Current topic

Much data but limited information in the NHS

R MacFAUL

Paediatric Department, Pinderfields Hospital, Wakefield

The report *Where are the children?* used routinely gathered NHS data from 1984 to determine where children admitted to hospital were being cared for and whether Department of Health and Social Security (DHSS) guidelines of some years standing were being followed.¹ These were the best data available nationally but the study showed several major defects.

Defects in data gathering

Although the regions were generally able to provide data on specialities admitting children, problems occurred in the following areas:

(1) CONFUSION IN IDENTIFICATION OF SPECIALITY CARE

Newborn babies receiving 'transitional care' may not have been identified and this may be one reason for variability in admission rates to special care baby units. Babies who have undergone surgery may be discharged from these units as a 'newborn' rather than a 'surgical case' and not be credited to that speciality. In older children, especially in children's hospitals, children receiving care from a paediatric surgeon may be recorded simply as a general surgical or urological case to the obvious disadvantage of the speciality of paediatric surgery.

Difficulties arose in comparing districts when treatment of children with infectious disease differed: their care being undertaken by either paediatricians or infectious disease consultants.

In intensive care units where a 'discharge or death' only is recorded, children may be undercounted because children were identified only when a death occurred: children transferred back to the children's ward were not recorded and, of course, children are rarely discharged home from an intensive care unit.

No data were available on children attending outpatients or, except for a few districts, accident and emergency departments, nor for those attending diagnostic or therapeutic departments.

(2) ADMINISTRATIVE DATA INADEQUACIES

In several regions definitions or identification of wards dealing with children were inadequate with obvious implications for nurse staff establishment and facilities for parents. Indeed it was of concern to find that no information was available from districts on the numbers or location of registered sick children's nurses.

(3) DAY CASE OR WARD ATTENDER?

Day case admissions of children pose a particular area of difficulty. Most children's wards experience a considerable 'unlogged' workload from ward attenders, which often amounts to a further 20% of their recorded inpatient numbers.² There appears to have been wide variation in the recording or definition of these cases.

Children in hospital

Despite these defects a broad picture of care of children in hospital in 1984 became apparent.

WHERE WERE THEY?

There were 878 553 child inpatients (age 0 to 16), which represents 16% of all hospital admissions of all ages to all NHS hospitals in 1984. Of these children, a half were under 5 and a third under 2 years of age. Although some of these will be readmissions of the same child, some idea of the scale of demand upon inpatient facilities can be obtained by stating that these figures would represent between 7 and 10% of the total population aged 0 to 16 or for the age range 0 to 4 years, 11 to 18% of the population of that age group in England in 1984.

About one in four children discharged still appear to be from an adult or mixed ward.

Most regions admit between a third and a half of adolescents with medical conditions under the care of general (adult) physicians, nearly all of these teenagers being treated on adult wards.

WHO CARED FOR THEM?

Paediatric medical staff were directly involved in 43% of these child admissions in addition to their care of normal newborn babies. The remaining 57% of child admissions were under the care of surgical specialties when paediatric medical staff are often involved assisting in the care of small babies. Nursing staff always are involved of course. There has been an increase in the number of admissions to hospital over the period 1974 to 1984, especially in the younger age groups, despite the (slow) growth in the use of day care. There is also reason to believe that day cases have been significantly undercounted.² These changes have major implications for the nurse staffing establishments of childrens' wards and for the provision for parents and families.

New data and information systems

The defective data collection will come as no surprise to clinicians all of whom are probably aware of the considerable energy and expense directed to the improvement of NHS information in the form of the development of performance indicators and from April 1987, the introduction of the recommendations of the Körner report.³ It seems timely to examine what is happening to see whether the changes will be of help to paediatricians who perhaps more than other specialists are used to reviewing NHS statistics relevant to their work.

