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Comparing UK and 20 Western countries' efficiency in reducing adult (55–74) cancer and total mortality rates 1989–2010: Cause for cautious celebration? A population-based study

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Abstract

Objective: Every Western nation expends vast sums on health, especially for cancer; thus, the question is how efficient is the UK in reducing adult (55–74) cancer mortality rates and total mortality rates (TMR) compared to the other Western nations in the context of economic-input to health, the percentage of Gross-Domestic-Product-expenditure-on-Health.

Design: WHO mortality rates for baseline 3 years 1989–1991 and 2008–2010 were analysed, and confidence intervals determine any significant differences between the UK and other countries in reducing the mortalities. Efficiency ratios are calculated by dividing reduced mortality over the period by the average % of national income.

Setting: Twenty-one similar socio-economic Western countries.

Participants: The 21 countries' general population.

Main outcome measures: Cancer mortality rates, total mortality rates Gross Domestic Product and Efficiency Ratios.

Results: *Economic Input:* In 1980, UK national income was 5.6% and the European average was 7.1%. By 2010, UK national income was 9.4% being equal 17th of 21 averaging 7.1% over the period. Europe's 1980–2010 average of 8.4% yields a UK to Europe ratio of 1:1.18.

Clinical output 1989–2010: UK Cancer Mortality Rates was the sixth highest, but equal sixth biggest fall, significantly greater than 14 other countries. UK Total Mortality Rates was the fifth highest but third biggest decline, significantly greater than 17 countries. UK's cancer Efficiency Ratios is largest at 1:301 and second biggest for Total Mortality Rates at 1.1341; the USA ratios were 1:152 and 1:525, respectively.

Conclusions: UK reduced mortalities indicate that the NHS achieves proportionally more with relatively less, but UK needs to match European average Gross-Domestic-Product-expenditure-on-Health to meet future challenges.

Keywords

International, comparison, mortality, health expenditure

Introduction

The response to medical advances, greater expectations, extended longevity and the rising cost of health care, especially for cancer, means health inflation raises almost 3% p.a. and has meant that every Western nation has the need to devote considerably more of its 'national income', its gross domestic product (GDP) to healthcare.[1–6] This percentage of GDP expended-on-health (GDPEH)[5,6] raises the reasonable question of how efficient and effective is the UK and the other 20 Western countries in reducing *feasible* mortality (adults 55–74). This needs to be measured within the context of what each nation spends of its GDP on health, irrespective of the GDP cash value as it shows in proportional terms a nation's financial commitment to healthcare. The adult mortalities under consideration are cancer mortality rates (CMR) and total mortality rates.

UK cancer services have received considerable negative media coverage because the UK's cancer survival rates were much worse than many other Western nations.[7,8] However, using cancer survival rates as an indicator ignores the serious methodological problems inherent in survival rates because of differences in baseline measures[9,10] due to a lack of uniformity in the different national cancer registers.[11,12] Moreover, these earlier survival studies largely ignored the links between poorer outcomes and socio-economic factors.[13–16]

A different approach was taken in an earlier study using confirmed CMR between 1979 and 2006, as a more reliable measure of outcome, to find that over the same period the UK had significantly bigger reductions in cancer deaths in people aged 55–74[17] compared to countries whose survival rates were apparently superior to the UK.[7,8]

The use of CMR as a measure of effectiveness follows the British government's cancer strategy for

England that aimed to reduce cancer deaths for people under 74,[2,18] which is below the current UK life expectancy of 79 years.[19] Hence, the use of adult (55–74) mortality rates as a measure of reducing 'feasible' mortality as it is lower than the current UK life expectancy (WHO, 2015).

New WHO data[19] enable us to follow up the earlier study[17] and compare the latest available WHO mortality data to determine whether the progress made by the UK has continued. However, to avoid the criticism that the earlier baseline, set then for 1979–1981, is somewhat historical, the baseline years are more recent and taken from 1989–1991 to 2008–2010. Furthermore, to place CMR in a wider comparative context, 'total mortality rates' (TMR) for adults (55–74) are used as a control to see how the UK's cancer services have progressed in relation to overall adult mortality. This allows a broader examination of the nation's response to the wider health matters not just the high media attention given to cancer.

