Providing primary paediatric care*

JOEL J. ALPERT†
M.D.

*Department of Pediatrics, Boston University School of Medicine and
Boston City Hospital, Boston, U.S.A.*

PROVIDING primary paediatric care is but a part of the crisis in medical care delivery that presently exists in the United States. It is an important part however, since the public have generally responded quickly to health programmes for children when compared with other health programmes. For example, among the first health legislative actions taken by the United States Congress in the flurry of the 1960s were specific programmes providing payment for health services for children.

It is important to realize, however, that the medical care crisis in the United States is more than a financial one. Because of the National Health Service, the financial crisis is one that Great Britain, at least for the individual patient and his family, solved 25 years ago. However, there are aspects of the current crisis that involve manpower, the education of physicians, the measurement of outcomes of health services, and the measurement of quality of medical care that are of concern in both countries. Again, this is true especially in the area of primary paediatric care.

The term primary care is of relatively recent origin (White, 1967). It is a term increasingly used because it avoids some of the traditional disagreements that have surrounded general practice in the U.S.A. It is also a valuable term because it suggests that a number of different methods of providing primary care are possible and indicates that health care in and out of the hospital is a continuing process. Thus, the terms primary, secondary, and tertiary health care help in describing relationships and avoid undue focus on any one part of the total care system.

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† Professor and Chairman, Department of Pediatrics, Boston University School of Medicine and Pediatrician-in-Chief, Boston City Hospital. Dr Alpert was formerly the Medical Director of the Family Health Care Program and Associate Professor of Pediatrics, Harvard Medical School.

Primary care is defined as first contact health care but is obviously more than that. It is also continuous health care where the physician accepts responsibility for his patient over time and not just for an episode of illness. Thus, in the United States a primary care physician can take care of his patient in the hospital which is a site usually thought of as only associated with tertiary care. Primary care is co-ordinated and integrated care in that it does not deal with illness alone but also deals with health, not only with the individual but also with his family, and it is not only the individual physician delivering needed medical services but also the physician co-ordinating the services of other physicians and acting as the advocate of the patient. Finally, physicians do not provide primary care alone but, as in secondary and tertiary health care, other health professionals are involved in its delivery.

Secondary and tertiary care are somewhat easier to define. Secondary care is referral or consultative care, which may be in or outside of the hospital. Tertiary care is hospital care such as is provided in institutions like the Hospital for Sick Children or the Children's Hospital Medical Center in Boston.

Quantitatively the medical needs of children are greatest in the area of primary health care, Yet skills, knowledge and medical education have principally developed in the tertiary care field. For example, there is a gap between knowledge acquired in the tertiary care setting and its application in the primary care setting. The gap exists not just because of the failures of communication, but also because much tertiary care knowledge is not transferable in its present form to the primary care setting, nor is all of it appropriate for primary care. Since it may be just as important for knowledge to flow from the primary care setting to the tertiary care setting there must be continuing efforts to examine the content of primary care in its own setting.

The Harvard Family Health Care Program has attempted to approach these problems first by being an educational programme for medical students and residents (housemen and registrars) in primary care outside, but close to the hospital (Alpert, 1971).

It has also carried out research to examine some of the effects of the primary care provided to patients. Its research has also been in the area of medical education as well as in the health services. A number of broad questions have been asked about primary care education and primary care services. Three of these are related to the provision of primary paediatric care. First, does providing primary paediatric care make any difference to children and their families and can these differences be measured? Second, can primary paediatric care, at least as presently practised by physicians, be described and does this help us measure its quality? Third, are we presently educating physicians, both general practitioners and paediatricians, to deliver this care? These questions should be asked for both the U.K. and the U.S.A.

Does the provision of primary paediatric care make any difference? Some 10 years ago we undertook an experiment evaluating the health care offered in the Family Health Care Program (Robertson *et al.*, 1972). This programme, like a number of others, had developed in the United States after the second world war as an attempt to make students and residents aware of the needs of patients outside of the hospital (Snoke & Weirnerman, 1965). These programmes had in common an orientation to patients rather than the disease-focused approach that was so characteristic of medical care in the hospital. The programme provided students and house officers, working with a nurse and social worker, the opportunity to serve either as family physician or as family paediatrician to a small panel of families for a 1–2-year period. Although there was a turnover of physicians and students, relative continuity of health care for the families was provided, when compared with care ordinarily received by the families from the large number of physicians who staff hospital casualty departments and well baby clinics. This was not continuity when compared with the best of family practice, but the nurse, social worker, and supervising clinical faculty of the programme provided an element of continuity for patients.

