spending country (Costa Rica) spending just one-ninth as much as the highest spending country.

The reasons for this difference are not obvious. All the Tier One countries have universal healthcare systems that promise (to a greater or lesser extent) to cover most health costs for their citizens, and most have relatively high labour costs, which account for a large proportion of their healthcare bill. All are making huge efforts to control those costs. They are scrutinising the cost-effectiveness of treatments closely, they are pushing for discounts from pharma companies and other suppliers, and in some cases changing the ways that hospitals, physicians and other providers are paid. Some countries, such as Ireland, are contemplating far-reaching reforms to centralise healthcare funding in order to ease financial pressures.

Moreover, many of the countries in Tier One face the considerable challenge of ageing populations, which threaten to increase healthcare costs while also cutting the working age population that can pay for or provide that care. As a result, many are looking to Japan for answers. Of the 166 countries covered by this report, Japan has the oldest population but it also has the highest healthcare outcomes. It scores highest for life expectancy at 60, second for HALE, and among the best on DALYs and adult mortality. Moreover, this Asian country has also managed to keep healthcare spending relatively low for a wealthy OECD country.

The question is whether other countries can or should follow Japan's example as they face up to the implications of their own ageing populations. Japan's achievement may come partly from outside the healthcare system, in the relatively healthy diets and lifestyles of its people. As for that increasingly elderly population, research suggests that one factor that keeps them living for longer is that they stay active—in many cases continuing to work into their 70s.

But Japan's healthcare system can also take some of the credit for its high outcomes and relatively low cost. Central pressures on pricing for health services and pharmaceuticals are strong, even compared with European countries. Japan has also established a long-term care insurance system, to which people have to contribute from the age of 40 onwards. Fourteen years later, the system is well-embedded and constitutes 65% of Japan's health spending.²

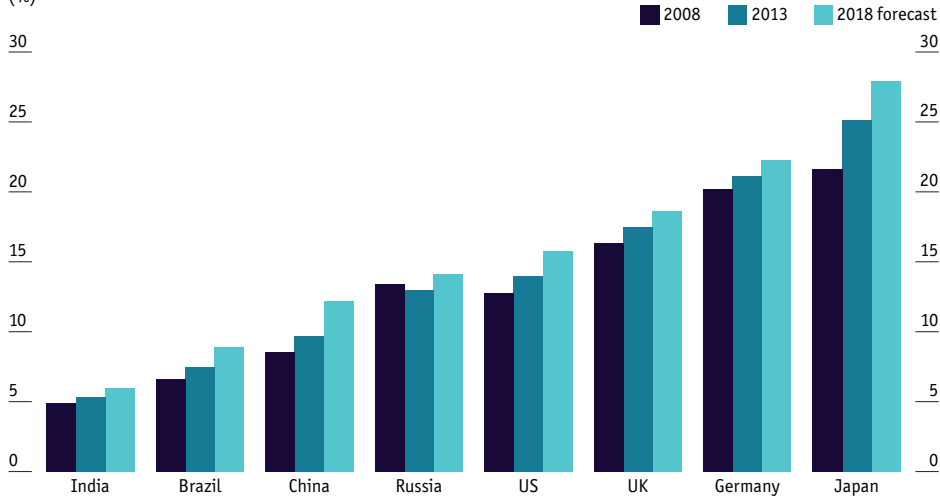
Indeed, OECD data suggest that the number of over-65s receiving long-term care at home has risen markedly since the long-term care insurance system was introduced, and stood at around 78% in 2011. This compares with just 42% in the US. That trend should free up hospital beds in Japan, where long-term stays in

² <http://www.imf.org/external/pubs/ft/wp/2014/wp14142.pdf>

hospital have been common. But it may also exacerbate the low rate of female participation in the Japanese labour force (currently just 48% of females over 15 are in work, compared with 57% in the US, according to the World Bank), with knock-on effects for the overall economy.

Percentage of population aged over 65

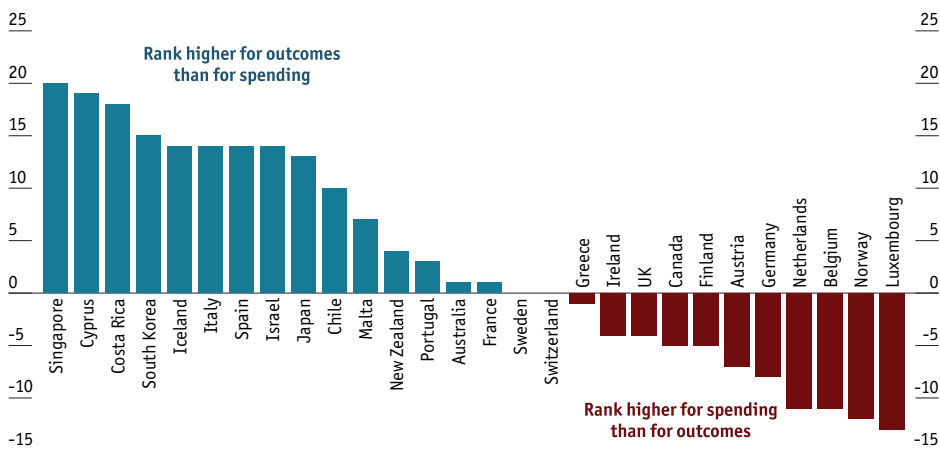
(%)



Source: The Economist Intelligence Unit.

Combined with its low birth rate, these trends mean that Japan faces a huge challenge as it tries to maintain its health outcomes. Just over 25% of the population were aged 65 or over in 2013, up from 12% in 1990 and The Economist Intelligence Unit expects the proportion to rise to 28% by 2018. This demographic structure takes a financial toll—health spending rose sharply in 2000 when the long-term care system was introduced—and health spending in Japan will continue to outstrip GDP growth in the forecast period, stretching the country’s creaking public finances.

Ranking differences: outcomes versus spending



Sources: The Economist Intelligence Unit; World Health Organisation.

Moreover, Japan is far from the lowest spender in our top tier, with Cyprus, Singapore and Costa Rica all faring better in terms of the balance between spending and outcomes. The last country in particular has managed to build up one of Latin America's most impressive healthcare systems on a remarkably limited budget. With almost universal insurance coverage in place, it limits out-of-pocket payments for health and avoids catastrophic payments almost entirely. But it operates through a number of rationing mechanisms that set out the package of health services and drugs that each person can expect and allocates resources according to local population needs.

South Korea performs well too: although its outcomes are poorer than Japan's, it also spends just over one-third as much per head. The country has benefited from a universal healthcare system since 1989, but benefits from a steady supply of low-cost healthcare workers from elsewhere in the region. It was also the first Asian country to introduce economic evaluation for drugs, while patient co-payments are high (albeit with a cap of around US\$5,000 year) and act as a deterrent from seeking care. Israel, another country that ranks higher for outcomes than for spending, also relies on co-payments (as well as private insurance) to supplement its mandatory health insurance system and control costs. Both countries also face challenges, however, over the financial sustainability of their healthcare systems.