It is recognised that mortality rates are influenced by many interactive clinical and policy issues, including health and social policies, education, poverty, lifestyle, influence of net migration, access to public health, preventative as well as intervention healthcare.[15,16,20–23] The extent of these different factors and their influence upon mortality outcomes would need country-specific research. However, first comparing a nation against itself over time provides a reasonable degree of conformity and reliability of clinical output.

Economic input is the percentage of GDPEH, which is a measure of the fiscal priority each nation gives to healthcare within its socio-economic situation.

Of course, health expenditures are not just aimed at reducing mortality but other objectives such reducing chronic illness, etc. However, in the last analysis, reducing mortality might be seen by the public as the 'ultimate' health-care goal of every nation's health-care system, no matter how structured.

There are two working null hypotheses. That over the period there will be no statistically significant difference between the UK and the other Westerns countries in:

1. reducing both mortality rates, and
2. efficiency.

Method and design

To determine efficiency a nation's 'economic input' to its healthcare is contrasted with its 'clinical outputs', which is its comparative value added. It is a truism that a nation can only have the services it can afford which raises the question of how do we compare what different nations afford for health and to what extent can we measure the relative and comparative priorities they devote to health? One measure is the percentage of the country's national income devoted to health expenditure, the percentage of GDPEH. This indicates the priority each country affords for its health services irrespective of the configuration of services or the cash value of the GDP of each country. These GDP cash values differ enormously, for example between Britain and Portugal, but the % GDPEH is a comparative indicator of the priority, within each national budget, that a nation gives to its healthcare.

Economic input

The % GDPEH is the combined *total* public and private monies that each nation spent on healthcare. This is both from 'public funding', i.e. from State and Central governments, and 'private' which is mainly insurance.[5,6] This varies in the different countries but is the total GDPEH and includes all funding sources.[5,6]

The GDPEH data come from the US Bureau of Statistics[5] and the World Bank[6] for the period 1980–2010 based upon 24 separately reported years. However, GDPEH data were not available in Greece for three years, Australia and Japan two years, and Belgium, Denmark and Portugal one year so their averages are based upon fewer years.

The GDPEH data are set against the years for which we have clinical output: 1989–2010. The GDPEH data fall into two periods, 1980–1997 and 1998–2010, for which averages are calculated, plus an overall average for 1980–2010. The averages are used in the *efficiency ratios* (ER) which are derived by dividing the reduced mortalities by the average GDPEH for 1980–2010. The larger the ratio the more efficient is a nation.

To place the UK % GDPEH in a wider context, this will be contrasted against the Western European average (excluding the UK) over the period. A UK to European average ratio is calculated to determine the extent to which European countries on average spend proportionately more or less of their national income than the UK.

Clinical outputs

Mortality data for adults (55–74) per million (pm) of population for CMR and TMR are drawn from

WHO data up to 2008–2010.[19] The baseline years are the average for 1989–1991 for the latest index three-year average of 2008–2010 for both sexes. This is later than an earlier study whose base years were 1979–1981 that might be considered too historical, and an earlier baseline would have favoured the UK, as previously, the UK had the highest CMR in the West,[17] and it is comparatively easier to make bigger percentage reductions from higher baselines, before the law of diminishing returns increasingly operates.[24–26]

Each country's mortality rates baseline and index years are measured, effectively measuring a country against itself, from which a percentage of change is calculated. Canada and New Zealand have slightly earlier index years of 2007–2009.

However, when comparing efficiency, there is the problem of 'diminishing returns'. Countries that initially had a higher mortality level potentially have a greater opportunity to improve over time, whereas for those with lower rates, it takes an increasingly greater input to achieve a comparable outcome.[24–26]

Findings

Economic input % GDPEH

Table 1 presents the % GDP Expenditure on Health of all the 21 Western countries. Baseline and current years and average (1980–2010) rates are given and the averages for the 1989–1997, 1998–2010 and 1980–2010 periods. In addition, the levels of health expenditure are given for the years 2011–2013.

In 1980, the USA led GDPEH at 9% followed by Denmark and Sweden with 8.9%, down to Portugal and Spain at 5.3%. The UK was the third lowest at 5.6%. The 15 European countries' average was 7.1%.

Over the period 1980–1997, the UK average GDPEH was 6.2% and ranked 20th out of 21 countries. The European average was 7.7%, yielding a UK to European ratio of 1:1.24.

