Improving paediatric inpatient care in rural hospitals

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Summary

The availability of literature on how to improve the care of paediatric inpatients in rural hospitals is limited. Some simple low-cost and cost-saving interventions will go a long way towards achieving better child care in hospitals. These interventions reflect the principles of good management and of primary health care.

S Afr Fam Pract 1988; **9:** 86-94

KEYWORDS: Pediatrics; Primary Health Care; Inpatients; Community Health Services; Rural Population; Culture.

Curriculum vitae

Paulo Ferrinho had his school education in Mocambique and then went on to the University of Cape Town to obtain the MBChB in 1980. He did his internship at the Groote Schuur hospital in Cape Town and then worked at the Gelukspan Community Hospital from 1982 to 1986. After that he became a registrar in Community Health at the University of the Witwatersrand. He is an enthusiastic researcher and vitally interested in primary health care and health care delivery systems.

Primary Health Care and Hospital Care

With the increased acceptance of primary health care (PHC) as the key to achieve health care for all by the year 2000[1] there is a need for hospitals to be involved in implementing the Alma Ata philosophy.[2,3] It is apparent that the most appropriate way for hospitals to integrate PHC principles in their own work is by expanding from simple curative care of inpatients to health promotion, to preventive health care and to co-ordinate hospital and community care.[3]

In this paper I enunciate simple low-cost and cost-saving interventions to improve the care of hospitalised children. I base my comments on a 4-year rural paediatric experience and I am fully aware that not all the ideas discussed here will be applicable everywhere. Many of the ideas developed here arose over the years from discussions with doctors and nurses that shared my concern for adequate child care. Most of these ideas revolve around the principles of good management processes in health care.[4,5]

I try to emphasise certain basic principles. The first is that improving inpatient care on its own will not have any significant direct effect on the wellbeing of a community. Most health professionals would agree that the health of the human population rests only in part upon the quality of the medical services to which they have access[6] but there is no doubt that patients are less likely to seek medical care when its quality is low.[7] Therefore improved quality of curative hospital care will result in better acceptance of and an increased exposure to the components of the PHC strategy that have less direct and less obvious benefits to the population (the preventive and promotive components).

The second principle is that this expansion will become easier if some of the PHC principles of prevention of diseases and promotion of health are

practised in the hospital side by side with curative medicine.

Thirdly, planning of services requires managers to go through a cycle of planning starting with a situational analysis followed by setting of objectives, strategies and an operational plan which is implemented and the evaluation of which will eventually allow a review of the initial objective. I particularly emphasise the very frequently neglected aspect of getting solid data on which to base the planning cycle.

Effective routine therapies should be reached by consensus.

Lastly, in trying to develop comprehensive services, medical and nursing managers need to have not only clinical skills that go with professional undergraduate training and the measurement skills already mentioned, but ought also to be competent and sensitive managers of resources and above all manpower. Some awareness of the social sciences will allow managers to have a better understanding of their hospital institutional culture and how this institutional culture can better interact with that of inpatients and that of the outside community.

Rural children as inpatients

Fifteen per cent of a rural population comprises children under 5 years of age.[8, 9] The morbidity and mortality profile of this age group reflects the particularly stressful environment of the rural household. Their undue share of diseases is reflected by high hospital admission rates. For example in 1984 children under 13 years of age accounted for 40% of all admissions to the general wards of the Gelukspan Community Hospital, and over 75% of these children were less than 5 years of age.[10] In Taung in 1977/1978 children accounted for 32% of admissions and those of 2 years or less made up for 68% of paediatric admissions.[11]

Stable ward teams are necessary for optimal functioning.

It is surprising therefore that the literature on how to improve care of rural paediatric inpatients is very limited.[12, 13]

Common problems of rural paediatric care

Although children account for a significant proportion of the admissions in rural hospitals, this is not considered when these hospitals are built. The space allocated to them is proportional to their size rather than to their expected numbers. Gross overcrowding is the result with children sharing cots, linen, cutlery and, in winter, crowding around the available heaters (if these are indeed provided).

