Effect of diverging policy across the NHS

Information in practice

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Since 1948 the NHS has provided universal coverage that is free at the point of use, funded largely from taxation. Reforms have come and gone, but until the late 1990s they had been applied similarly across the four countries of the UK. Although the NHS has never been homogeneous, in practice the policy differences between the countries have been marginal compared with the similarities. However, in 1998 the Labour government devolved power to an elected parliament in Scotland, an elected assembly in Wales, and, until it was suspended in 2002, an elected assembly in Northern Ireland.

Although the powers of each political body differ, each has important freedoms with respect to NHS policy. As a result, in England, the emphasis has been on national targets to improve performance (particularly reducing waiting times), increasing capacity, and sharper market-style incentives. In Scotland, the 1990s quasi-market has been abolished and steps taken to build a professionally led, integrated system based on concepts such as managed clinical networks. In Wales, the focus has been on improving the public health through partnership working between the local NHS, local government, and communities, and in Northern Ireland, developments have been stalled by political uncertainty.[1 2] What is the effect of these differences in emphasis of policy?

Methods

We used routine data on performance of the NHS in each country to compare health indicators for 2002-3 with those in 1996-7 (before devolution). The baseline data were from a previous study by one of the authors.[3] We present six sets of indicators relating to health, per capita expenditure, inputs (such as staff and beds), activity (such as inpatient and day case rates), rates of selected operations, and other outputs (such as waiting times).

After collecting the data, we tried to contact people with overall responsibility for health statistics in each country and have successfully confirmed the accuracy of the data we have used for Northern Ireland, Scotland, and Wales. There seems to be no one who can do this for England. The detailed definitions of each of the indicators, their sources, and discrepancies between the data are given on the King's Fund website (www.kingsfund.org.uk/document.rm?id=5793).

Health indicators

Table 1 shows that life expectancy has risen in all four countries and for both sexes during 1996-2002. The gain in life expectancy has been roughly a year, although the increase is likely to be attributable as much to rising living standards and better conditions in early life as to the actions of the NHS and mirrors trends in many countries in the Organisation for Economic Cooperation and Development.[4]

The all cause standardised mortality ratio indicates only slight signs of convergence between the four countries as life expectancy has lengthened, with Scotland having the highest ratio. In infant mortality, the trend in the early 1990s of declining rates in the UK[5] has continued in all four countries. Likewise, perinatal mortality has fallen in all countries except Wales.

The prevalence of self-reported illness and restricted activity among people living in the community from sample surveys shows no trend either over the study period or between the four countries. The proportion of the population self-reporting illness has tended to rise decade on decade since the 1970s, though the increase has slowed since the 1980s.[6] The Scots report lower rates of longstanding and limiting longstanding illness than the English. We have found no evidence to explain this, but it may be because more Scots die prematurely and so do not survive to experience limiting chronic conditions.

Expenditure and other inputs

England has had the lowest spending per capita in each year and Scotland the highest (table 2). Although each country introduced formulas to guide the allocation of resources to achieve equitable spending per capita in the late 1970s, no such policy has been applied between the countries of the UK.[7 8] Over the six years from 1996, per capita spending has increased by 30% in England, 28% in Northern Ireland, 22% in Wales, and 20% in Scotland. These crude statistics do not take account of differences between countries in need for health care arising from age or morbidity. If allocations of resources for each country were based on the size of populations weighted by standardised mortality ratios (but not adjusted for differences in age structures), then Scotland would have 20% higher expenditure per capita than England rather than the current 16%.

We found it difficult to find a common source for what ought to be basic information. Dixon and

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Table 1 Health indicators for UK countries

	England		Scotland		Wales		Northern Ireland	
Indicator	**1996-7**	**2002-3**	**1996-7**	**2002-3**	**1996-7**	**2002-3**	**1996-7**	**2002-3**
Standardised mortality ratio:								
Men	98	98	119	119	102	102	109	102
Women	98	98	116	113	102	104	108	102
Life expectancy (years):								
Men	74.5	76.2	72.2	73.5	73.9	75.6	73.8	75.6
Women	79.6	80.7	77.9	78.9	79.1	80.2	79.2	80.4
Perinatal mortality/1000	8.7	8.3	9.2	7.6	7.5	7.7	9.4	8.9
Infant mortality/1000	6.1	5.2	6.2	5.3	5.6	4.5	5.8	4.7
Proportion reporting illness (%):								
Longstanding illness	35	35	33	31	38	38	34	36
Limiting longstanding illness	22	21	21	18	26	24	25	26

colleagues were able to report not only per capita spending on the NHS but also details of expenditure on hospital and community health services, family health services, and personal social services.[3] We have been unable to find information in a form that will allow us to derive these elements on a consistent and credible basis.

