

three quarters of the population thought that AIDS was "very frightening." This varied considerably according to age, with fear among young people increasing from 68% in 1986 to 80% in 1987. Finally, nearly all of the population and 99% of 15-24 year olds understood that AIDS can be transmitted by drug misusers sharing needles.

Discussion

Three trends emerge from the surveys. Firstly, there is evidence of increasing awareness about the broader risk from AIDS to the general public as well as to high risk groups of drug misusers and homosexuals. Thus although almost everyone knows that behaviour such as injecting drugs can spread AIDS, fewer people associate the syndrome with specific groups only. Secondly, it is clear that there is still great concern about AIDS, with increasing proportions of the population seeing it as a serious social problem. This anxiety is most evident and is increasing among young people, eight out of 10 now claiming to find AIDS "very frightening." Thirdly, there is a demand for more information about AIDS, especially from young people.

Knowledge of the broader risk to heterosexuals from AIDS therefore seems to be getting across, although it is clear that there is now considerable anxiety about AIDS, particularly among young people. The next step is to help people resolve the anxiety, which can best be done by giving them information on how to reduce their own risk from AIDS. In particular, information on safe sex needs to be targeted at young people. Because people are acknowledging their need for information about AIDS there is a great opportunity to do this successfully, although such material must be carefully designed to meet their specific requirements.¹ The government's latest media campaign dealt with the important issue of drug injection and AIDS and was aimed at subgroups at risk in the

community, but did not include broader education. It is reassuring that the Health Education Authority will focus on relationships in its future AIDS publicity.

The findings also suggest that any campaign whose objective is making the public aware of the connection between drug injection and AIDS is unnecessary, as almost everyone knows this already. Indeed, our past research showed that this was one of the first things people learnt about the syndrome,² and subsequently much effort was required to communicate the broader risks involved.

The results also show that there is little to be gained by trying to induce fear or anxiety to reinforce existing knowledge of the connection between drugs and AIDS to deter potential intravenous drug users. There is clear evidence of considerable and increasing anxiety about AIDS, especially among young people. Reinforcing such anxiety by arousing fear is widely acknowledged in advertising to have little long term effect since it merely induces defensiveness and with it rejection of the personal relevance of the message.

Finally, there is a need to address the fact that some people inject drugs despite their knowledge of and fear about the risk of AIDS. Media campaigns are notoriously bad at dealing with this type of knowledge-behavioural inconsistency where the behaviour is so emotionally entrenched. Face to face methods are more effective, and the opportunity now exists for work to be carried out in this area.

References

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Current Topics

Focus on performance indicators

STELLA LOWRY

Performance indicators are statistical data that allow comparison of all district health authorities. The government announced last week that it wants these indicators to be given much more attention—nationally, by regional and district health authorities, and by the public and members of parliament. Soon after Easter each district health authority will receive a package showing how its indicators compare with those of other authorities over the past four years. This information will also be published. The districts will be asked to analyse their results and make the analysis widely available—to, for instance, the public, members of parliament, members of community health councils, and local newspapers. Regional health authorities will also be asked to analyse the indicators, declaring

whether they are satisfied with variations across their regions and with progress being made to improve performance.

Mr John Moore, the Secretary of State for Social Services, last week addressed the British Guild of Newspaper Editors and sold performance indicators hard. "We are," he said, "the first country in the world to publish such a comprehensive set of comparative information. . . . People from outside the NHS can look at and evaluate how individual health authorities are doing. . . . The indicators place the emphasis on the critical examination of services. They raise questions, provide a means of helping to diagnose problems and then suggest possible solutions to those problems."

So what are these performance indicators, how should they be used, and, importantly, what are their limitations? This article addresses these questions, while on p 999 a distinguished surgeon, Mr R M Kirk, describes how he has fallen foul of the indicators.

The Department of Health and Social Security began working on performance indicators in 1981, producing the first package in 1983.¹ Much of the early work was done by the Health Services

Management Centre at the University of Birmingham. Initially it gathered information about units treating mental illness and mental handicap,² but now this is collected for all specialties. In July 1983 the Joint Group on Performance Indicators was set up to advise the Secretary of State on their future use. The present package contains several hundred indicators, many of which are simple ratios such as beds per 1000 catchment population or numbers of patients per nurse. The table shows examples of data used as indicators. The information is taken from DHSS forms that are completed routinely by each unit.