Children need attention for feeding, washing, dressing and playing. They cannot be trusted with medication. They demand attention and love. This is not considered when staff is allocated to their wards. Nurses are allocated to a ward as a ratio of nurses per ward rather than nurses per patient or nurses per expected workload. The result is a low staff-to-patient ratio with neglect of children and unhappiness of the staff.

Only rarely do we find paediatricians in rural hospitals. The doctors are young and inexperienced but enthusiastic. Although their commitment is not in doubt, their skills and their priorities are not always the most appropriate.

Even if a doctor develops a particular expertise in the field of child care, a great number of children are usually first seen and managed by doctors and nurses without this expertise (this is particularly true on night and weekend duties). The workload makes it impossible to carry out daily ward rounds; this delays discharges and sometimes necessary reassessments and the detection of complications.

Arrange an "intensive care corner"; and have the staff and facilities for special care.

The same problem of lack of skills is encountered amongst nurses. In the hospital this is compounded by the habit of rotating the nurses on a regular basis from ward to ward. In primary health care centres (clinics and outpatients) inadequately supported and trained nurses are faced with the responsibility to assess and diagnose and to decide on further management. When in doubt they will rather admit than send a child home. Therefore many unnecessary admissions come into the hospital.

Communication difficulties, introduced by distance, lack of transport and inadequate collection of surnames and addresses sometimes result in unnecessarily prolonged stays in the wards.

Stress, neglect, overcrowding, inadequate management and prolonged admissions are associated with iatrogenesis and nosocomial infections.[14]

How to improve child inpatient care

Priorities for child care should be policies that try to redress the root factors associated with childhood morbidity and mortality and try to make available to every child in the community appropriate PHC services.[15] The steps suggested below

will, I believe, improve child care in the hospital, will improve staff morale and productivity and will help to rationalise resources and redefine priorities, but on their own they will have very little impact on the health of the children of that community.

Inpatient paediatric care is not only dependent on what happens in the community hospital, but to a large extent is shaped by what happens in the rural household and in the peripheral primary health care centre.

The topic under discussion will therefore be covered under the headings of admission policies, hospital management and discharge policies.

1. *Development of admission policies*

A large proportion of the children coming into paediatric wards could have been managed on an outpatient basis. But in rural hospitals, admissions will depend not only on the nature and severity of the disease but also on the competence and confidence of the PHC workers establishing first contact with that child as well as on the availability of health services at the local level and on distances and transport facilities.[7, 16, 17] A common example of unnecessary admissions are those of children with gastro-enteritis where an appropriate simple technique easily used at the periphery (oral rehydration therapy) overcomes the need to admit children with dehydration.[18, 19, 20]

Mothers ought to be part of ward teams.

Other factors affecting management at the periphery are the working hours of the clinic or health centre and the availability of transport facilities or the distance from the house of the child to the clinic. The essential principle is that whenever justifiable, home treatment should be prescribed. When in doubt, and if possible, start treatment in outpatients or in the clinic and observe for a few hours before making a final decision. The man-

agement at the PHC level will be much facilitated by standing orders advising on the management of the most common conditions and the factors that would warrant hospital admission.[21, 22, 23] If a doctor or nurse is not sure about the seriousness of a complaint and on how to assess and or treat it, they will prefer to admit the child, trusting that in the hospital someone more competent will be able to provide better care. To overcome this problem of clinical competence at peripheral clinics more use should be made of nurse practitioners. These PHC nurses have proved appropriate both in developed[24] and in developing countries.[25, 26]

Children need attention, love, care and playing – they cannot be trusted with medication only.

When assessing his admissions, the doctor in charge of a paediatric ward should identify cases of "unnecessary" admissions and use them to give feedback to the health workers concerned. If it is a problem common to many health workers, develop written guidelines and add them to the standing orders available to the PHC workers.