The number of hospital beds per 1000 population has fallen in all four countries and particularly in Scotland and Northern Ireland, which had the most beds in 1996 (table 3). However, England still only has just over half the number of beds per 1000 population as Scotland. Most of the bed losses seem to have been in the long stay or non-acute sector, and the availability of acute beds has risen in all countries. As a result, the NHS is increasingly providing an acute service, as shown by the rising proportion of day and outpatient treatment (see below).

All four countries have had increases in medical and dental staff during the study period (table 3). Scotland and Northern Ireland started with the highest number of staff per 1000 population, and although England has gained staff per capita, its position relative to Scotland has scarcely altered. The number per capita of nursing, health visiting, and midwifery staff has risen by 0.5% in England, Scotland, and Wales and by 0.1% in Northern Ireland. Scotland still has the most nurses per capita.

Table 2 Total NHS expenditure per capita by country

	Expenditure per capita (£)	
	1996-7	**2002-3**
England	831	1085
Scotland	1047	1262
Wales	968	1186
Northern Ireland	944	1214

Activity

Table 4 shows that bed occupancy rose between 1996 and 2002 in all four countries and is now over 80%. Rates of outpatient appointments/1000 population have risen in all four countries, notably in Wales and England, although in all countries the ratio of new to follow-up appointments was similar. Rates of procedures carried out as day cases have also risen in all countries except for Wales, where, puzzlingly, the rate seems to have dropped by over half between 1996 and 2002. The rate of inpatient admissions rose slightly in Northern Ireland, stayed roughly the same in Scotland, but dropped slightly in England and Wales, possibly as a result of a slight reduction in beds. The increases in the NHS workforce over this period have been accompanied by falls in crude rates of productivity as measured by outpatient appointments and inpatient admissions per medical or dental staff member and per nurse.

Operation rates

Operation rates for selected common procedures have increased in all four countries (table 5). An exception to this is varicose vein surgery, for which rates dropped everywhere except Northern Ireland. Given the constraints on the supply of surgery, it may be that greater priority has been given to other procedures (as varicose vein surgery has a larger discretionary element than other procedures), treatment has been by injections (which would not be recorded as this is an outpatient procedure), or greater numbers of patients were seeking care outside the NHS.

The biggest rise was in operations for cataracts (extracapsular extraction of lens and prosthesis of lens), especially in England. Despite the high numbers

Table 3 Availability of hospital beds and health staff in UK countries

	England		Scotland		Wales		Northern Ireland	
Input	**1996-7**	**2002-3**	**1996-7**	**2002-3**	**1996-7**	**2002-3**	**1996-7**	**2002-3**
Hospital beds/1000 population (all specialties)	4.1	3.8	7.7	6	5.3	5	5.7	4.9
Hospital beds in acute specialties (% of total beds)	76.2	79.4	68.2	72.1	78.1	81.4	71.2	73.5
Staff/1000 population:								
Medical and dental*	1.1	1.4	1.5	1.8	1.2	1.4	1.3	1.6
Nursing, midwifery, and health visiting*	5	5.6	6.9	7.4	5.9	6.4	6.9	7
General practitioners†	0.56	0.57	0.72	0.76	0.6	0.61	0.62	0.63

*Whole time equivalent.
†Unrestricted principals.

Table 4 Comparison of NHS activity in UK countries

	England		Scotland		Wales		Northern Ireland	
	1996-7	2002-3	1996-7	2002-3	1996-7	2002-3	1996-7	2002-3
Bed occupancy (%)	81.3	85.4	80.6	81.4	78.3	82.5	78.9	84.3
General practitioner consultations per person	5	4	6	4	5	5	NA*	NA*
Outpatient activity								
Total appointments/1000 population	842.6	899.8	927.1	931.1	888.7	972.3	852	861.8
New appointments/1000 population	232.5	262.7	256.8	260.7	230.7	252.2	234.4	240.2
Ratio of new to return appointments	2.62	2.43	2.61	2.57	2.85	2.86	2.63	2.59
Inpatient and day case activity								
Day cases/1000 population	61	75	75.4	83.1	99	45.6	58.8	81.7
Inpatient admissions/1000 population	171	157	189	188	177	174	180.4	192.6
Crude productivity (No of events/staff member)								
Outpatient appointment:								
Doctors and dentists	766.0	642.7	618.1	517.3	740.6	694.5	655.4	538.6
Nurses, midwives, and health visitors	168.5	160.7	134.4	125.8	150.6	151.9	121.9	122.6
Hospital admissions:								
Doctors and dentists	155.5	112.1	126.0	104.4	147.5	124.3	138.8	120.4
Nurses, midwives, and health visitors	34.2	28.0	27.4	25.4	30.0	27.2	25.8	27.4

*NA=Not available= Data not recorded

of people waiting for hip replacement, the increase in operation rates was modest in Wales, Scotland, and Northern Ireland, although it was proportionately higher in England. Overall, the data show a slightly higher increase in operation rates in England than in other countries.