Surprisingly, the UK and Germany, two countries that have pushed through cost-cutting policies in the past few years, rank higher for spending than for outcomes. Both countries have built up well-respected healthcare systems over decades, but these have come under increasing strain over the past few years as a result of population ageing and economic constraints. Efforts to contain costs, through wage restraint, co-payments, or pharma pricing regulations, have proved controversial with many healthcare workers, consumers and businesses, in some cases leading to policy reversals. Germany, for example, backtracked on a rise in co-payments. It is also under pressure to revise its value-based pricing scheme for pharmaceuticals, while the UK has scaled back its plans.

Dissatisfaction with patient outcomes is also spreading: it is noticeable that both countries are towards the bottom of our Tier One outcomes. Both are dragged down, moreover, largely by their poor scores on life expectancy at aged 60, suggesting they face a major challenge here as their populations age. All the Tier One countries, however, will need to scrutinise their policies again as they try to balance the costs of healthcare against public expectations that their health will carry on improving.

Tier Two by outcomes: The rise of non-communicable diseases

	Health spend per head	Spend rank	Outcomes index	Outcomes rank	Cost per outcome point
	US\$	166=high	100=high	166=high	US\$
Slovenia	1,941	141	87.0	138	22.3
Qatar	2,275	143	86.9	137	26.2
Denmark	6,307	162	86.2	136	73.2
Lebanon	684	112	85.9	135	8.0
United States	9,216	166	85.5	134	107.8
Kuwait	1,144	130	85.0	133	13.5
Czech Republic	1,419	135	82.7	132	17.2
Bahamas	1,657	136	82.3	131	20.1
Bahrain	958	123	82.1	130	11.7
Ecuador	376	88	81.9	129	4.6
Brunei Darussalam	951	121	81.8	128	11.6
Peru	338	87	81.7	127	4.1
Cuba	484	99	81.6	126	5.9
Barbados	941	119	81.0	125	11.6
Panama	721	113	80.9	124	8.9
United Arab Emirates	1,394	134	80.8	123	17.3
Uruguay	1,331	133	80.6	122	16.5
Saudi Arabia	813	114	80.5	121	10.1
China	337	86	80.5	120	4.2
Colombia	521	103	80.4	119	6.5
Croatia	891	118	80.2	118	11.1
Tunisia	291	79	79.8	117	3.6
Bosnia and Herzegovina	437	97	79.6	116	5.5
Argentina	1,232	131	79.4	115	15.5
Mexico	639	109	79.3	114	8.1
Poland	852	116	78.9	113	10.8
Oman	557	107	78.4	112	7.1
Estonia	1,020	126	78.4	111	13.0

One of the most remarkable aspects of our Tier Two rankings is the presence of the US and Denmark, comparatively high-spending countries that perform worse on outcomes than most of their peers. The US healthcare system is by far the most expensive in the world, but its inefficiency is also legendary. High US healthcare expenditure is partly explained by problems in incentive structures for healthcare providers and the system of relatively fragmented private coverage, which reduces negotiating power and raises overheads. Many of the world's other wealthy countries have central negotiations with healthcare providers or set prices centrally, which gives them more leverage to push down costs.

There are other, less obvious, reasons for the cost of the US healthcare system, however. The US, for example, spends less on other social services that help to improve health outcomes in other wealthy countries. On average in OECD countries, for every US\$1 spent on healthcare, a further US\$2 is spent on social services. However, in the US, for every US\$1 spent on healthcare, just US\$0.55 is spent on social services. That miserly spending means that, when they get sick, elderly people often have no choice but to turn to their doctors or even go into hospital.

The reforms currently being implemented in the US will not solve those problems but it may well lead to Medicaid, the fund for lower-income Americans, having more negotiating power with providers; its hospital-based purchasing programme is intended to bring down costs and improve population health by linking provider payments to outcomes. Mandatory insurance (either personal or through employers) should also help to improve the health of previously uninsured groups, helping to raise average outcomes.

Denmark, arguably, has a more complex challenge because the causes of its relatively poor outcomes are more difficult to fathom. One factor it shares with the US is the high toll of chronic disease, notably cancer. Cancer incidence rates in Denmark and the US are among the highest in the world, at 338.1 and 347 per 100,000 people in 2012, respectively, according to the WHO, compared with 217.1 in Japan (all age-standardised). Moreover, age-standardised cancer mortality rates in Denmark are higher than in either country. Heart disease is an even bigger killer, perhaps reflecting lifestyle factors: smoking rates are high, while diets are generally high fat.

Denmark's new healthcare strategy, announced as part of its 2015 budget, sets aside Dkr5bn (US\$900m) in investment for 2015-18 in order to fund improvements in the treatment of chronic diseases, particularly cancer. The challenge will be to get maximum value for this money; Denmark is also trying to limit the amount of pharmaceutical spending that is devoted to higher-priced cancer drugs, in order to fund care that it deems more cost-effective. Yet Denmark already has a draconian approach to reimbursement that ensures it spends a very low proportion of its healthcare budget on pharmaceuticals—a fact that some blame for its poor record on some diseases.

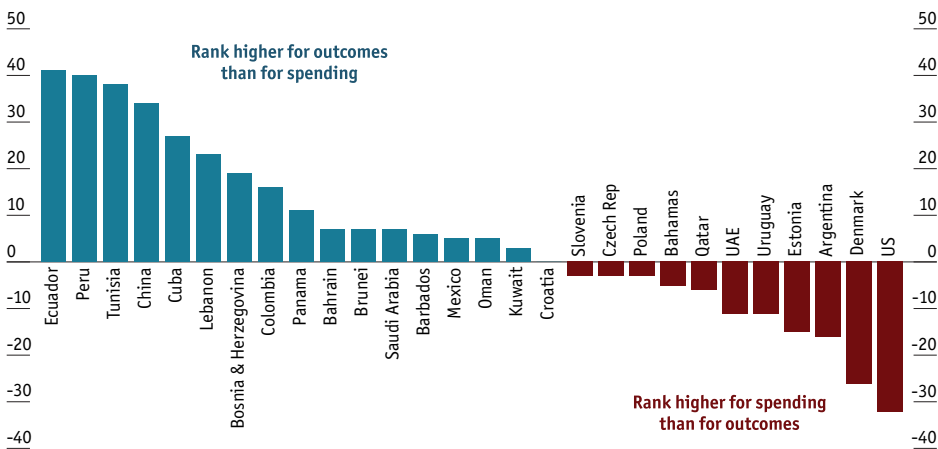
Even in developing markets, cancer and heart disease are becoming the main causes of death, with their spread assisted by rapid urbanisation, sedentary lifestyles, changing diets and rising obesity levels. In China, for example, cancer now accounts for 28% of deaths while heart disease accounts for 21%, according to government statistics. So far the country’s healthcare system has managed to keep its health spending relatively modest: it is among the lowest spenders in our Tier Two group.

Yet as a recent Economist Intelligence Unit report³ made clear, there are huge disparities between different regions. This takes a toll on the economy as well as on people’s health: part of the rationale behind China’s efforts to improve access to health is that the government wants to free up the savings that Chinese families routinely squirrel away to fund health catastrophes. To achieve this, the government has initiated a remarkable expansion of the health insurance system: the proportion of the population covered by some form of medical insurance is now over 96%, compared with just 45% in 2006.