Data used as performance indicators (by permission of Health Services Management Centre)

District based indicators	District based socioeconomic indicators
Net patient flow—indicates the balance of patient flow into and out of the district (catchment population/resident population)	% Residents over 65
Unit size—measured by the number of available beds	% Pensioners living alone
Waiting list No per 1000 catchment population	% Children under 5
Waiting list No per 1000 resident population	% One parent families
Waiting list No per available bed	% Unskilled workers
% Non-urgent cases waiting over one year*	% Unemployed people
% Urgent cases waiting over one month*	% Population mobility
Available beds per 1000 catchment population	% Ethnic minority
Available beds per 1000 resident population	% Households lacking amenities
Length of stay	% Overcrowding
Length of stay (including day cases)	Composite indicators:
Turnover interval	Jarman 10—weighted index of 10 variables above
% Empty beds	Jarman 8—index adapted for use by BMA in studying underprivileged areas
Throughput—discharges and deaths per available bed	Unit 9—equal weights for nine of the above variables
Throughput (including day cases)	Social 6—weights for six of the above indicators based on those given for a social index of deprivation in the Department of the Environment
Discharges and deaths per 1000 catchment population	Hospital based indicators**
Discharges and deaths per 1000 catchment population including day cases	Size of hospital
Discharges and deaths per 1000 resident population	% Residents over 65
Day cases per 1000 catchment population	Residents per consultant
Day cases as % of discharges and day cases	Residents per total nurses
Day cases per 1000 resident population	Residents per total therapists
Outpatient sessions per 1000 inpatient catchment population	Residents per psychologists
Outpatient sessions per 1000 resident population	Length of stay
Outpatient attendance rate—ratio of total to new outpatients	Residents per qualified nurse
Outpatient clinic size—total outpatients per clinic session	% Qualified nurses (as % of total nurses)
% New outpatients	% Nurses in training (as % of total nurses)
New outpatients per clinic session	Residents per other medical staff
New outpatients per 1000 catchment population	% Empty beds
New outpatients per 1000 resident population	One year size reduction (based on number of residents)
Total outpatients per 1000 catchment population	Five year size reduction (based on number of residents)
Total outpatients per 1000 resident population	% Residents under age 16
New outpatients per inpatient discharge	% Qualified nurses—(as % of total nurses excluding nurses in training)
Outpatient clinic sessions per available bed	% Deaths (as % of discharges and deaths)
	% Deaths (as % of residents)
	Residents per qualified occupational therapist
	Residents per other therapists
	Residents per other occupational therapist
	% Residents in hospital over one year
	% Residents in hospital over two years
	% First admissions
	Residents per total nurses—adjusted (total nurses less half of nurses in training)

*Surgical specialties only.
**Mental institutions and mental hospitals only.

None of these data are new but the performance indicator package presents them ranked for all districts so that any unit can be identified and compared with all similar units. Each indicator is a crude statistic and there is no "correct" result for any of them; rather their value is in the concept that a ranking at an extreme of the national distribution may require further investigation. If several related indicators all appear at an extreme this may be even more suggestive.

Initially the indicators were presented as a book, but they are now available on floppy disk for use with BBC computers. The package presents the information graphically as scattergrams (fig 1), histograms (see fig 2), and percentile bars (see fig 3). Comparisons with other units, multiple indicators in any one unit, or changes in any indicator with time are easily displayed. In figure 2 a complete