From 1998 to 2010, USA expenditure rose from 14 to 17.1%, an average of 16.4%, followed by Switzerland 10.8% and Germany 10.7%. The UK went from 6.7% to 9.4% by 2010, averaging 7.9%, ranked equal 17th. The European average was 9.1% yielding a UK to Europe ratio of 1:1.15.

The highest overall average for the period 1980–2010 was the USA at 13.2%, followed by Germany at 9.5% then France and Switzerland at 9.4%, down to the UK at 7.1%, then Spain 7.2% and Ireland 7.3%. The European average of 8.4% produced a UK to Europe ratio of 1:1.18.

In effect over the whole period, on average Europe spent an equivalent 18% more of its national income on health than did the UK, while Germany which is famous for its financial prudence averaged 9.8%, a UK to German ratio of 1:1.38, while the comparison with the USA yielded a UK to USA ratio of 1:1.86.

It is noted that while from 1980 the GDPEH had risen considerably in all countries over the whole time span, in some years the GDPEH fell compared to the previous year's expenditure. This occurred in the UK in the years 1984, 1987, 1988, 1994, 1995, 2011 and 2013.

Clinical outputs

Cancer mortality rates 55–74 year olds (CMR). Table 2 shows the percentage of change in CMR between 1989–1991 and 2008–2010 ranked by the highest current rate. Spain, at 6424 pm, had the highest rate, the Netherlands 5761 pm and Portugal 5629 pm, who with Spain were the only two countries to report increases over the period, rises of 22% and 16%, respectively. The lowest was Sweden at 3280 pm, a fall of 38%. Australia was at 4055 pm, down 31%, and Switzerland had a decline of 24%.

Over the period, the UK CMR fell in relation to European average. In 1989–1991 there was a UK to Europe ratio of 1:0.83; by 2008–2010 it was 1:0.88.

The UK had been second highest but now at 5146 pm was the sixth highest. The UK rate of 5146 pm is a 28% reduction and is the equal sixth biggest fall of all countries.

Total mortality rates 55–74 year olds (TMR). Table 3 shows the highest current rate was Denmark at 13,333 pm followed by the USA 12,605 pm and Germany 12,493 pm to the lowest, Switzerland at 8317 pm, Australia 8450 pm and Spain 9295 pm. Every country had substantial falls over the period, from Japan, an equivalent of 28%, to Ireland, a fall of 51%.

The UK had been the third highest but was now fifth at 11,570 pm, having the second biggest reduction at 44% over the period.

UK compared with 20 western countries

Table 4 shows the resulting confidence intervals of comparing each nation with the UK results for CMR and TMR.

With respect to cancer deaths, the UK had statistically bigger falls than 14 other nations, though Sweden had significantly better CMR outcomes than the UK.

With regard to total mortality, the UK had significantly better reductions than 17 other Western nations, including the USA. However, Ireland and the Netherlands had significantly better TMR results than Britain.

Table 1. GDP Health Expenditure for 1980–2013 – based upon 24 years' reporting unless noted (= denotes equal ranking).

Country and rank (1) Missing years	1980	1997	Average 1980–97	1998	2010	Average 1998–2010	Overall average 1980–2010	Average 2011–2013
1. USA	9.0	13.9	9.9	14	17.1	16.4	13.2	17.1
2. Canada	7.0	9.3	9	9.3	11.1	9.8	9.7	10.9
3=. Germany(1)	8.4	10.7	8.8	10.6	11.6	10.7	9.4	11.3
3=. France	7.0	9.9	8.8	9.6	11.6	10.4	9.4	11.6
5. Switzerland	7.3	10.2	8.5	10.4	10.9	10.8	9.3	11.3
6. Sweden	8.9	8.6	8.6	7.9	9.5	8.8	8.6	9.6
7. Netherlands	7.4	8.5	8.3	8.7	12.1	9.4	8.5	12.6
8. Austria (2)	7.4	8.4	8	8.4	11.1	9.4	8.4	11.0
9. Belgium (1)	6.3	7.9	7.4	8.6	10.6	9.7	8.1	10.8
12=. Italy	7.0	7.6	7.6	7.7	9.4	8.4	7.9	9.2
12=. Norway	7.0	7.5	7.5	8.6	9.4	8.7	7.9	9.4
12=New Zealand	5.9	7.6	7.1	8.6	10.0	8.6	7.9	10.0
12=. Australia (2)	6.1	8.4	7.6	8.6	8.9	8.4	7.9	9.0
14. Finland	6.3	7.7	7.7	7.4	9.0	7.7	7.7	9.1
15. Denmark (3)	8.9	8.1	7.1	8.3	11.1	9.0	7.5	10.8
16. Portugal (1)	5.3	7.9	6.7	6.4	10.9	8.8	7.3	10.0
17. Ireland	8.2	7	7.3	6.9	9.2	7.3	7.1	8.8
19=. Greece (3)	5.9	8.6	6.1	8.4	9.5	9.1	7	9.6
19=. Spain	5.3	7.4	6.5	6.6	9.6	7.9	7	9.2
19=. Japan (2)	6.5	7.2	6.7	7.5	9.6	8.0	7	10.2
21. UK	5.6	6.7	6.2	6.7	9.4	7.9	6.7	9.2
UK's rank [4th]	19th	21st	20th	19th	17th=	18th=	18th=	18th
Europe average	7.1	8.4	7.7	8.3	10.4	9.1	8.3	10.3
UK: EU ratio	1.27	1.25	1.24	1.24	1.11	1.15	1.24	1.12