The government is also undertaking other reforms to improve outcomes at the lowest possible cost. It is trying to encourage private investment in hospitals, while at the same time increasing its scrutiny. It is bearing down heavily on medicine and medtech costs, albeit mostly through small pilot programmes that have yet to be rolled out nationwide. Perhaps more urgent, however, are its efforts to control the pollution that has accompanied the country’s rapid economic transformation. Officials say birth defects rose by 70% between 1996 and 2010, mainly as a result of pollution. If controls are implemented—and China goes ahead with a mooted ban on public smoking—then it may manage to avert a huge rise in chronic diseases as its population ages.

Non-communicable diseases (NCDs), then, are one of the biggest challenges faced by our Tier Two countries, and an area where they are found wanting in comparison with Tier One countries. A far higher proportion of the people who

Ranking differences: outcomes versus spending



Sources: The Economist Intelligence Unit; World Health Organisation.

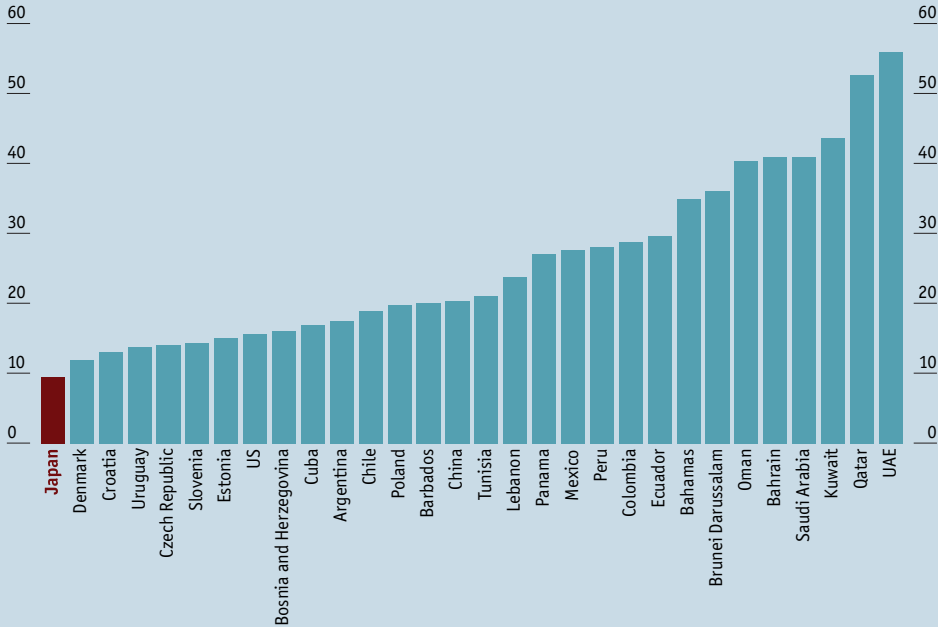
³ China Healthy Province Index. The full report is available at www.eiu.com/chpi2014

die from NCDs in most Tier Two countries are under the age of 60, according to the WHO (see chart). Preventing these diseases, diagnosing them early, and then treating them successfully will be the best way to improve outcomes. Yet jumping to the next level in terms of outcomes is unlikely to be a cheap exercise.

The financial and physical toll of NCDs

The worldwide rise in life expectancy, while welcome, means that NCDs are becoming the main causes of death even in developing markets, with their spread assisted by urbanisation, sedentary lifestyles, changing diets and

NCD deaths aged under 60 as % of all NCD deaths



Source: World Health Organisation

rising obesity levels. China and India now have the largest number of diabetes sufferers in the world, at more than 98m and 65m, respectively. Globally, the number is expected to rise from the current 382m to 592m by 2035, according to the International Diabetes Federation (IDF).

Research into treatments is delivering some promising results. The Pharmaceutical Research and Manufacturers of America (PhRMA, a US pharma association) estimated last year that 180 new diabetes drugs were in late-stage development. As for cancer, a new generation of armed antibodies are helping to deliver cancer therapies to cells in a more targeted way, while vaccines have

delivered protection against some cancers. Further ahead, stem cell research, nanotechnology and gene therapy may offer additional hope.

Even when breakthroughs come, however, they present a challenge for policymakers and healthcare payors. Many new drugs extend life expectancy by only a few months and prices can be high, even when tiered to take into account national incomes. Although India currently spends just US\$84 for each person with diabetes, compared with US\$9,800 in the US, this still implies a total cost of nearly US\$5.5bn a year. The IDF estimates total global expenditure on diabetes at US\$548bn in 2013. Other NCDs are at least as expensive. With the US expected to spend US\$200bn on caring for the 5.4m Americans with dementia, the government last year issued a National Alzheimer's Plan to reboot research efforts.

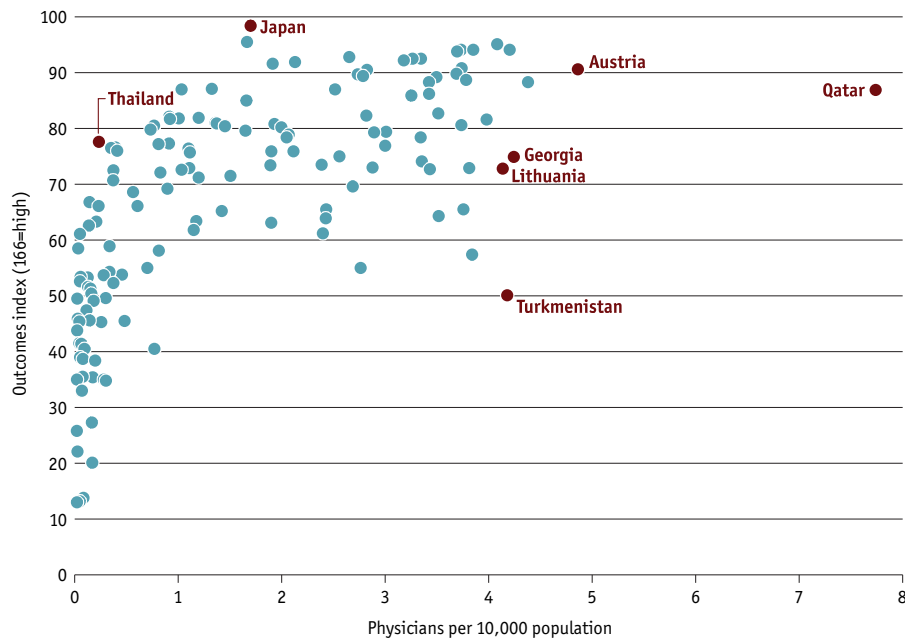
The rising cost of treatment will compel a more intense focus on disease prevention, notably through public health programmes. Efforts to reverse the rise in obesity, for example, are intensifying, amid encouraging results from anti-tobacco campaigns. Pollution, too, is coming under increasing scrutiny, particularly in developing markets. According to a recent WHO report, the Western Pacific region saw 2.8m deaths linked to air pollution in 2012. Yet the continued pressure to maintain economic growth suggests the health effects may get worse before they get better.