Waiting times and satisfaction with services

England, Wales, and Northern Ireland publish statistics for people on waiting lists for an elective admission (as an inpatient or day case) or first outpatient appointment in a broadly comparable form. In Scotland, however, the Information and Statistics Division publishes statistics that largely focus on waiting times for patients who have been treated, and Dixon has shown that using this different data source gives different results.[9] We therefore have not reported waiting times for Scotland in table 6.

Before April 2003, Scotland had two waiting lists: a true waiting list and a deferred waiting list for patients who had been unavailable for admission for a time for medical or social reasons or had not attended on an offered admission date.[10] Patients on the deferred waiting list were not covered by national waiting time guarantees. Data were collected on waiting times for patients on the true waiting list only. At the end of March 2003, only one patient with a guarantee on the true waiting list for elective admission had been waiting more than 12 months. The statistics on patients treated, which include patients from both types of waiting lists (including patients without a waiting time guarantee), show that more than 7000 elective patients treated the following year had waited more than 12 months.

Table 5 Comparison of NHS operation rates per 10 000 population for selected procedures in UK countries

Procedure (OPCS4 classification*)	England		Scotland		Wales		Northern Ireland	
	1996-7	2002-3	1996-7	2002-3	1996-7	2002-3	1996-7	2002-3
Extracapsular extraction of lens (C71)	NA†	54.2	31.1	40.2	31.6	55.3	29.6	39.3
Prosthesis of lens (C75)	28.7	54.6	31.7	40.6	39.2	57.1	30	39.5
Excision of gall bladder (J18)	7.1	9.4	10.5	11.7	10.5	11	9.9	12.8
Inguinal hernia (T20)	16.8	16.7	12.5	11.1	14.1	14.6	10.4	12
Total prosthetic replacement of knee joint (W40-W42)	5	8.5	4.9	6.9	5.9	8.6	3.9	4.1
Varicose vein operation (L85-L87)	11.2	9.4	26	24.9	17.9	12	11.8	12.7
Hip replacement (W37-W39)	6.9	8.7	9.2	9.9	9.4	9.4	8.9	8.7
Coronary artery bypass grafting (K40-K46)	4.7	5.1	8.6	9.8	4.2	7.7	5.4	3.2

*Office of Population Censuses and Surveys classification of surgical operations and procedures, 4th revision.
†Data not available free of charge.

For the other UK countries the most striking divergence is in the times people have to wait for a first outpatient appointment and an elective admission (table 6). Policies in England have been directed at reducing these waiting times by setting and implementing quantitative, time specific targets, with strong performance management and sanctions for failure.[13] Between 1996 and 2002, performance in England improved across all measures of waiting times for inpatients and day cases: the total percentage of the population waiting reduced, and the proportion waiting less than six months for an elective admission increased to 80%. In the other countries, these statistics worsened.

In 2002, England had the lowest percentage of the population waiting and virtually no one had to wait more than six months for a first outpatient appointment or more than 12 months for an elective admission. In contrast, in Wales and Northern Ireland around a third of patients were waiting longer than six months for an outpatient appointment and the proportion waiting more than 12 months for admission was 16% and 22%.

Table 6 shows public satisfaction with various aspects of the NHS. The survey in Northern Ireland[11] asked slightly different questions from the survey in the other three countries,[12] and the statistics may not be comparable. Satisfaction decreased across all reported measures in Wales, particularly for outpatient and general practitioner care, and increased in Northern Ireland, where satisfaction was extraordinarily high. The reported measures of satisfaction for both England and Scotland showed increases for the general running of the NHS, decreases for general practitioner care, and marginal changes for inpatient and outpatient care.

Effects of divergence

We used a small number of indicators to compare the NHS in 2002 with 1996. Although we tried to make the indicators comparable, some of the definitions used in each country differ. The quality of data may vary too. Nevertheless, the indicators provide a useful description of the systems, albeit at a very aggregate level, and this analysis has identified some important trends.

The data do not suggest that the UK countries with higher levels of real healthcare resources or expenditure have more activity, better population health, or higher levels of public satisfaction. Hence these outcomes may be more dependent on how resources are deployed and how factors outside the healthcare system influence health.

Despite the extra finance to the NHS over the period, the numbers of healthcare staff per 1000 population rose only modestly. Rates of operations for which people commonly wait have all risen, particularly in England, although the rise in England is smaller than might be expected given the investment made and the political and managerial priority given to reducing waiting.