Note: Countries ranked by Average GDPHE 1980–2010.

Efficiency ratios (ERs)

Table 5 shows that, in terms of ER for cancer deaths, the UK was the most efficient with a ratio of 1:301, followed by Denmark 1:288 and Sweden 1:278. The lowest ER was Greece 1:41, Germany 1:94 and Japan at 1:98. The USA was ranked 13th with a ratio of 1:144, yielding a USA to UK ratio of 1:2.09. Europe average cancer ER was 1:176, a Europe to UK ratio of 1:1.71.

Total mortality

In terms of TMR, the best ER was Ireland at 1:1620, followed by the UK at 1:1341, then New Zealand at 1:1122. The lowest was Japan at 1:307; France was at

Table 2. Cancer mortality rates (CMR) 55–74 people 1989–1991 vs. 2008–2012 rates per million (UK highlighted in Bold).

Country 1989–1991 vs. latest year.	CMR 1989–1991	CMR 2008–2010	% Change
1 (18) Spain	5284	6424	+22
2 (5) Netherlands	6583	5761	−12
3 (19) Portugal	4832	5629	+16
4 (1) Denmark	7735	5577	−28
5 (4) New Zealand 2007–2009	6721	5214	−22
6 (2) UK 2008–2010	**7161**	**5146**	**−28**
7 (12) Germany 1990–1992	5873	4986	−15
8 (3) Ireland	6801	4911	−28
9 (9) Belgium	6179	4861	−21
10 (10) France	6103	4836	−21
11 (8) Italy	6356	4804	−24
12 (6) USA	6565	4664	−29
13 (11) Austria	5992	4606	−23
14 (7) Canada 2007–2009	6358	4520	−29
15 (21) Greece	4677	4387	−6
16 (14) Norway	5808	4385	−24
17 (15) Finland	5399	4136	−14
19 (20) Japan	4772	4083	−14
18 (16) Switzerland	5350	4078	−24
20 (13) Australia	5842	4055	−31
21 (17) Sweden	5324	3280	−38

Note: Ratio of change ranked by highest CMR.
Ranks of CMR Rho=+0.4467; $p<0.05$.

1:441 and Greece 1:467. The USA was 18th at 1:497, a USA to UK ratio of 1:2.70.

An average Europe ER for total deaths was 778, a Europe to UK ratio of 1:1.72.

From these results, it is reasonable to conclude that the UK, Ireland and Denmark are the most efficient in reducing adult (55–74) cancer and total adult (55–74) mortality with positive outcomes in regards to comparative value added.

Discussion

Principal findings

The null hypothesis that there would be no significant differences between reduction in UK and other countries' mortality rates is rejected as the UK had significantly greater falls in cancer and total death rates than 14 and 17 countries, respectively.

Moreover, the hypothesis that there would be little difference between the efficiency of the UK services

Table 3. All cause death rates (55–74) per million (pm) 1989–1991 vs. 2008–2010 and ratio of change % (UK highlighted in Bold).