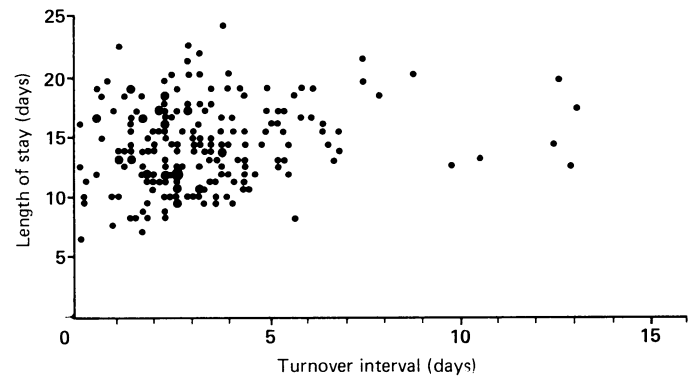


FIG 1—Scattergram. Length of stay against turnover interval by district orthopaedic surgery, England 1977. (Reproduced by kind permission of the Health Services Management Centre.)

region (■) and two districts within it (1 and 2) have been identified within the national figures. The package provides a huge data bank which should help users to answer their specific questions. The information from the Birmingham group was available to anyone working in the NHS,³ but in 1987 it ceased to produce yearly data and all the information now comes from the DHSS's own package based on the recommendations of the Körner steering group.⁴

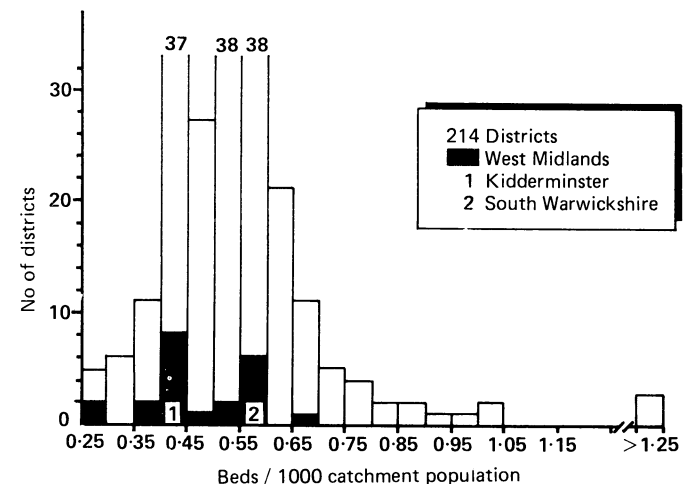


FIG 2—Inter authority comparisons 1986. Beds per 1000 catchment population for general surgery. (Reproduced by kind permission of the Health Services Management Centre.)

Limitations

Like any other tool, performance indicators have disadvantages of which users should be aware. The information may be incomplete or inaccurate. Figure 2 shows an extreme bar (>1.25); this might be an area with an excellent supply of beds but might also be due to incorrect data. The accuracy of the indicators depends on the care with which the original data are submitted. Units using the indicators regularly must ensure that their own data are correct and should challenge any that seem to be erratic. The responsibility for maintaining accuracy lies with the users.

Another restriction on the use of indicators would be a long time lag between submission of the data and the production of the package. Again, control of this lies with the user. In theory, computer technology allows the data to be processed in three weeks. Any delay beyond this is due to the time for the slowest district to submit its returns.

The greatest disadvantage of the indicators lies in their potential misinterpretation. There may be a valid reason why a unit should

appear in the bottom ranking of any given statistic and studying other related indicators may provide the explanation. The Birmingham group ensured that all printouts from its package carried warning notes indicating unusual results and suggesting some possible explanations (fig 3). These were to alert the user to the need for careful interpretation. If their limitations are properly understood the indicators become valuable management tools to highlight topics that need further inquiry.

Commentary

The indicators below are just a selection from a large list of available indicators. Two of the values shown for your district appear unusual compared with other districts.

There appears to be a high average stay compared with other districts. Sometimes this is because of a high proportion of elderly patients, a complicated case mix, poor housing conditions, or inadequate provision of primary care services. Unless such factors are very significant in your district, there may be some scope for re-examining discharge policies.

There is on average a very short gap between the discharge of one patient and the admission of the next. If the figure is artificial because of an incorrect bed allocation then this should be corrected. If, however, the short turnover interval is caused by bed borrowing and very intensive use of the specialty's beds, then serious consideration should be given to increasing bed stock or reducing admissions and length of stay.