To function effectively PHC centres where the admission decisions are taken need efficient means of communication with the base hospital.[27] In my own experience and in the experience of others,[21, 27, 28, 29, 30, 31] several technologies used for two-way communication have met with significant success. In rural areas of developing countries, a very promising technology is that of solar powered two-way radios. An approach to planning a two-way communication system is provided by Zukin.[32]

At least some time should be allocated for discharges every day.

2. *Hospital management*

Hospital management will be discussed under 5 headings.

- *Patient management policies*

Standardised and appropriate patient management policies would serve multiple purposes:

1. to reduce iatrogenesis and nosocomial infections;
2. to allocate time to patients according to the seriousness of the disease;
3. to reduce the number of invasive procedures and patient trauma;
4. to rationalise drug policies;
5. to reinforce non-pharmacological aspects of patient management;
6. to avoid diagnostic delays;
7. to screen for common illnesses and problems;
8. to shorten hospital stay.

Policies on diagnostic procedures will depend on available diagnostic resources. These policies should aim at maximising benefits, minimising invasive procedures and routinising procedures as much as possible.

Because tuberculosis is such a common problem in our paediatric population[33, 34] every paediatric inpatient should at least have a tuberculin test as a screening procedure. Those with positive tuberculin tests, failure to thrive[15, 35, 36] or suggestive symptoms should have chest x-rays.

Written guidelines can be given to the nursing staff on when to collect stools, urine and blood specimens.

Hospitalised children are at a particular risk of hospital acquired infections.[10, 14] This is particularly tragic because most of these infections are preventable. The risk of hospital acquired measles is a serious problem with a high mortality.[37, 38] An immunisation policy should therefore be developed

Whenever possible, give oral rather than parental, long-acting rather than short-acting therapy.

for all children being admitted to paediatric wards. Routine nursing procedures should be clearly spelt out and backed up by standing orders in order to prevent the risk of cross infections. This risk is particularly associated with fomites, clothing of staff, toilet articles, nursing equipment, instruments, bed linen, towels, hands (therefore emphasise hand washing between patients), water supplies, the milk bank and food.[39] This makes the point that hygienic procedures should be emphasised not only to those working directly with children but also with all those in indirect contact with the patients.

When in developing countries undernutrition is still so commonly associated with paediatric inpatient morbidity and mortality[10, 12, 40, 41, 42, 43, 44] there is no reason why weights should not be checked and plotted on admission and used as guides for adequate hospital management. It will emphasise that treatment involves not only drugs but that there are other not less important if simpler components such as nutrition rehabilitation, providing a loving environment[45] and maintenance of an appropriate environmental temperature. The occurrence of high rates of malnutrition, of common

pathologies that interfere with feeding (eg Herpes stomatitis) and of significant numbers of low birth weight neonates reinforces that patient management policies should put greater emphasis on nutritional aspects.

The most distressing deaths are those of low birth weight babies that aspirate. This is usually due to inappropriate feeding technique and inadequate positioning of the child. Both the mothers and the nurses and also doctors should be instructed on appropriate skills and techniques.[46]

Bottle feeding should be discouraged in the hospital in favour of the use of cup and spoon.[44] It is always possible to establish effective routine therapies for common categories of diseases (diarrhoeas, pneumonias, meningitis, hospital acquired infections, kwashiorkor). These policies should be reached by consensus after discussion with all the health workers concerned.

Unnecessary drugs should be avoided. Not only because poly-pharmacy is undesirable but also because it reduces the workload on the nurses. Whenever possible give oral rather than parenteral and long acting rather than short acting therapy.

In order to minimise its obvious dangers there should be a routine for checking drip rates on a regular basis. Proper procedures for parenteral treatment should be spelt out and adhered to.

If it is not possible for doctors to see all patients every day, it becomes essential to decide how frequently they must be seen. Some children will have to be seen every few hours by the doctor, some once a day and most less frequently. What is important is that the criteria for risk allocation of the patients should be known and understood by both nurses and doctors involved in admitting and caring for admitted children.

Any mother will gladly put up with discomfort and hardship, if only she could stay with her child in the ward.

