CAN WE TRUST POLITICIANS WITH HEALTH STATISTICS?

The health group was asked by the Nursing Times to write a short article on 'how politicians misuse statistics' (their phrase, not ours!). Their request was inspired by Normal Fowler's speech to the Tory party conference, but we were asked to take an example or two from other parties. Only two of us were involved and there was no time to consult with others, as we had only two weeks to do it in. This is what we sent them.

The man in the street knows nothing of "Biometrika": all he knows is that "you can prove anything by figures", though he forgets this the moment figures are used to prove anything he wants to believe'.
Bernard Shaw, Preface to The Doctor's Dilemma

It may come as a surprise to hear that the National Health Service is still expanding. That's what the statistics show - or do they?

In response to attacks from the Labour Party, Norman Fowler told this year's Conservative Party conference, "... the only measure of success or failure they use is the amount of money spent. Now the irony for them is that this Conservative government is devoting more money to the Health Service than ever before - over £16 billion a year: an 18 per cent increase in real terms over the budget we inherited from Labour.

"But I believe that spending cash is not the test of success or failure. In any service - just as in any industry - what matters is how you use the money: the result you achieve with the money you spend."

The first annual report of the Health Service in England[1] echoes these arguments but gives more information, some of which casts a little doubt on them. Cash spent on the Health Service, it tells us, doubled from £6,455 million in the financial year 1978-79 to £12,919 million in 1983-1984. The second figure is lower than that quoted by Norman Fowler as it is restricted to England.

What about inflation? The report tells us that in terms of 'cost', that is cash adjusted for general inflation in order to measure the cost to the Exchequer, the increase is only 17 per cent, but this is still greater than the 7 per cent increase in public expenditure generally.

Unfortunately, the costs of items and services bought by the Health Service increased more than general inflation over the period. Thus the increase in 'input volume', that is what money can buy for the health service, was only 7 per cent.

This is as far as the report goes. It does not make any allowance for the increasing numbers of people aged 75 or over, or technological innovation - in 1984 the NHS is under pressure to buy items of equipment which did not exist in 1978. In addition, the Government has argued that 'efficiency savings' are an alternative to an increase in NHS funds. There are no data to support this claim. The National Association of Health Authorities has estimated that if all these factors are taken onto account, NHS expenditure in England grew by only 0.59 per cent in real terms over the five year period[2].

About 70 per cent of NHS expenditure is on staff. The Conservative Party repeatedly stresses that the numbers of NHS staff have increased during its period of office. As so many NHS staff - 37.9 per cent in 1983 - work part time, staff figures are usually expressed as whole time equivalents. Each part time worker is counted according to the fraction of the full time week she or he works.

This is a better measure, provided that the length of the working week does not change. This happened in 1980, when the working hours of nurses and midwives, who make up nearly half the whole time equivalent NHS staff, dropped from 40 to $37\frac{1}{2}$ hours per week. This increased the whole time equivalent work force by 7 per cent without an extra hour being worked, since the number of hours nursing required did not change overnight.

The annual report of the Health Service in England does not allow for this change in the text, but gives adjusted figures in footnotes. So instead of rising by 13.0 per cent between 1978 and 1983, whole time equivalent nursing and midwifery staff rose by 6.1 per cent, if the actual increase in nursing hours is calculated. Even so, it is not clear to what extent this represents a real increase in nursing time. Whole time equivalent ancillary staff decreased by 3.5 per cent over the same period, so it needs to be asked whether nurses had to take on some of their duties in addition to their own.

What happened to patients? In his speech to the Conservative conference, Norman Fowler announced with pride that the numbers of day cases and inpatients treated and the number of outpatient attendances had reached an all time record. "... compared with 1978, the last year of the Labour Government, our hospitals provided treatment for $3\frac{1}{2}$ million more cases." How was this figure produced?

The number of inpatient cases in hospital is derived by adding up the number of discharges from hospital and the number of deaths in hospital. As there is no linkage between successive stays in hospital by the same person, someone who had been in hospital more than once in a given year will have been counted each time they were discharged. The same is true of day cases. This means that the increase between 1978 and 1984 of 649,000 inpatient cases and 251,000 day cases over-estimates the increase in the number of people treated.

The same principle applies to outpatient attendances which increased by 2,550,000 over the same period. These are derived by counting people each time they attend, so the number of people involved is likely to be very much smaller. In addition, many people treated as day cases or inpatients are likely to have attended outpatient clinics as well.