Country current ranks and 1989–1991 rank	1989–1991	2008–2010	Change %
1 (6) Denmark	21,104	13,333	−37
2 (4) USA	19,168	12,605	−36
3 (6) Germany 1990–2010	18,230	12,493	−31
4 (8) Portugal	17,902	11,734	−34
5 (3) UK	**20,554**	**11,570**	**−44**
6 (10) Austria	17,693	11,458	−35
7 (9) Finland	17,845	11,451	−36
8 (1) Ireland	22,358	10,853	−51
9 (12) Belgium	16,874	10,844	−36
10 (18) Greece	14,093	10,826	−23
11 (11) Netherlands	16,938	10,647	−37
12 (13) Canada	16,392	10,269	−37
13 (17) France	14,299	10,154	−29
14 (5) New Zealand	18,843	9982	−47
15 (7) Norway	18,042	9955	−35
16 (15) Italy	15,661	9796	−37
17 (21) Japan	11,818	9669	−28
18 (14) Sweden	16,297	9619	−41
19 (16) Spain	14,625	9295	−36
20 (20) Australia	12,394	8450	−32
21 (19) Switzerland	13,589	8317	−39
Averages	16,189	10,176	−37

Note: TMR ranks 1989–2010 Rho = +0.7351 $p<0.001$.
Ranked by highest current rate.
CER cancer and public GDPEH Rho= +0.6805; $p<0.001$.
CER TMR and public GDPEH Rho= +0.5414; $p<0.01$.

and the other countries is rejected as the UK had the best Efficiency Ratios for cancer and second greatest ratio for Total Mortality, demonstrating positive comparative value-added in the context of national budgets devoted to health. Moreover, the UK ERs were more than double those of the USA, whose GDPEH exceeded that of every Western country. Indeed, in terms of GDPEH and clinical outcomes, while the UK was one of the most effective, the USA was the least effective of the Western countries even more so when extended to child mortality.[27]

Strengths and weakness

One limitation inherent in comparing international mortality statistics is the possible variation in determining 'primary causes of death'. With respect of total mortality, there is no ambiguity as the rates

Table 4. UK versus 20 Western countries for all cause deaths and cancer mortality rates Confidence Intervals (significance in bold).

Country	TMR lower	TMR odds ratio	TMR upper	CMR lower	CMR odds ratio	CMR upper
Australia	1:1.17	1:1.21	**1:1.26**	1:0.92	1:0.97	**1:1.02**
Austria	1:1.11	1:1.15	**1:1.19**	1:1.01	1:1.07	**1:1.13**
Belgium	1:1.1	1:1.14	**1:1.18**	1:1.04	1:1.09	**1:1.15**
Canada	1:1.08	1:1.11	**1:1.15**	1:0.94	1:0.99	**1:1.04**
Denmark	1:1.09	1:1.12	**1:1.16**	1:0.95	1:1	**1:1.05**
Finland	1:1.1	1:1.14	**1:1.18**	1:1.01	1:1.07	**1:1.13**
France	1:1.22	1:1.26	**1:1.31**	1:1.05	1:1.11	**1:1.17**
Germany	1:1.18	1:1.22	**1:1.26**	1:1.12	1:1.18	**1:1.24**
Greece	1:1.32	1:1.36	**1:1.41**	1:1.24	1:1.31	**1:1.38**
Ireland	1:0.83	1:0.86	1:0.89	1:0.95	1:1	**1:1.06**
Italy	1:1.07	1:1.11	**1:1.15**	1:10	1:1.05	**1:1.11**
Japan	1:1.4	1:1.45	**1:1.51**	1:1.13	1:1.19	**1:1.26**
New Zealand	1:1.08	1:1.12	**1:1.15**	1:1.16	1:1.22	**1:1.28**
Netherlands	1:0.91	1:0.94	1:0.97	1:1.03	1:1.08	**1:1.14**
Norway	1:0.95	1:0.98	**1:1.01**	1:1	1:1.05	**1:1.11**
Portugal	1:1.13	1:1.16	**1:1.2**	1:1.54	1:1.62	**1:1.71**
Spain	1:1.09	1:1.13	**1:1.17**	1:1.61	1:1.69	**1:1.78**
Sweden	1:1.01	1:1.05	**1:1.08**	1:0.81	1:0.86	1:0.91
Switzerland	1:1.05	1:1.09	**1:1.13**	1:10	1:1.06	**1:1.12**
USA	1:1.13	1:1.17	**1:1.21**	1:0.94	1:0.99	**1:1.04**

are total mortality. Cancer rates revolve around primary or secondary causes of death related to malignancies but are unlikely to be an over-estimate.[19]

Crucially, the WHO data are the most consistent available and by comparing a country against itself, any vagaries of reporting differences between countries are lessened.[19]