Tier Three by outcomes: The need for good staff

	Health spend per head	Spend rank	Outcomes index	Outcomes rank	Cost per outcome point
	US\$	166=high	100=high	166=high	US\$
Vietnam	116	51	77.7	110	1.5
Cabo Verde	139	55	77.6	109	1.8
Suriname	553	106	77.3	108	7.2
Dominican Republic	336	85	77.2	107	4.4
Venezuela	607	108	77.0	106	7.9
Slovakia	1,313	132	76.9	105	17.1
Thailand	214	67	76.6	104	2.8
Sri Lanka	90	43	76.5	103	1.2
Turkey	665	111	76.4	102	8.7
Jamaica	322	81	76.0	101	4.2
Libya	444	98	75.9	100	5.8
Serbia	553	105	75.9	99	7.3
Albania	240	73	75.7	98	3.2
Macedonia	329	83	75.5	97	4.4
Jordan	433	96	75.0	96	5.8
Georgia	324	82	74.9	95	4.3
Iran	515	102	74.8	94	6.9
Hungary	976	125	74.1	93	13.2
Romania	397	92	73.5	92	5.4
Brazil	1,049	127	73.4	91	14.3
Latvia	827	115	73.0	90	11.3
Paraguay	379	89	72.9	89	5.2
Bulgaria	522	104	72.9	88	7.2
Lithuania	945	120	72.8	87	13.0
Azerbaijan	407	93	72.7	86	5.6
Algeria	289	78	72.6	85	4.0
Nicaragua	144	56	72.5	84	2.0
Belize	285	77	72.1	83	4.0

Tier Three performers are on the steepest slope of our cost/outcomes curve (see page 3). This is the point where judicious spending on healthcare can have maximum impact, but it is also the point where spending can begin to outrun outcomes. For many of the countries in this group, investing in healthcare largely means investing in physicians and other medical staff. Unlike for many of the other inputs we tested for this report (such as hospital beds), the correlation between outcomes and physician numbers seems fairly clear, although it is not perfect (see chart).

Outcomes versus physicians



Sources: The Economist Intelligence Unit; World Health Organisation.

Yet many countries are struggling to find the right balance between keeping wage bills affordable and retaining healthcare staff. Global recruitment of medical staff, with richer countries attracting those trained in poorer countries, has led to a brain drain that shows no sign of abating. Even some middle-income countries are now starting to rely on attracting healthcare workers from elsewhere to meet the demand for care.

In Brazil, for example, the government was pushed into boosting healthcare spending after mass protests in June 2013. In response, the government introduced a programme called Mais Médicos (more doctors) to hire local and foreign doctors to work in poor and remote areas where there are shortages. By mid-2014 around 15,000 new medics had been enrolled, and in August the programme was extended.

Yet over three-quarters of these new doctors had to be flown in from Cuba to

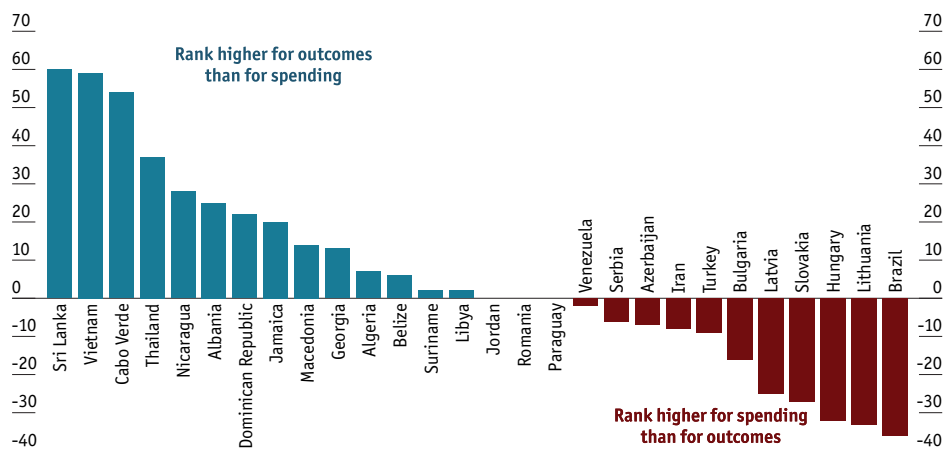
make up for a shortfall of locals. A June 2014 poll, conducted by Brazil’s Federal Medical Council, showed that 93% of those surveyed still see Brazil’s public and private healthcare systems as either very bad or mediocre. To come up with a more sustainable solution, Brazil’s Ministry of Health has been trying to shift medical training away from its traditional emphasis on specialisms towards a focus on family doctors, but progress has been slow.

Hungary faces a similar problem. It has one of the highest specialist-to-population ratios in the OECD, but the ratios for doctors and nurses are relatively low. Many healthcare professionals, especially nurses, have emigrated to other EU countries offering higher wages. Others have opted to work in the growing private sector, catering mainly for wealthy locals and for healthcare tourists from Austria and elsewhere.

The government is now trying to stop the exodus through a carrot-and-stick approach. On the one hand, it is improving pay and conditions; it is also contemplating giving hospital chiefs more autonomy to adjust work contracts. As of 2012, however, the state will only fund medical training if students sign contracts stating that they will work in Hungary for 7-15 years after receiving their diploma. Any who leave must repay the cost of their education. Nevertheless, The Economist Intelligence Unit expects recruitment problems in the system to continue.

Yet the focus on recruiting doctors in Brazil and Hungary needs to proceed carefully, because beyond a certain level, the link between physicians and outcomes starts to become less clear. As the chart shows, Tier Three countries such as Georgia and Thailand achieve similar outcomes with very different numbers of physicians. Like Cuba (which made it into Tier Two), Vietnam’s former Communist regime built its legitimacy partly on the provision of public healthcare and it retains a high level of outcomes despite relatively low spending. Even in

Ranking differences: outcomes versus spending



Sources: The Economist Intelligence Unit; World Health Organisation.

Vietnam, however, pressures are starting to build as the available funding fails to keep pace with the need to update healthcare infrastructure and retain good staff.

The current Vietnamese government is determined to reverse that trend. Under the Health Insurance Law, which came into effect in 2009, it has been aiming for universal health insurance coverage by 2014. With coverage at just 64% in 2012, it is unlikely to have reached that goal but insurance is expanding rapidly. At the same time, a process of political decentralisation has allowed provinces to raise funds that can be channelled into new hospitals. Even so, many healthcare staff (and the institutions that employ them) still rely on informal payments from patients—a practice the government is trying to stamp out without raising hospital wages too sharply.

Outcomes and inputs

The complexity of healthcare systems makes it difficult to determine which factors are affecting outcomes directly and even harder to determine which represent the best value for money. There are simply too many variables, and making such comparisons internationally adds another layer of complexity. Nevertheless, the task should start to become easier over the next decade or more, as many countries introduce more systematic reviews of cost-efficiency in order to move towards value-based healthcare.