It is clear, then, that these data do not mean that $3\frac{1}{2}$ million are people received hospital treatment. How should they be interpreted?

An important factor which will have contributed to this increase is the aging of the population[3]. The number of people aged 75 or over increased by 12 per cent from 2,712,000 in mid 1978 to 3,084,800 in mid 1983. This is the age group which makes the heaviest use of hospital services.

According to the General Household Survey, a continuous survey of the population, there was no increase between 1978 and 1983 in the percentage of people in each age group attending an outpatient clinic, although the number of times they went each year is not recorded. In contrast to this, the Hospital In-patient Enquiry showed an increase among all age groups in the hospital 'discharge rate', that is the number of spells in hospital per person per year.

Although the number of available beds decreased between 1978 and 1983, the increase in numbers of spells in hospital was possible because the average length of stay decreased and the number of day cases increased. Some people will have welcomed the chance to avoid an overnight stay in hospital or leave sooner, but the statistics do not tell us how many people were discharged in a condition where they needed a considerable amount of nursing care or other support.

It is likely that the result of shorter stays has been to increase the number of readmissions as well as to increase the number of people requiring care in the community. Few data exist on the extent to which the increased burden on the community was taken up by friends and relatives as opposed to paid community services. Those data which do exist on community care are not encouraging. For example, according to the annual report of the Health Service in England, the growth of community nursing services is not keeping pace with demand.

As Norman Fowler pointed out in his conference speech, the important thing is what is achieved for patients. He gave three examples of what he called 'the real figures of health care', increases in hip replacements and renal transplants and 'that the number of babies dying around childbirth has been reduced by nearly a third.'

While the first two examples are welcome news as demand for both operations outstrips the supply, he did not relate them to the number of people suffering from the condition or whether the operations were successful. The Hospital In-patient Enquiry, from which the statistics are derived goes no further than recording whether patients were discharged alive or died in hospital. Other data collected about renal transplants show failure rates of between 20 and 60 per cent a year after the operation[4]. Failure rates depends depend on where the operation was done and are higher in older people.

The third example is the only true measure of outcome. It is usually defined in more careful terms as the perinatal mortality rate, that is the proportion of total births which are stillborn or die in the first week after live birth. The considerable fall in perinatal mortality since the Conservatives came to power has frequently been mentioned as one of their achievements in speeches by health ministers and features prominently as an 'achievement' both in the recent annual report and in Health care and its costs[5] which was published last year.

It is certainly true that perinatal mortality fell rapidly from 14.6 per thousand births in 1979 to 10.3 per thousand births in 1983, but the sharp downturn started in 1976, three years before the Conservatives returned to power. The repeated mention of the fall in perinatal mortality is selective use of information. It is conveniently forgotten that death rates between a week and a year have not fallen at all since 1976.

In contrast, although the accuracy and interpretation of birth and infant mortality statistics and of statistics about health service resources can be questioned, they come from clearly identifiable sources. Admittedly, NHS statistics for England are becoming difficult to get hold of. Health and personal social services statistics for England, which was published annually up until 1978, has only appeared once since then, in 1982.

In contrast to the data in these publications, some figures quoted in the political arena conform more to the public image of statistics as 'damned lies' plucked out of the blue. To return to the perinatal example, there was no clear basis for the often repeated and highly subjective claim that 5,000 babies die unnecessarily at or around the time of birth and a further 5,000 are unnecessarily handicapped because of the lack of suitable facilities for maternity care.

More recently this has been replaced by the equally vague claim that '6,000 newborn babies could be deprived of the intensive care they need this year because of the shortage of cash and facilities.' This can be found in several Labour Party documents, notably 'Labour's charter for health', published last year. In an attempt to mobilise people to defend the NHS, this focussed on selected individual items of 'bad news' rather than trying to confront Conservative claims of overall improvement.

It is in the interests of any government to broadcast the good news and to play down the bad news which occurred during its period of office as the example of the perinatal mortality rate shows. Conversely, the opposition publicises bad news. This conflict diverts attention from important questions such as the value of technological innovations.

Most statistics on the national health and its Service are collected as a byproduct of legal and administrative processes; they are not designed to measure the health of the population nor the outcome of medical care. Any government genuinely interested in obtaining 'value for money' from the NHS needs to invest in statistics which are better suited to measuring the effectiveness of the services it provides. The present Government has merely cut the statistics we had.

References

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