Bed occupancy not an index of efficiency

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Summary: It is not possible to achieve high bed occupancy in an acute children's ward without serious detriment to the local community. Analysis of a year's admissions shows that 'short stays' and high turnover rates must produce low occupancy, and that this represents efficient management.

Bed occupancy, as an index of efficiency in the hospital service, is a concept to which administrators are dedicated. An article, in which the difficulties in achieving full bed occupancy were examined, still made the assumption that high occupancy represented efficiency, although the authors were aware of the problems. This short report shows that some hospitals exactly the opposite is the case. Full occupancy can represent serious inefficiency. My model for this statement is an acute children's ward at a district general hospital.

The main children's ward at Wigan Infirmary provides the main place of admission for all acute medical paediatric problems (with a small supporting ward taking some patients, particularly those with gastroenteritis). The main ward also takes the majority of acute general surgery and acute orthopaedic surgery, and all the acute eye, ear, nose, and throat, and other special surgical problems in children from a population of about 320,000. The ward has 40 beds. The throughput has increased from 927 in 1958 to 2254 in 1978. The average length of stay has decreased from 12 to 3-6 days during the same period. Despite the higher rate of admissions the bed occupancy has decreased during the same period from 83 to 57%. This is the only ward available for most acute medical paediatric problems; our patients have nowhere else to go; they cannot be diverted to another hospital in the town, nor can they go to another town. We must always be ready to accept any admissions. To achieve this we must have empty beds (not only empty beds, but empty big beds, empty little beds, and empty cots).

A ward which relies largely on emergency admissions for its input is at the mercy of unpredictable factors. The figures for the year 1978 for the ward showed 1975 emergency admissions and only 279 list cases. The admission pattern is illustrated in the Figure which shows the number of daily admissions during that year. On 63 days out of the year at least 9 children were admitted; and on one day, 15 children were admitted to the ward. The wide variability of demand on any given day is illustrated by these figures. This means in practical terms that it is necessary to work to a 55% bed occupancy in order to provide an admission service for the community.

It is fairly easy to keep medical paediatric beds full. It is only necessary, for example, to specify that a child with a febrile convulsion needs to stay there for 3 days instead of 24 hours. The same could apply to a child with a head injury (among other admissions for the year were 246 head injuries with an average stay of 1-3 days). It would also be possible to admit for investigation children whose problems are now being handled as outpatients or as 'day cases' (which are not recorded as admissions). There is a whole range of minor modifications of paediatric practice which could soon lead to a 90% bed occupancy or even higher, but this would be a disservice to the community. The ward I describe is neither typical...
nor unique. Every acute children’s ward has its problems which are the outcome of its history and geography; all share the problem of being at the mercy of unpredictable factors and of emergency admissions. They suffer also from the problem of having to have 3 different sizes of bed or cot. I am certain that similar experiences are common in district general hospitals throughout the country.

The object of this short report is to point out to administrators, and to others who do bed-occupancy sums, that they should not always use the same criteria to indicate efficiency in hospital action. They should look at each separate case and discover whether a full or part-empty ward really represents efficient management of resources.

Reference

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Received 6 May 1980

Ketotifen in the prophylaxis of childhood asthma

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SUMMARY A double-blind crossover trial of ketotifen, a mast cell stabilising antihistamine, was performed in a group of 23 young asthmatic children. No useful prophylaxis against bronchoconstriction could be shown.

Ketotifen, an orally-active cycloheptathiophene antihistamine, stabilises mast cells in vitro. This resembles the action of sodium cromoglycate in the prophylaxis of atopic asthma in cases where mast cell stabilisation prevents the release of histamine and other mediators on antigen challenge. Ketotifen has been shown to be effective in blocking antigen-induced bronchoconstriction in adults, and long-term studies have shown useful prophylaxis can be achieved in a proportion of atopic asthmatics with increasing effects over a period of up to 3 months (J Pepys, E Carrasco, in preparation). However, little is known about its effect in children.

Ketotifen is administered twice daily by mouth and in this respect it may be better than sodium cromoglycate, especially for children who are too young or too uncooperative to use a spinhaler. Apart from slight drowsiness, generally settling during the first few weeks of treatment, no significant side effects have been reported. We studied the usefulness of this drug in a group of young asthmatic children who were unable to use sodium cromoglycate by spinhaler satisfactorily.

Patients and methods

Twenty-three children (14 boys and 9 girls) completed a double-blind crossover trial with 2 months each on active and placebo treatment. The children ranged in age from 1 year 11 months to 5 years 3 months (median 3 years). Nineteen were between the 3rd and 97th centiles for height, 2 were above the 97th, and 2 were below the 3rd. One child was below the 3rd centile for weight but the other children were between the 3rd and 97th centiles.

Each one had suffered from recurrent wheezing attacks for between 10 months and 5 years. The onset of symptoms had been in the first year in 14 children, and in the second year in a further 8. Eighteen had a family history of asthma or atopic disease. Questioning revealed that wheezing attacks were precipitated by upper respiratory infections in all 23, by obvious allergy in 9, and by exercise in 18. Twelve children suffered from eczema also. Fifteen had at some time been admitted to hospital for asthma, and 9 had received courses of oral steroids. Of the 11 children who had skin tests performed, 10 showed multiple positive reactions to common antigens.

At the start of the trial each child showed moderate or poor control of his asthma with routine treatment. Routine treatment was regular or intermittent oral salbutamol alone in 16, and accompanied by orciprenaline in 2, and theophylline in 2. One child had a nebuliser at home and was treated with regular nebulised cromoglycate (Intal) plus salbutamol. Two children were receiving steroids: alternate-day oral prednisolone on a regular basis in one and beclometasone dipropionate (Becotide) rotacapsules in the other. Regular treatments were kept constant throughout the trial.