Relations to other studies

In relation to UK cancer deaths, these results challenge the outcomes concerning cancer survival rates, where every Western country has improved its survival rates, and the UK appeared less successful. However, the reduction in Western cancer mortality for the under 74s is in the same direction as the survival rate data, but it would appear that cancer mortality rates are a more reliable measure than survival rates, as there is less ambiguity about death rates from common baselines.[9,10,17] Furthermore, these results confirm the earlier study that the UK's cancer mortality outcomes continue to improve and relatively more so than in most other Western countries.[17]

Implications

While self-evidently a nation can only have a healthcare system it can afford, this study shows that the UK afforded substantially less than many other countries, yet the NHS achieved more with proportionally less. This should be a boost for patients, families and

Table 5. UK and Western countries GDPEH cost-effectiveness ratios (CEF) for cancer-mortality-rates and all cause deaths 1989–2010.

Country CMR–TMR ranks	Cancer CEF 1	All cause CEF 1	Combined ranks
1–2 UK	301	1341	1.5
4–1 Ireland	266	1620	2.5
2–5 Denmark	288	1036	3.5
7–3 New Zealand	191	1122	5.0
4–8 Sweden	278	777	6.0
9–5 Norway	180	1024	7.0
6–11= Italy	196	742	8.8
11–7 Finland	164	830	9.0
10–11= Austria	165	742	10.5
8–14 Canada	189	625	11.0
12–10 Belgium	163	744	11.0
5–17 Australia	226	499	11.0
20= –6 Portugal	Xx	845	13.3
20= 9 Spain	Xx	761	14.8
17–13 Netherlands	97	740	15.0
13–18 USA	144	497	15.5
14=–16 Switzerland	135	567	15.5
18–15 Germany	94	610	16.5
14= –20 France	135	441	17.3
16–21 Japan	98	307	18.0
19–19 Greece	41	467	19.0
Europe average Europe average: UK	176 1: 1.76	778 1: 1.72	–

Note: ranked by combined ranks.
CEF for CMR and TMR Rho= +0.7144; $p < 0.001$.

front-line staff. Moreover, the actual and relative success of the NHS in achieving medicine's primary objective, reducing death rates, should reconfirm that the NHS model is both effective and efficient.

When things go wrong, as outlined in the Francis Report concerning an excess of deaths,[28] the media make great play of the NHS being inadequate. However, there is seldom any discussion about the adequacy of resources needed to meet clinical targets. There are two key paragraphs in the Francis Report related to resources, which merit consideration.

In para 1.16 page 16, Francis stated that 'the board . . . must bear some of the collective responsibility for allowing the mismatch between the resources allocated and the needs of the service . . . to persist with protest or warning of the consequences'.

In a later paragraph 1.46 Francis criticised the Strategic Health Authority who '*failed to alert those responsible for the problem*' of the mismatch.[28]

In other words, the authorities failed to acknowledge that the Trust did not have a feasible budget to meet the needs of the service.

This poses the question, does the NHS have the necessary feasible budget to meet the future challenges? Consider what could be achieved if the NHS had the resources that matched the overall European average. This would have meant a further 18% of resources over the period, or an additional 15% over the shorter term. This would go a long way to reduce A&E waiting times and provide adequate social care, reduce delayed discharges. If the UK equalled the European average then like Germany and France it might have operating theatres devotedly entirely to emergency care as in France and Germany, avoiding disrupting elective surgical lists.

Matching the Western European average % GDPEH is a worthy policy objective that the wider public would see as fair, for when comparatively judging the NHS it becomes clear that the service is both effective and efficient. Yet, over the last five years (2010 to 2013), the World Bank[6] showed that relative to the nation's wealth, the UK devoted proportionately less of its GDP to health than previous years, which undermines the NHS efforts to respond to the challenges of a still increasing cancer incidence, rising cost of advanced medicine and longevity.[1–6]

We need to ask, what can and should Britain afford for health so that patients can continue to receive the quality of care they require? Parity with Western Europe would go a long way to achieving this.

Unanswered questions

The issue of why the discrepancies between the UK survival rates and cancer mortality exist is unresolved and probably requires country-specific research. Nonetheless, both sets of data are showing

improvements and apart from Portugal and Spain, whose rates rose, effective treatment of cancer has never been better and never more so in the United Kingdom.

Declarations

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