Children needing frequent observations and intensive nursing care are frequently scattered amongst

all the other children in the ward, making nursing care difficult. These children should be concentrated in a corner of the ward so that one nurse can then concentrate on them. In this "intensive care corner" the ward should have all resources needed for special care (oxygen, largyngoscopes, suction, emergency drugs).

• *Analysis of patient management failures*

Paediatric inpatient mortality rates in rural hospitals are usually very high.[12, 40, 47] Several factors, varying from poor accessibility to the hospital resulting in delayed admissions, to the quality of inpatient care, are responsible for this mortality. In order to try and reduce these high rates every child death ought to be submitted to an informal inquiry trying to find out for example if it was an early death, ie less than 24 hours after admission (may be pointing to delayed admission), or late deaths (may be pointing to inadequate hospital management).[12] It is essential that as many postmortems as possible are carried out. These will help us to delineate diagnostic failures. Try and find out about preventable factors such as observations not done or not reported, drips that were too fast, treatment that was not given, delayed diagnoses, neglect of nutritional management, aspiration due to wrong feeding technique and others.

To make this inquiry less threatening and a learning experience the staff associated with the care of that child should be involved.

• *Ward management policies*

A team is a group with specific tasks where getting the task done requires the mutual help, support and understanding of the members of the group.[5] The Health Team consists of many component teams: the management team, the PHC team in peripheral clinics, ward teams dealing with the daily care of inpatients, etc. While some of these teams, for example the management teams, tend to have some degree of stability, others are so volatile in their composition, for example ward teams, that there is

Stress, neglect, overcrowding and prolonged admissions are associated with iatrogenesis and nosocomial infections.

no time for the team members to build the relationships of trust, mutual support, openness and acceptance required for optimal functioning. This results in poor productivity, poor quality of patient care, increase in conflict and hostility among staff, poor decision making and decision implementation, lack of commitment, initiative, imagination, and high dependency on doctors.[5]

To overcome the above problems and to develop well accepted policies, to promote the growth of skills, to create a sense of pride and commitment to children, to develop familiarity with routines and to ensure that tasks are properly allocated to the least trained person competent to perform them, the hospital management team should be firm in the decision to build stable ward teams.

To ensure continuity, a senior sister should be permanent in the ward staff. More junior nursing staff should be rotated only on a yearly basis. Doctors should remain in a ward for at least two years.

Space and resources are allocated to children in proportion to their size and not their numbers or importance.

Mothers ought to be part of ward teams. Unrestricted access of children to their mothers and vice-versa is a right of both mothers and children. The benefits of keeping mothers and small children together in hospital were recognised by Morley,[15] are vividly described in a mother's words by Barbara Webb,[48] and are well summarised by McCarthy (quoted in Waterson[13]).

Of many arguments against admitting mothers with their ill children, the two which carry most weight are those of lack of accommodation for mothers and cost.

Although lack of accommodation is a major problem from the hospital's view point it is not an impediment from any mother's point of view.[49] I still have to see my first mother who is not prepared to put up with discomfort and hardship to stay with her child in the ward.

As to cost it is just a matter of deciding if it is not worthwhile to pay for something that is really good and with obvious benefits.

It is undeniable that filling a children's ward with mothers will create a chaotic unmanageable situation. Our policy in Gelukspan was to admit mothers still breastfeeding, mothers that we thought might benefit from health education or when the condition of the child was serious.

While in the wards, all lodger mothers were taught health songs and given heatlh education (around GOBI-FFF topics) and before discharge they were expected to answer some basic questions around health education topics.

• *Health information systems*

Basic to all managerial activities is the flow of information. If accurate and appropriate information does not flow in an organisation, efficient decision making will be prevented. There are some

general rules for the design of information systems,[50, 51, 52, 53, 54] but commonsense and intelligent anticipation are good tools to start with.[5]

Information can be gathered sporadically by special surveys or may be obtained by a system of regular reportings and notifications. There is room for both in hospital management.