So far this trend towards value-based healthcare primarily affects healthcare procedures and pharmaceuticals, which now have to go through a process of health technology assessment in countries such as the UK in order to qualify for reimbursement or for use within national healthcare systems. Yet the process is slowly being extended to medical devices and to wider healthcare investments, such as building hospitals, stepping up recruitment, or increasing wages. Although methods are being shared internationally—the UK's National Institute for Health and Care Excellence (NICE) works with dozens of countries, including China—most of the resulting cost-effectiveness assessments are for one-country use only.

For the purposes of this report, however, we thought it would be interesting to test whether various factors affecting healthcare systems did correlate with our outcomes measures, if only on a scattergraph. The table below shows the results:

Correlation versus outcomes index		
	EIU assessment	Correlation coefficient (linear R2 unless otherwise stated)
Doctors per 10,000 population	Medium-high	0.4317 (R2 log=0.6371)
Hospital beds per 10,000 population	Medium	0.2545
Nursing staff per 10,000 population	Medium	0.2489 (R2 log=0.34)
Immunisation rates for one-year olds (full programme)	Medium-low	0.1664
Smoking rates per 10,000 adults (any tobacco product)	Low	0.0977
Out of pocket spending, % of health spending	Low	0.0942

Tier four by outcomes: Smoking guns

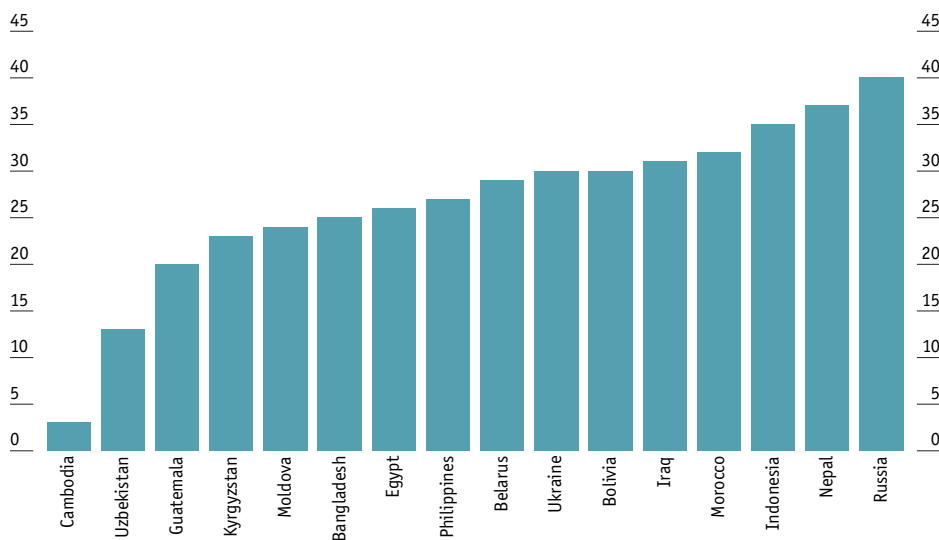
	Health spend per head	Spend rank	Outcomes index	Outcomes rank	Cost per outcome point
	US\$	166=high	100=high	166=high	US\$
Mauritius	425	95	71.6	82	5.9
El Salvador	254	74	71.5	81	3.6
Malaysia	417	94	71.2	80	5.9
Honduras	200	66	70.7	79	2.8
Armenia	151	59	69.6	78	2.2
Guatemala	224	68	69.2	77	3.2
Morocco	189	64	68.6	76	2.8
Indonesia	106	48	66.8	75	1.6
Iraq	237	71	66.1	74	3.6
Bangladesh	27	9	66.1	73	0.4
Egypt	161	61	65.5	72	2.5
Belarus	336	84	65.5	71	5.1
Syrian Arab Republic	70	36	65.2	70	1.1
Moldova	240	72	64.6	69	3.7
Ukraine	295	80	64.3	68	4.6
Uzbekistan	101	47	63.9	67	1.6
Trinidad and Tobago	968	124	63.4	66	15.3
Nepal	36	17	63.3	65	0.6
Bolivia	148	58	63.1	64	2.3
Tajikistan	56	30	63.1	63	0.9
Cambodia	51	28	62.6	62	0.8
Philippines	119	52	61.8	61	1.9
Kyrgyzstan	86	40	61.2	60	1.4
Bhutan	96	45	61.1	59	1.6
Russia	888	117	60.3	58	14.7
Fiji	185	63	58.9	57	3.2
Timor-Leste	258	75	58.5	56	4.4
Pakistan	34	15	58.1	55	0.6

Russia’s terrible collapse in life expectancy over the past 25 years is reflected in its appearance low down in our outcomes index, below countries such as Indonesia and even Bangladesh. Life expectancy at birth for Russian males tumbled to below 60 years during the 1990s, as economic upheaval and alcoholism took a toll. Infectious diseases such as tuberculosis, hepatitis and HIV/AIDS, and traditional killers such as heart disease and cancer, combined with a sharp rise in accidents and even homicides.

Even now, there has been only a slight rebound in life expectancy, and Russia faces new problems, such as a rise in the HIV rate and the spread of multi-drug resistant tuberculosis. Moreover, its population is ageing rapidly thanks to its low birth rate. Recent governments have pushed through reforms intended to raise healthcare spending—notably with the 2010 introduction of an employment-based social insurance system—yet one-third of spending is still out-of-pocket. Russia has therefore moved from having a fairly effective healthcare system to one that is struggling, particularly in relation to adult males.

Even so, the latest Healthcare in Transition Report from the WHO⁴ notes that although the elimination of treatable causes of death could add 1.7 years to male life expectancy in Russia, the main problem is alcoholism. Tackling this will entail a programme of healthcare education, social support and (perhaps) more consistent legal measures. Russia already has some of the world’s toughest drink-driving penalties, yet the chances of being prosecuted remain low. A better model is the anti-tobacco legislation implemented in 2012-13, which is already estimated to have cut smoking rates by 6% because of effective monitoring.

Smoking rates, % of adult population*



* Any tobacco product
Sources: The Economist Intelligence Unit; World Health Organisation.