Performance indicators

'Performance indicators are designed to inform judgements about how well NHS services are being provided'.⁴ The first package of performance indicators⁵ provoked a mixed response⁶ and while some of those available were of interest others were of little value. 'Tracer conditions' were selected in a rather odd way or were based on insufficiently precise diagnostic data. It is already possible, however, to obtain a display of the workload of a paediatric unit related to population served (catchment or resident) and of the bed number, clinics, and staffing resource to meet these demands (although the medical manpower data on which this information was based were incorrect). Some clinicians are not aware that their district will have this information on computer disc from the John Yates district profiles⁷ and the DHSS performance indicators package.⁸

The display allows comparison with other units in the region or nationally in the form of a histogram. Future refinements of these data should allow provision for children to be measured against a minimum standard which could be set (but by

whom?) so that those districts falling far below this could make strong cases of need for the problem to be rectified. Attempts to examine certain data such as length of stay or admission rates for specific conditions—'tracer conditions', for example, asthma—may allow comparisons between districts. The purpose to which this comparison is to be put is still questionable, however, and although it may highlight local problems and in this way prove useful (for example, social adversity or differing clinical practices), it is essential that the data are analysed by managers and clinicians working together. It is also essential that the diagnoses chosen for these 'tracer conditions' are such that districts will be comparing like with like (somewhat unlikely until the input of diagnostic codes is improved considerably).⁹ The information that comes out, of course, is only as good as that put in. Clinicians have a major responsibility here to assist those recording these data with the use of codes from the International Classification of Diseases including sometimes the use of the fifth digit necessary, but rarely used, in a number of paediatric conditions.

The new performance indicators proposed in 1987⁴ attempt to build upon the experience of the use of the first DHSS package and of John Yates district profiles.⁷ Consultation has taken place but it remains to be seen whether it will be necessary to await the next but one package before adjustments are made in the light of the comments received by the DHSS.¹⁰

There are already some evident difficulties. Emphasis is given to basing the workload in a district on the resident population or catchment population as perceived by a health authority. While this will work in most areas it is not appropriate in inner cities or in regional centres providing a tertiary referral service. Indicators should be interpreted in the context of the nature of the population served and these data are available based on data from the Office of Population, Censuses and Surveys from the John Yates district profiles on computer disc for each district in the form of a 'Jarman' index (which includes information on numbers of children under 5, one parent families, immigrants, and the unemployed, etc).¹¹ Some consideration should be given to showing the *type* of work done in a department in future. The neonatal data need to be improved to identify neonatally trained nurses for example, or numbers of babies treated after transfer in utero. Some of the data being collected in the community will be of no value unless what is being collected is defined much more precisely—for example, when schoolchildren being examined are counted it is not made clear who is examining them: nurse or doctor. Hopefully after recent events, the

original lack of intent to count nurses who are trained to work with children, for national comparison, will be rectified.

Körner reports

The systems recommended by the Steering Group on Health Service Information (Körner reports) make an avowed start on the improvement on NHS information.^{3 12} Patient information systems are used which replace the statistics of SH3, hospital activity analysis (HAA), and hospital inpatient enquiry (HIPE) and provide minimum data sets aimed principally to provide:

‘... information for the health services management. Thus we have not tackled specifically the information needed by health professionals to evaluate the results of their care; nor that needed by individual professional bodies to review the resources available to aid the professional work of their members’ (paragraph 2.7, First report).³ Maternity services are excepted from this, however, as there is an intention to assist clinicians ‘in reviewing the process of their care’. Nevertheless, paediatricians should attempt profitably to use the data that are held combining this with the data from performance indicators to obtain a picture of their practice from the managers viewpoint.

A major drawback of the Körner reports are that ‘outcome measures’ (the result of therapies) are not fully considered and there is a need to extend the dialogue with the professions to determine what these should be. It appears though that it could be some years before these would be credible in view of the inaccuracy of the diagnostic data held in the past.

Inpatients

The minimum data set which includes the diagnosis is to be collected on all inpatients and day cases. Ward attenders would only have this information collected if a decision is made to do so locally, which paediatricians could influence. Clinicians should note the new proposals relating to inpatient activity. Bed occupancy is no longer regarded as an appropriate indicator of efficiency of bed usage (paragraph 9.38, First report).³

‘From basic data such as the number of bed days intended to be used, actually available and used, and the number of patients treated, statistics can be derived which serve as indicators of the effective use of beds. However, the cessation of data collection about specialty bed availability means that traditional statistics which incorporate this measure such as specialty bed occupancy, specialty turnover interval and specialty throughput per available bed can no longer be calculated in the same way.’