Indicator Range (mean)	Value for district X	Position relative to other districts (expressed as a percentile)					
		0	20	40	60	80	100
Waiting list per bed 0.00-19.44 (6.09)	7.84						*
% Non-urgent waiting >1 year 0.00-68.91 (26.75)	19.19			*			
Beds per catchment population 0.28-1.61 (0.52)	0.44		*				
Length of stay 4.35-10.87 (6.70)	7.88						■
Turnover interval 0.00-17.59 (2.00)	0.65	■					
% Day cases 1.24-63.79 (20.76)	36.79						*
Outpatient attendance rate 1.77-4.72 (3.27)	3.77					*	
Outpatient clinic size 14.91-53.05 (28.28)	27.29			*			

FIG 3—Inter authority comparisons 1986. General surgery district profile. (Reproduced by kind permission of the Health Services Management Centre.)

An individual may lack the skill to explain any given result, but if worrying rankings are discussed by all interested parties an explanation should be discovered or a solution found. In figure 3 there is a long waiting list and relatively few beds per 1000 catchment population. It might be argued that more beds are needed. Nevertheless, the most extreme figures are a long length of stay and a short turnover interval between patients. If these extreme values are investigated it may be possible to improve the waiting list figures.

Just because a unit appears near the top of the ranking does not mean that there is cause for complacency. The overall standard may be low with all units needing to improve. If there is genuine excellence in a particular discipline the reason should be identified so that the position can be maintained.

Need for data on cost and outcome

At present performance indicators provide little measure of outcome. Certainly there is no means of measuring quality of care and possibly units performing few procedures are achieving a standard of care that is more important than quantity. This gap in the data worries many doctors and will probably be a target for future research.

There has been little attempt to provide costing data but managers are likely to demand more of this information. Many doctors think that costing is not an aspect that can be easily measured or fairly compared and again this should generate much discussion.

Don't fight the indicators, use them

There is now so much emphasis on saving money and providing an efficient health service that inevitably performance indicators are here to stay and probably their scope will increase. Rather than resist this trend doctors should familiarise themselves with the package and its potentials. The data are only statistics and it is their interpretation that is important. Doctors are better placed than most to do this, and if they are clever will turn the figures to their own advantage. There is no reason why this management tool should not be used to campaign for more resources for the health service as a whole or units within it. The ultimate aim is to provide an efficient service that benefits the patients. Doctors need to learn how to use the tools that will help to achieve this.

I thank Mr Jon Ford (BMA Economic Research Unit), Dr John Yates (Health Services Management Centre, University of Birmingham), and Mr John Bodger (Unit General Manager, Dudley Road Hospital, Birmingham) for their help in preparing this paper.

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CLINICAL CURIO

Water intoxication due to toothache

A 32 year man was admitted to hospital having had a series of grand mal seizures earlier that day. He became progressively more drowsy and was unconscious on admission to the neurological unit, with dilated pupils, brisk reflexes, and extensor plantar responses. His plasma sodium concentration was 109 mmol/l, with urine and plasma osmolalities of 98 mmol/kg and 229 mmol/kg, respectively. Computed tomography was normal. Water intoxication was diagnosed, and he passed 9 l of urine in 12 hours, despite having no intake. Serum biochemistry returned to normal in 48 hours, and he regained consciousness 24 hours later without residual neurological deficit. He was then able to tell his doctors that he had suffered severe toothache on the day of his admission and was unable to obtain emergency dental care.

The only measure which relieved the pain was to drink cold water, swilling it over the affected tooth. His wife said that he had drunk "a bathful" of water.

It is striking that such an innocent set of circumstances gave rise to such a serious illness. Water intoxication is almost always iatrogenic or associated with psychiatric disease,¹ but our patient had no psychiatric illness and took an apparently logical measure to relieve his pain. It is apparently possible to drink a life threatening quantity of water before any feeling of satiety arises to prevent it.—RODERICK DUNCAN and PETER O BEHAN, Institute of Neurological Sciences, Glasgow G51 4TF.

1 Ferrier IN. Water intoxication in patients with psychiatric illness. *Br Med J* 1985;291:1594-6.