⁴ http://www.euro.who.int/__data/assets/pdf_file/0006/157092/HiT-Russia_EN_web-with-links.pdf?ua=1

Indonesia is also stepping up its efforts to reduce smoking, although it is a laggard in this respect. There are few public smoking bans, tobacco taxes are low, and advertising is generally unrestricted. In June, however, the country

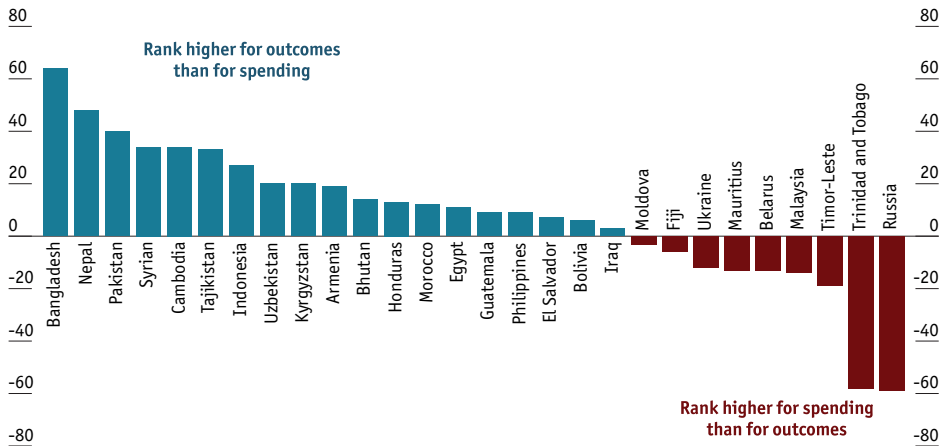
passed legislation requiring 40% of all cigarette packets to be covered by health warnings. Although (as in many countries) the government relies on tobacco tax revenue, the high smoking rate is seen as undermining the push towards universal healthcare, a key government policy.

In early 2014, the country merged its four previous healthcare funds into one, the Jaminan Kesehatan Nasional, with the aim of providing universal access to primary care by 2019. The fund already covers nearly 122m people out of a population of 250m, with the remainder receiving funding from local governments. The Philippines is another Tier Four country that is aiming for a universal healthcare system, at least for primary care. In June 2013, the government approved a Universal Healthcare Law, which promises health insurance for all Filipinos, especially the very poor.

One of the best performers in Tier Four, however, is Bangladesh, which has managed to push up life expectancy sharply in the past 40 years or so, as well as pushing down infant mortality. According to a 2013 report in *The Lancet*⁵, Bangladesh’s “unusual success” has been partly due to a policy focus on maternal and infant health, including measures to educate women. Tuberculosis treatment and immunisation have also been a priority.

Now, however, the country’s still-weak healthcare system faces additional challenges in the rise in NCDs. Malnutrition now co-exists with rising obesity rates, while anti-tobacco policies are taking centre stage as cancer incidence rises. According to the WHO, tobacco-related illness already costs Bangladesh US\$500m. Tax revenue from the industry comes in at US\$305m a year, however, presenting policymakers with an immediate dilemma as they look for healthcare funding⁶.

Ranking differences: outcomes versus spending



Sources: The Economist Intelligence Unit; World Health Organisation.

⁵ <http://www.thelancet.com/series/bangladesh>

⁶ <http://www.ncbi.nlm.nih.gov/pubmed/24163419>

Tier five by outcomes: The needle's point

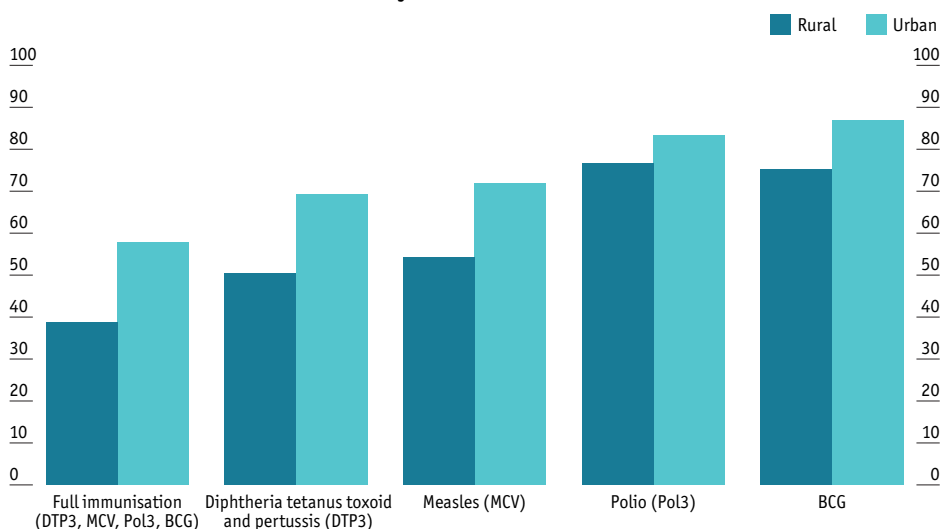
	Health spend per head	Spend rank	Outcomes index	Outcomes rank	Cost per outcome point
	US\$	166=high	100=high	166=high	US\$
Kazakhstan	490	100	57.4	54	8.5
Laos	41	22	56.3	53	0.7
India	62	33	55.0	52	1.1
Mongolia	232	69	55.0	51	4.2
Botswana	385	90	54.3	50	7.1
Myanmar	13	2	53.8	49	0.2
Sudan	157	60	53.7	48	2.9
Senegal	51	29	53.4	47	1.0
Solomon Islands	147	57	53.3	46	2.8
Rwanda	66	35	52.6	45	1.3
Namibia	498	101	52.3	44	9.5
Mauritania	76	37	51.6	43	1.5
Ghana	85	39	51.3	42	1.7
Madagascar	19	6	50.4	41	0.4
Turkmenistan	94	44	50.1	40	1.9
Yemen	76	38	49.6	39	1.5
Ethiopia	17	4	49.5	38	0.3
Kenya	44	24	49.1	37	0.9
Gambia	25	8	47.4	36	0.5
Tanzania	41	23	46.6	35	0.9
Liberia	64	34	45.9	34	1.4
Djibouti	139	54	45.6	33	3.0
Comoros	37	20	45.6	32	0.8
Guyana	237	70	45.5	31	5.2
Benin	34	16	45.4	30	0.7
Gabon	395	91	45.3	29	8.7
Eritrea	13	1	45.0	28	0.3
Niger	28	10	43.8	27	0.6

Tier Five includes the lowest spender on healthcare in our 166-country survey, Myanmar, as well as several countries that spend a lot more for similar outcomes. Getting hold of healthcare data is a major issue for many of the governments here, however. Myanmar has 61m people, yet around 70% of them live in rural areas with poor communications. In 2012, around a year after its former military junta was dissolved, the Ministry of Health for the new civilian government began a Health System Assessment supported by the WHO, in order to determine how well healthcare services were working and where the biggest gaps were.

One thing that Myanmar already had in place, however, was an immunisation programme that included an eradication plan for polio, begun in 1996, as well as one for measles and neonatal tetanus. In 2012, the immunisation programme was expanded with the introduction of a second routine measles vaccine as well as the Hib (Haemophilus Influenza type B) vaccine. By March 2014, the polio plan had declared victory over the disease; the target date for eradication of measles and rubella is 2020.

Vaccination is widely acknowledged to be one of the most cost-effective ways of improving healthcare outcomes, and global vaccine sales have risen rapidly in the past decade or so. From just US\$5bn in 2000, the global market has ballooned to US\$24bn in 2013, according to Miloud Kaddar, senior advisor to the WHO. He expects global spending to rise to US\$100bn by 2025, with most of that growth coming from developing markets.⁷

India's immunisation rates in 2005, % of 1-year olds



Source: The World Health Organisation.