Now a ‘ward inventory’ will need to identify those beds in aggregate for use by children as a patient group within the district and paediatricians, exercising their role of overall supervision of childrens’ services, together with the nurse managers should ensure this is correctly done. The availability of such beds can be analysed daily. Utilisation of these beds by differing specialties will be analysed in the form of *length of stay* and *throughput per available bed* (paragraph 9.41, First report).³ Such analysis will require that each specialty within a district have a nominal allocation of beds by management which are intended for its use. Each district will have to send to the region its intended use of beds for each specialty (paragraph 9.43, First report).³ Some of the beds allocated to each of the surgical specialties treating children and all the beds used by the specialty of paediatrics will be on a children’s ward. This change will be especially important for those districts which have up to now used the childrens’ wards on a very flexible basis and clinicians should be involved in the allocation. Under the new arrangements, when a bed is ‘borrowed’—for example, if a paediatric patient occupies one of the beds allocated for surgical use on a children’s ward—then the paediatric bed number is increased and the surgical number decreased for that day. Subsequently, the ‘throughput per bed’ will be calculated over the period using the additional bed number.

This change should provide a clearer picture of workload and should show inappropriate bed allocation. For example, an unusually high throughput per bed for paediatrics could indicate (a) an inadequate number of beds for the catchment population; or (b) be explained on the basis of an exceptionally high population of children in the population served; or (c) a popular subspecialty interest in the district; or (d) relatively deficient primary care or a deprived community in an inner city; or (e) an unusual case mix such as admission of head injuries under a paediatrician’s care.

Information from the data will be routinely available and separately upon both the activity of the ward and upon each specialty: and if necessary, each day’s activity can be examined to illustrate the fluctuations in usage. The summary will also show usage in terms of bed days and it will be easier to examine the relative use of childrens beds by specialty.

Clinicians will need to become familiar with these new systems of display of their work.

Outpatients

The recording of data on outpatients in surgical

specialties will allow local analysis of the attendances of different age groups and show the childrens' workload being dealt with. This must prove an advance for the planning of facilities for children. Also numbers of children attending therapeutic departments can be obtained but not regrettably the number of children attending diagnostic departments (pathology or x ray). It is a pity that diagnostic data are not to be collected yet on outpatients.

Community

There will be an increase in the data collected in the community but further experience needs to occur before it is clear whether this will be helpful to clinicians in child health practice.

Day cases/ward attenders

Part of the development over the years in paediatric practice has been an increase in ward attenders' work (although the scale of the increase has not been possible to measure as they have not been recorded). If a child attends under a regular arrangement to the ward then he could be regarded as an outpatient but this is unusual and most such patients will have been recorded (if at all) as a day case or even less likely, a ward attender. Under the Körner report recommendations this should improve (ward attenders will at least be counted) but only if the definitions are not regarded too rigidly: for example, a child who properly should be regarded as a day case because of the treatment received but who spends less than the defined 'few hours' on the ward or who does not use a bed could incorrectly be counted as a 'ward attender' on whom the collection of diagnostic data or a minimum data set is optional. Indeed it is highly desirable that the minimum data set is collected on ward attenders as it is on day cases,² and clinicians should press for this to be done in their districts. The pattern of care provided in this way is in the interests of children and units should not be '... penalised through failure to capture data about them' (paragraph 3.11, First report),³ as Körner has recognised. Such data collection is the first step in getting adequate staffing to meet this workload!

Neonatal practice

Under the recommendations of the Körner report newborn babies are recognised as a specific patient group and indeed the type of care received (normal, special, or intensive) will be recorded. The minimum data sets, however, will incorporate the

expanded information, endorsed by the British Paediatric Association (paragraph 6.14, First report)³ only as a local option which should therefore be pressed for. It may be necessary to point out that the admission of a newborn differs from a paediatric admission and its activity must be analysed separately and that each maternity bed does not have an associated neonatal cot (some are antenatal beds).