For the experiment, a sample of 1000 low income families were selected from among users of the Children's Hospital Medical Center emergency clinic. The population in this sample was 40% black, 25% were receiving welfare payments, and the yearly income of the employed was only slightly above the welfare ceiling. The families were asked if they would participate in a health survey. If they agreed, they were then randomly assigned to an experimental group who would receive medical care from the Family Health Care Program or to a control group who would continue with the episodic and fragmented care typical of the urban poor in the U.S.A. After a baseline period, care was delivered for 3 years. At the end of the study, the control group was also

offered care in the programme. Data was collected before, during, and after the period of care by a research team different from the medical care team. The medical care was delivered by a team consisting of a fellow (approximately equal in training to a registrar), an experienced nurse and social worker. The physicians for the most part were equal in experience to those who staffed the hospitals. There were essentially no private practitioners in the geographic area near the hospital, which explained the patients' reliance on the hospital. By the end of the study approximately 600 families had been followed, and the analysis of the data is based on these 600 families. Most of the families who were lost in the recruiting period did not appear strikingly different from those who remained in the study. These lost families became part of a separate study that attempted to measure characteristics of families that fail to respond to an offer of medical care or, in the case of the control families, to participate in a health survey (White, Alpert & Kosa, 1967). Loss over the next 3 years averaged 7% a year and was similarly distributed in the experimental and control groups.

We attempted to study four dimensions of health: morbidity, utilization of health facilities, related attitudes and satisfactions, and cost. The data was collected by means of interviews at 6-month periods using structured questionnaires, daily diaries kept by the mothers for a 28-day period, and a review of hospital medical records.

No evidence was found in any of the instruments of a consistent and significant difference in morbidity between the experimental and control groups. Thus, primary paediatric care did not improve the short-term health of its recipients, but neither were they worse off for it. The possibility that an intervention effort has a negative effect should always be considered. There were consistently higher rates of preventive measures in the experimental groups such as immunizations, suggesting that there might ultimately be long-term differences in morbidity. In examining the short-term morbidity it was found, as in other studies, to consist almost totally of common illnesses and not of what is found in the teaching hospital wards. Moreover, by examination of the data in the health diaries, where mothers were asked to note possible upsetting events, it was possible to observe the very strong association between these illnesses and social and behavioural components of disease. Therefore, it is not surprising that a traditional medical care programme, even one that was alert to the possible influences of social and economic determinants of disease, could not affect morbidity which was influenced by the much more powerful forces of social class and poverty.

The study of utilization did indicate important

differences (Alpert *et al.*, 1968). The rates of hospitalization, surgical procedures, illness visits, and missed appointments were lower while the rate of health supervision visits was higher for the experimental group. The mean rate of hospitalization was about 20% lower for the experimental families compared with their controls. In addition, the duration of hospitalization was shortened by about 15%.

While illness visits were decreased and health supervision visits increased, total visits to the physician remained about the same. Thus, offering a more available programme of health care did not increase the burden on the physicians. How do we explain the decrease in illness visits without a change in morbidity? A possible explanation was that illnesses were handled by the families with the aid of the physician or other members of the health team over the telephone (a common American practice (Heagarty *et al.*, 1968)), during a health visit, or by not calling the physician at all.

As for missed appointments, only limited comparisons could be made within the sample since the control group did not have regularly scheduled health visits. However, looking at return visits for illnesses where comparative data was available, the experimental group averaged exactly half the broken appointment rate of the control group.

Beyond morbidity and utilization, the primary care programme aimed to change the relationship between the doctor and the patient. This would replace the impersonal relationship of the public clinic with the personal one seen in private practice. In general, the experimental families expressed greater satisfaction with their care than did the controls, although on certain psychological attitudes such as alienation, there was little difference (Alpert, 1970). The experimental families would turn to their new programme when medical help was needed. The families expressed a desire for family care which the programme did not completely deliver.