As far as poorer countries are concerned, a major change in the market came in 2000, when the Global Alliance for Vaccines and Immunisations (GAVI) was established to assist the poorest countries. GAVI has found ways to increase

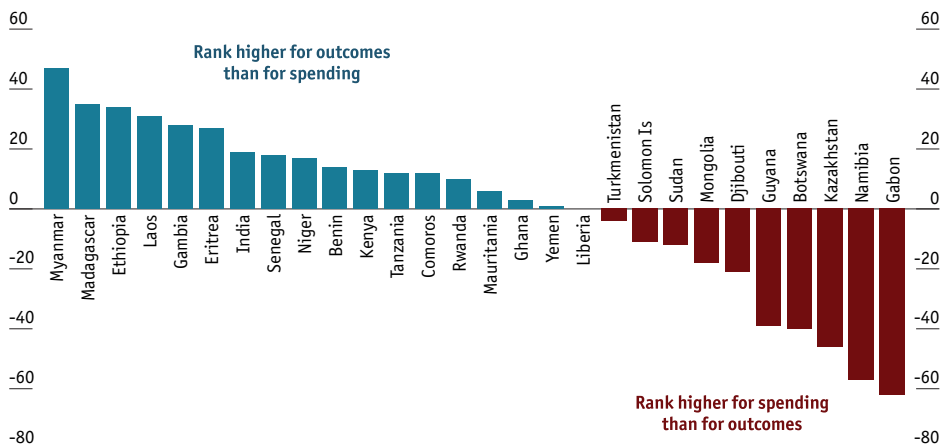
⁷ http://who.int/influenza_vaccines_plan/resources/session_10_kaddar.pdf

the affordability of both existing vaccines, such as the diphtheria, tetanus and pertussis (DTP3) vaccine, and newer, more expensive ones, such as those that protect against rotavirus. In the past, low and middle-income countries waited years for off-patent, affordable versions of vaccines.

Among other successes, the GAVI Alliance has contributed to recent gains in DTP3 coverage among African countries, most of which are receiving its support. Coverage of DTP3 in Africa rose to 71% in 2011 from just 49% two decades previously, according to WHO figures. GAVI has also helped to reduce the time-lags between immunisation of children in developing and developed countries to around 4-5 years, compared with up to 20 years previously.

GAVI has helped to extend demand for vaccines, which has in turn stimulated supply. One difficulty, however, comes when countries are no longer poor enough to qualify for GAVI rates and start to graduate to market prices. Although vaccine providers led the way in terms of tiered pricing (whereby countries pay prices according to their average wealth levels), they are coming under pressure to drop their prices still lower. Large manufacturers warn that, if prices become too low, they will be forced out of markets—as has happened in the past—yet the danger is that countries will skimp on their immunisation programmes if costs are too high.

Ranking differences: outcomes versus spending



Sources: The Economist Intelligence Unit; World Health Organisation.

A recent report by Unicef, the WHO and the World Bank concluded that although 2.5m children’s lives are saved each year by immunisation, a further 1.5m could be saved. Rates of immunisation for diseases such as pneumococcal and rotavirus diseases are still far lower than they should be. India, which now manufactures many of the world’s generic vaccines, is one country that has come in for criticism over its patchy rollout of its universal immunisation programme. In July it finally added four new vaccines to the programme—rotavirus, rubella, Japanese encephalitis and an injectable polio vaccine—but the challenge will be to ensure that they reach rural areas.

India's new government seems to recognise the urgency. Indeed, there is only one measure that could be seen as a higher priority for India and similar countries: sanitation. Of the 1bn people in the world who lack it, India accounts for 600m. The dearth of toilets, and a habit of open-air defecation, means that diseases spread quickly. It also leads to diarrhoea, with the attendant risks of dehydration and malnutrition. The government recently set a goal of ending open-air defecation by 2019.

Bottom tier by outcomes: Could do much better

	Health spend per head	Spend rank	Outcomes index	Outcomes rank	Cost per outcome point
	US\$	166=high	100=high	166=high	US\$
Togo	46	25	41.5	26	1.1
Burkina Faso	40	21	41.4	25	1.0
South Africa	643	110	40.5	24	15.9
Guinea	31	12	40.5	23	0.8
Papua New Guinea	114	49	39.0	22	2.9
Mali	37	19	38.7	21	1.0
Congo	88	42	38.4	20	2.3
Haiti	49	27	37.1	19	1.3
Cameroon	62	32	35.5	18	1.8
Afghanistan	61	31	35.4	17	1.7
Uganda	47	26	35.1	16	1.3
Malawi	32	13	35.0	15	0.9
Nigeria	165	62	35.0	14	4.7
Equatorial Guinea	1,053	128	34.8	13	30.2
Guinea-Bissau	34	14	33.0	12	1.0
Zambia	116	50	32.9	11	3.5
Burundi	20	7	29.6	10	0.7
Côte d'Ivoire	88	41	27.9	9	3.2
Angola	192	65	27.3	8	7.0
DRC	15	3	26.4	7	0.6
Chad	29	11	25.8	6	1.1
Mozambique	36	18	22.1	5	1.7
Swaziland	280	76	20.1	4	13.9
Central African Republic	18	5	13.8	3	1.3
Lesotho	138	53	13.2	2	10.5
Sierra Leone	96	46	13.0	1	7.4

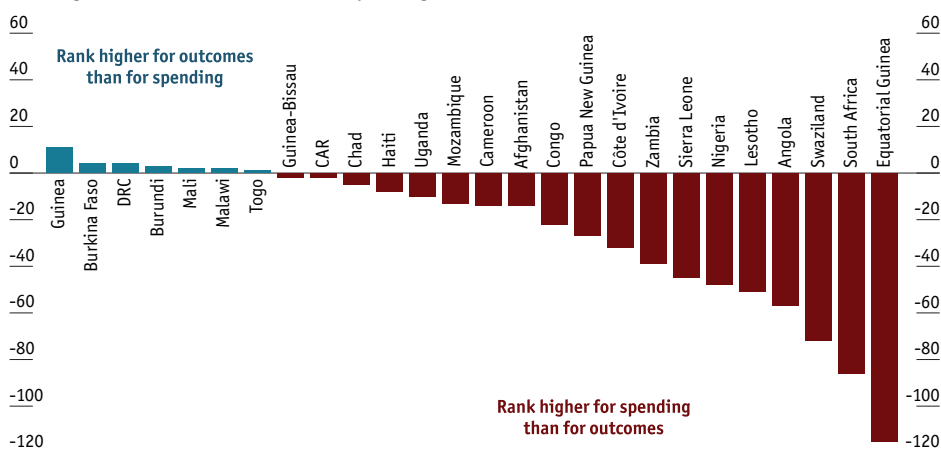
The countries in our lowest tier in terms of outcomes should, by rights, be those spending the least on healthcare. They are not. Although some countries, such as the Democratic Republic of the Congo (DRC) have extremely low healthcare budgets, others are relatively high spenders. The most well-known example is South Africa, where the HIV/AIDS crisis has sent life expectancy steadily backwards for the past two decades. In 2012, some 6.1m South Africans (11.6% of the population) were infected with HIV, resulting in high mortality from opportunistic diseases such as tuberculosis.