Comment

In order that the data derived from the Körner report or performance indicators are to be valuable in child health practice, it is essential that its limitations are known to clinicians and to managers. It may be a faint hope that too much decision making is not to be based on the presently available data until their accuracy and completeness have been substantially improved. The information needs also to be interpreted in the light of local circumstances rather than be used to provide managers with a goad to provoke greater effort from already pressed clinicians or worse, as a reason for removing resources from a service which superficially appears to be overprovided or underused. In some instances hopefully, the data will be of help in obtaining greater resource but again only if interpreted in the light of their limitations and local conditions.

Managers must understand the nature of paediatric practice—that is, practice which is largely responsive to uncontrolled demand that fluctuates over the week or year—and clinicians should be prepared to help them to do so. Also that while older children especially are treated at home, there is an increase in the admissions of babies to hospital (with increased needs for nursing staff and for doctors skilled in their care). Consequently while a children's bed in the district may be empty a *suitable* bed (for example, a cot and cubicle for a small baby) may not be available. Also when childrens' wards are full, children cannot be slept out on an adult ward. Thus it is necessary and desirable to have unoccupied beds to retain flexibility even though on 'performance' this is likely to be regarded as a bad thing.³ Similarly, relatively high numbers of return visits to outpatients or as ward attenders may represent good practice in supporting primary care of such chronic conditions as epilepsy or in treating acute or complex illnesses at home.

Buried in non-paediatric statistics are measures of workload provided for children, and managers may need to be guided to recognise this by the display of inpatient and outpatient data in the age bands 0 to 16 years or in smaller bands.

It seems inevitable that 'performance' will con-

tinue to be evaluated in some way from henceforth for a variety of purposes. Paediatricians should ensure that some of these purposes are their own. There seems, for instance, little doubt that centralisation of all childrens' services on one site will lead to the most effective use of resource—the manager's first priority—and the best service for children and their families—the paediatricians'.

The new arrangements for analysis of work patterns does, however, place considerable responsibility upon clinicians to ensure that the system will operate in the best interests of their service and the children they serve.

References

- ¹ Thornes R. *Caring for children in the health service. Where are the children?* Joint Report from Working Party of British Paediatric Association, National Association for the Welfare of Children in Hospital, National Association of Health Authorities and Royal College of Nursing, 1987. (Available from British Paediatric Association, London.)
- ² Thornes R. *Caring for children in the health service. Hidden children.* Joint Report from Working Party of British Paediatric Association, National Association for the Welfare of Children in Hospital, National Association of Health Authorities and Royal College of Nursing, 1988. (Available from British Paediatric Association, London.)
- ³ Körner E, chairman. NHS/DHSS Steering Group on Health Services Information. First to sixth reports, 1982 to 1984. London: HMSO. (Körner reports.)
- ⁴ Performance indicators group. *Performance indicators for the NHS. Maternity and childrens services.* Consultation paper No 9, June 1987. London: DHSS.
- ⁵ Performance indicators, July 1984. London: DHSS. (Computer discs and booklet.)
- ⁶ British Paediatric Association. Response to performance indicators, Oct 1984. (Available from the British Paediatric Association, London.)
- ⁷ IACC. *Interauthority Comparisons, 1986 and Medical Manpower Comparison, 1986.* Birmingham: Health Services Management Centre, 1987.
- ⁸ DHSS. Performance indicators package 1986/87. London: DHSS, 1988. (Computer discs and booklet.)
- ⁹ Sunderland R. Inaccurate coding corrupts medical information. *Arch Dis Child* 1985; **60**: 593–4.
- ¹⁰ British Paediatric Association. Comments on *Performance indicators for the NHS*. Document 50, Sept 1987. (Available from the British Paediatric Association, London.)
- ¹¹ Interauthority comparisons and consultancy. *1981 Socioeconomic data for district health authorities.* Birmingham: Health Services Management Centre, 1985.
- ¹² Windsor P. Introducing Körner. *British Journal of Health Services Computing*, 1986. (BHJC Books.)

Correspondence to Dr R MacFaul, Paediatric Department, Pinderfields Hospital, Aberford Road, Wakefield, West Yorkshire WF1 4DG.