It was not possible to measure total costs in the experimental and control groups. However, in two areas costs were definitely lowered in the experimental families. Costs were lower because of the lower number and shorter duration of hospitalizations and because the experimental group received considerably less laboratory investigation (Heagarty *et al.*, 1970), without, incidentally, any observable detriment to diagnosis or treatment. In addition, the physicians in the comprehensive group appeared to prescribe drugs less often, which also resulted in a considerable lowering of costs.

Thus, even in the short period of this experiment, it was possible to document definite advantages for the experimental families, although not the difference in morbidity that the physician members of the research team had hypothesized. The failure of medical

services to affect short-run morbidity has also been found in other studies (Silver, 1963).

The second question, is, what is primary paediatric care, at least as practised by physicians in this study? From other studies we know that the content of primary paediatric care is directed towards areas such as growth and development, health maintenance, including anticipatory guidance, management of behaviour disorders, common infectious diseases and handicapping conditions (Breese, Disney & Talpey, 1966).

The programme provided a package of primary care treatment that was designed to cope with these and related problems. This meant that the physician, nurse, and social worker gave curative and preventive care, that this was given by a team, that it was not just the child but also his family that benefited, although the programme stopped short of accepting complete responsibility for the physical illnesses of adults. It was available as a group practice 24 hr a day and offered care in the patient's home as well as in the physician's office and on the needed occasion in the hospital. If a patient was hospitalized, it was as the private patient of the physicians in the programme. The operating theory of the programme was Caplan's theory of crisis intervention which means that if a health professional is available at times of crisis, then he is able to gain entry to a family's problems in a way that otherwise would not be possible, either because he is not aware of them or else because the family is, under normal operating conditions, not motivated or prepared to take action to deal with these problems.

It was not possible to associate any of the outcome differences noted previously with any one of the elements of the primary care package. It was not possible to say whether any of the outcome differences were due to the presence of the nurse or social worker or due to providing home care. It was possible, however, in a limited way to examine physician performance in the programme both by a time-motion study and by review of medical records to see whether there were consistent patterns of care provided that might have been associated with particular outcomes.

The time-motion study was carried out on fifty experimental patients seen for short-term illnesses in the programme office and fifty control patients seen in the emergency clinic. In the primary care setting patients did wait less time to see the physician. When they did see him, they spent more time face-to-face talking about the reason for the visit, because the physician spent less time reading the medical record. The experimental patients were more satisfied with the results of this visit and more likely to return for a follow-up visit.

The review of hospital records was accomplished

at the Children's Hospital Medical Center. Eleven physicians participated as care providers during the 3-year period. Unfortunately, there is no comparable data on the physicians who saw the control patients. Their number is far too large and there is not enough data on any one physician for the data to have any meaning. This review showed that the pattern of increased health visits and lowered illness visits was not true for all the physicians. While the mean proportion for health visits was 32%, the actual range was from 27 to 78% with similar wide ranges for illness visits and house calls (Table 1). These physicians were taking care of the same patients for approximately the same period of time and thus it is difficult to account for the wide range by any change in the patient population. This was made more dramatic by examination of the methods of management used by the physicians (Table 2). The range in the use of the laboratory was tremendous. Some physicians used the laboratory a great deal and others not at all. Antibiotics might be prescribed for one in fifteen patients by one physician or for one in five by another. Thus, there were no consistent patterns and the wide variation and small number of physicians made further analysis impossible.

Which of these widely differing actions represents

TABLE 1. Services provided by individual family health physicians

Service	As percent of all visits at the clinic	Range (lowest-highest) as percent of all visits/physician/6-month period
Health visits	31.9	11.1-47.8
Illness first visits	25.6	8.3-39.4
Illness follow-up	12.6	5.0-17.9
House calls	1.7	0.0-5.1
Mixed visits	28.3	0.0-38.6
Cancellations	9.4	3.1-15.6
Missed appointments	28.3	7.2-48.1