The importance of knowing the incidence of the various diseases occurring in a hospital or department has been emphasised by Davidson,[12] Grounds,[39] and Ross,[55]. It is an essential first step. What is the age group most commonly admitted? What sex? What are the commonest discharge diagnoses? What is the degree of malnutrition in hospitalised children? What are the determinants of spatial distribution of hospital utilisation in the region, and how do they relate to morbidity and mortality?

With this knowledge the clinician is more able to plan his work, train his co-workers, to simplify and standardise treatment for common conditions, help administrators in assessing priorities, planning preventive and curative health programmes and to emphasise the need to strengthen peripheral services.

It will also point to the need for expanding the hospital space available for paediatric inpatients.

• *Manpower development policies*

The hospital as an organisation and the individual employee are mutually dependent: the hospital for the execution of its tasks, for the sake of its existence, survival and growth; the individual for his livelihood, his career and personal growth. Job satisfaction of employees thus becomes one of the major concerns of the management team. The manager's task of manpower planning and development has two aspects: one is to predict future manpower requirements and the second is to plan for the development of the present staff.[5]

Inpatient care is shaped by what happens in the rural household.

It is this last aspect that we are particularly concerned with here. Individuals should be helped to improve their skills and qualifications and move on to posts of greater responsibility.[56] Opportunities for continuing education should be created at the formal and informal levels. The need for further education may be technical, administrative or dealing with relationships between people in the organisation.[5]

The problem of facilitating the ongoing education of isolated rural doctors has been addressed by Henbest,[57] and his emphasis on adult education learning principles and self-directed learning are equally relevant to nurses. Learning can take place by teaching, for example during ward rounds, or it can take place in on-the-job situations, individual reading, small-group learning, class-room learning, carrying out research programmes or encouraging staff to make use of opportunities for study leave.[4] The beneficial impact of a nursing inservice training programme on paediatric inpatient mortality has been reported from Mozambique.[58]

In my experience it is more difficult to criticise a colleague than to be criticised by one. But our commitment to patients and to a high quality practice gives us the responsibility of bringing to the attention of colleagues mistakes, alternatives and recent advancements. To facilitate this, opportunities should be created where it becomes appropriate and expected to make the type of comments mentioned above. These opportunities could be mortality analysis meetings or, for example, weekly rounds where problem cases are discussed.

3. *Development of discharge policies*

Development of appropriate discharge policies would ensure short hospital stays when appropriate, more frequent review of patients, adequate follow-up and more compliant behaviour. As discussed before, multiple factors are involved in delaying discharges from paediatric wards.

Adequate collection of names and addresses will allow the health workers to recall parents or take children home and to do follow ups.

Policies on when to discharge children with common ailments (low birth weight, fractures, diarrhoeal diseases, nutritional diseases, pneumonias) should be established. The nursing staff knowing that a child meets the criteria for discharge will be able to show that particular child to the doctor even if it is not his "round" day. At least some doctor time every day should be allocated for this. This interaction of nurses with patients and with doctors would also serve the double purpose of strengthening the status of the nurse *vis a vis* the patient and will consolidate the team spirit of the health workers in the ward.

Conclusion

The Alma-Ata declaration,[1] emphasises not only the technical aspects of PHC but also the philosophical principles that should guide health care. These principles place health care in the context of society's search for more equity and social justice as well as for more democratic processes.

Although these philosophical aspects are not addressed here, a more equal partnership between health workers, a greater awareness of the rights of children and their parents, the movement away from unnecessary or inapprorpiate curative care to more promotive and preventive care, will all contribute for more equity and justice in the promotion of health care.

Acknowledgements

In the preparation of this paper three persons offered useful comments. Professor John Gear, Head of the Department of Community Health at the University of the Witwatersrand provided me with encouragement to integrate my experience into a more philosophical framework. Emeritus Professor John Hansen of the Department of Paediatrics and Dr Karel Ijsselmuiden of the Department of Community Health of the University of the Witwatersrand helped me with an earlier draft of the paper. Dr Eric Buch of the Centre for the Study of Health Policy, University of the Witwatersrand, assisted me with some relevant literature.

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