The most striking differences between 1996 and 2002 are in the reported reductions in waiting in England, which seem to be the result of strong performance management against targets. Policies of other countries may take a longer time to show benefits or have made greater headway on indicators not selected here. The thorough study by Leatherman and Sutherland that developed and reported indicators of quality using routinely collected data found only six indicators for comparing effectiveness across the four UK countries.[14] They showed that (for 2002, unless otherwise indicated): Scotland had the highest rates of breast screening coverage of women aged 50-64, influenza vaccination for the over 65s (2004), and MMR vaccination coverage of 2 year olds (2001); England had the lowest mortality from colorectal cancer and coronary heart disease; and Wales had the highest rates of statin prescribing.

We have been astonished at the difficulty, and in some cases impossibility, of obtaining valid comparable basic statistics on the NHS in the four countries. Devolution has resulted in natural experiments of divergent policies across these countries, with huge and increasing sums of public money spent on both health care and new computerised systems for collecting data. The new general practice contract ought, through the

Table 6 Comparison of waiting times and satisfaction in UK countries

	England		Scotland		Wales		Northern Ireland	
	1996-7	2002-3	1996-7	2002-3	1996-7	2002-3	1996-7	2002-3
Inpatient and day case waiting list (%):								
Total population waiting*	2.3	1.9	NA	NA	2.2	2.5	2.7	3.3
Waiting <6 months†	74.9	80.6	NA	NA	NA	63	62.2	60.1
Waiting 6 to <12 months†	22.4	19.4	NA	NA	NA	21	20.6	18.4
Waiting ≥12 months†	2.7	0	NA	NA	9.9	15.9	17.1	22.0
Outpatient waiting list (%):								
Total population waiting*	NA	NA	NA	NA	3.5	7.4	3.7	8.4
Waiting <3 months†	NA	80	NA	NA	72	45.7	64.8	42.1
Waiting <6 months†	NA	100	NA	NA	94.1	67.6	80.7	61.4
Waiting ≥6 months†	NA	0	NA	NA	5.9	32.4	19.3	38.6
% of public satisfied[11 12]:								
With general running of NHS	36	43	37	40	41	38	48	74
With inpatient care	51	49	61	58	63	60	67	84
With outpatient care	50	51	64	60	63	55	70	88
With general practice care	77	72	81	73	79	68	83	90

NA=Data not available or not recorded in a comparable format.
*Number on waiting list as % of total population.
†% of those on the waiting list.

Summary points

Since devolution in 1998, it has become more difficult to collect comparable data across the four UK countries, particularly on NHS expenditure and waiting times

NHS activity and health outcomes seem more dependent on how healthcare resources are deployed than higher levels of resources

The most striking difference between the countries in 2002 was the shorter waiting times in England, which introduced enforced targets for waiting

quality and outcomes framework, to generate data that will enable evaluation of the same policy throughout the UK.[15] But, without careful design, differences in other policies in each country will be reflected in differences in the data collected, which will nullify attempts at effective scrutiny and learning.

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If at first you don't succeed … sue

In times past if you failed an exam at medical school you had a "long dark tea time of the soul." You asked yourself why you spent all that time in the college bar, the snooker hall, or in classical civilisation lectures. You vowed not to leave it all to the last minute for the repeats. But these days—in the United States at least—if you don't succeed you can always sue.

Firstly, you and your lawyers can look at the validity of the exam. If you pass the exam does that mean that that you're ready to work as a doctor? If you fail does that mean that you're not ready? If the answer to either of these questions is no then you may have a case. For example, if many of the questions in the final medical exam test knowledge of basic sciences then the exam may not be a valid test. A doctor may not know the ins and outs of the Krebs cycle, but he or she may still be able to give sensible and evidence based dietary advice to patients. And what about reliability? Test-retest reliability is a good place to start. How many students who passed their final exams in May would still pass them if they were taken again in September? If large numbers of your students would fail in September, then your exam is not reliable and your students are probably crammers.

So if you are setting an exam, how do you avoid these pitfalls? Firstly, make sure that the exam tests what it's supposed to test. If it is a test of whether candidates would make good general physicians then ensure that the questions deal with common medical problems that would be seen on an average take. So most of the questions should be on chronic bronchitis rather than porphyria, and they should test candidates' knowledge of the diagnosis and treatment of chronic bronchitis rather than its pathophysiology or epidemiology. And if you want to stop the crammers concentrate on continual assessment rather than a single high-stakes exam at the end. It is strange that some people are calling for doctors to do an exam to stay on the medical register when universities are increasingly realising that the best way of deciding who should get on the register is by regular assessment.

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1 Harris JM Jr, Salasche SJ, Harris RB. Can internet-based continuing medical education improve physicians' skin cancer knowledge and skills? *J Gen Intern Med* 2001;16:50-6.