AIDS is particularly acute throughout Southern Africa, but was made worse in South Africa by government policies. During the presidency of Thabo Mbeki (1999-2008), officials rejected the link between HIV and AIDS and the efficacy of antiretroviral (ARV) drugs. In recent years, however, the situation has improved. Efforts to prevent mother-to-child transmission of HIV in recent years cut infant mortality from 53.7 per 1,000 live births in 2002 to an estimated 32.4 per 1,000 live births in 2013.

Jacob Zuma, who assumed office as president in May 2009, set a target of making ARVs available to 80% of those in need by the end of 2012 (from a starting point of 40-50%), while extending testing and prioritising treatment for pregnant women and children. New infection rates have started to decline, although it is still early days. Progress should be helped, however, by South Africa's plans to roll out a National Health Insurance scheme, funded through taxes and employer contributions, in order to ensure that all South African citizens have access to essential healthcare. It may be some time before the increase in funding leads to a marked improvement in healthcare outcomes, however.

Part of the problem for many of the countries in our lowest Tier is simple geography: their latitude put them in a high-risk zone for tropical diseases. That

Ranking differences: outcomes versus spending



Sources: The Economist Intelligence Unit; World Health Organisation.

then causes a vicious cycle as disease weighs on economies and on healthcare spending. The WHO calculates that malaria alone costs Africa around US\$12bn a year in medical costs and loss of labour. Yet many of our Bottom Tier countries still spend more heavily than their poor outcomes would suggest. Their natural, economic and historical disadvantages are often exacerbated by political incompetence, corruption and in some cases armed conflict.

In an even worse position than South Africa, for example, is Equatorial Guinea. This is a country that, thanks to its recent oil wealth, does not rely on foreign donors to support its healthcare system. Yet with healthcare spending at US\$1,053 per person, respectable by regional standards, its population still has a life expectancy of just 55 years. As in South Africa, one problem is the toll taken by communicable diseases—including AIDS, malaria and acute respiratory infections—which together account for 67% of life years lost in the country. The country's inability to get on top of this problem, however, is largely because wealth and healthcare spending has not spread sufficiently beyond a tiny elite. The infrastructure to support access to health is lacking.

The current outbreak of Ebola in Western Africa has shown just how difficult it is to contain infectious diseases in countries where healthcare services are lacking, and where people are not used to accessing them. Of the countries affected so far (Sierra Leone, Guinea, Nigeria and Liberia), only Liberia is not in the Bottom Tier. Yet Nigeria, hardly a model of good governance, does appear to have stemmed the spread of the disease through a quick and coordinated response.

Officials started monitoring airports for the infection and once the first possible case appeared on July 20th, the patient involved was immediately transferred to hospital. Nigeria then, with the support of the WHO and other bodies, set about tracing all known contacts of the patient, quarantining them until it was clear whether they had been infected. Altogether, 20 people in Nigeria caught the disease, of whom one-half died. Thanks to the quick response, however, the country has been declared Ebola-free, limiting the damage to its economy as well as people's lives.⁸

Nigeria's example holds lessons for its neighbours, and not just in emergency situations. Even Equatorial Guinea has had its successes. Maternal mortality rates, for example, have fallen sharply over the past decade, while sanitation levels are fairly high. But there is too little focus on basic strategies, such as pushing up immunisation for its fast-growing population and ensuring that anti-retrovirals are provided to those with HIV. A few quick coordinated campaigns could bring rapid results.

⁸ https://www.internationalsof.com/ebola/index.cfm?content_id=418&language_id=ENG

Conclusion

The successes and failures discussed in this report should be put into context. Worldwide, life expectancy has risen by nearly 12 years over the past four decades, while infant mortality is just one-third of its previous level. Clearly much of the investment that is being put into healthcare in each country is paying off. Indeed, South Africa remains pretty much the only country where life expectancy has gone backwards, thanks to the AIDS epidemic, and even here a recovery has begun.

That said, there may be a limit to how much further progress is possible. Although overall life expectancy should continue to improve, life expectancy at the age of 60 is slowing and has even stalled in many countries. As outcomes improve, progress becomes more expensive. This poses a major challenge for middle-income countries, such as China, which are now trying to improve their healthcare outcomes without resorting to the heavy health expenditure of Western Europe and North America.

The experiments currently being made to improve cost-efficiency may point to some ways to achieve that. Healthcare spending growth, which for years seemed inexorable, is starting to slow in the US and in much of Western Europe. That may be partly the result of recession and high debt levels, but it may also be the effect of efficiency gains that can be built upon. In developed Asia, meanwhile, countries are leapfrogging ahead in terms of outcomes without resorting to the heavy spending of their predecessors. Among the trends that offer hope:

- Hospital stays are falling in most countries. Despite systemic inertia, this should slowly free up resources and allow for new investments in primary care;
- The medical workforce is becoming more international. Although in the short term this causes problems for some countries, it may eventually result in more rational recruitment markets, not to mention the benefits in terms of medical education and experience;

- Public information campaigns are beginning to pay dividends in some areas, bringing down smoking rates and persuading people to seek earlier checks on worrying symptoms;
- Technological advances may also feed into these trends. The internet allows for more information-sharing, while even in sub-Saharan Africa rising mobile phone penetration rates offer opportunities to widen access to care;
- Notable scientific advances, although they may be expensive to finance and to implement in the short term, offer long-term prospects of reducing disease morbidity and mortality;
- Health economics is becoming a more rigorous global discipline, making it clearer which interventions are most cost-effective and allowing best-practice to spread internationally;
- Value-based healthcare promises to link spending directly to outcomes, making it easier to judge whether investments are being used wisely.

Some of these trends will manifest themselves through rationing, wage freezes and price squeezes, which may be necessary. A focus on cost-cutting at the expense of future outcomes, however, would miss the point. Higher healthcare outcomes feed into economic growth, which in turn allows for higher healthcare spending. In this scenario, healthcare spending should not just be viewed as an economic burden, but also as an economic driver—not only creating a healthier workforce but also helping to spawn high value-added industries in life sciences and medical tourism. Many governments, from China to the Middle East, are deliberately investing in healthcare on that basis and it would be short-sighted to allow short-term cost pressures to distract us from the end goal.

The Economist Intelligence Unit

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LONDON

20 Cabot Square
London
E14 4QW
United Kingdom
Tel: (44.20) 7576 8000
Fax: (44.20) 7576 8500
E-mail: london@eiu.com

NEW YORK

750 Third Avenue
5th Floor
New York, NY 10017
United States
Tel: (1.212) 554 0600
Fax: (1.212) 586 1181/2
E-mail: newyork@eiu.com

HONG KONG

6001, Central Plaza
18 Harbour Road
Wanchai
Hong Kong
Tel: (852) 2585 3888
Fax: (852) 2802 7638
E-mail: hongkong@eiu.com

GENEVA

Rue de l'Athénée 32
1206 Geneva
Switzerland
Tel: (41) 22 566 2470
Fax: (41) 22 346 93 47
E-mail: geneva@eiu.com