TABLE 2. Individual variations in diagnostic procedures and management used

	Number	As percent of all visits at the clinic	Range (lowest-highest) as percent of all visits/physician/6-month period
Diagnostic procedures:			
Laboratory	976	17.6	2.3-33.5
Culture	698	12.6	0.4-26.5
White blood count	66	1.2	0.0-3.9
X-ray	117	2.1	0.4-6.0
Management:			
Preventive	1478	26.6	15.1-43.7
Symptomatic	1841	33.1	19.7-45.3
Antibiotic	663	11.9	6.6-23.9
Other	270	4.9	1.2-11.8

quality? Is any one of these styles of practice associated with utilization differences compared with another? Is the physician who takes more cultures practising better medicine than his colleague who offers care at lower cost? Does the physician who takes frequent cultures prescribe antibiotics more or less often? What is the proper proportion of patients in a primary paediatric practice who require cultures? Unfortunately, these questions cannot be answered by this study. Moreover, standards in primary care have not been developed in the community setting but have been developed in the tertiary setting. The standards of the hospital or tertiary care setting have been used for the physician's office where they may be inappropriate.

Obviously, here is an area that needs further study. Both the American Academy of General Practice and the American Academy of Pediatrics are now engaged in such studies in the United States.

There was another important element that might have influenced the variation in these findings. This was the experiences that the physicians, who were all from the white middle class, had in dealing with an almost totally disadvantaged patient population who were often on welfare, black and poor. Although well-motivated, nothing in the education of these physicians had prepared them to deal with the experience of poverty, racism, inadequate housing and poor education (Heagarty & Robertson, 1971). Some of these families, who would exhaust even the most experienced and understanding health professional, were hard-core multiproblem families. How much of the variation observed in physician practice was a response to the demands of a poorly understood population? This leads to the third question which is, how well are physicians in the U.S.A. educated to deliver primary care?

The situation in the United States has been characterized as one in which 'specialoids' instead of general practitioners are delivering primary paediatric care (Fry, 1969). The 'specialoids' are paediatricians who have been educated almost exclusively in hospitals and who practise outside the hospital. Surveys over a 20-year period have documented the gaps that exist between training and practice and the fact that these physicians feel themselves ill-prepared for practice (Haggerty & Janeway, 1960). The diseases seen in the teaching hospital are rarely present in the community. One would not come to the Hospital for Sick Children to prepare for a career in practice in Paddington, yet that is the pattern of education in the United States. Our educational programmes have failed to take account of the changing morbidity and mortality in paediatric practice. A major reason for this is the exclusive role that the hospital occupies in the education of both undergraduate and postgraduate physicians.

We have examined this problem in two ways. In one study, we confirmed that the gap between practice and education still exists (Levine, Robertson & Alpert). More recently we examined the perception of learning of two interns at two university hospitals during their internships (Alpert *et al.*, 1972). This latter study used the critical incident technique, which is an outgrowth of research in aviation psychology in the second world war. The critical incident is an item of importance to an individual that results in success or failure in a particular part of his job. The incidents can be technical, interpersonal, or organizational. Each intern collected one incident each day for 1 year and recorded 610 usable learning experiences. For our purposes, we were interested in the nature of the learning experience (Table 3) and the source of the learning as judged by the intern (Table 4). Most often the experiences were noted because of an interesting illness which of course is a reflection of the major reason for hospital training. This was followed by an interesting procedure. While there were some interpersonal experiences with the patient and his family, these, and interpersonal experiences with the staff, were noted much less often. Illnesses were noted for the first time infrequently. Obviously, these are the intern's perceptions, and, in choosing only one incident, many other learning experiences were omitted.

TABLE 3. Nature of the intern's learning experience*

	Intern A (n=311) (%)	Intern B (n=299) (%)	Total (n=610) (%)
Illness interesting	82.0	64.3	72.0
Procedure interesting	44.0	29.4	36.8
Interpersonal with patient and family	15.8	4.7	10.3
Interpersonal with staff	14.3	2.9	8.8
First time illness seen	4.8	5.0	4.9
First time procedure done	2.2	1.7	1.9

* Percentages in this table add up to more than 100 because an experience can (and usually does) contain multiple elements and be coded in more than one category.

TABLE 4. Source of learning as judged by the intern

Source	Intern A (n=311) (%)	Intern B (n=299) (%)	Total (n=610) (%)
Own experience	45.4	31.6	38.5
From staff	35.3	41.0	38.0
From house officers	26.0	21.4	23.8
From conferences, rounds	11.3	17.6	14.2
From books, library	12.2	5.4	8.5
From patient's family	3.5	0.7	2.6
From nurse	1.6	0.7	1.1

When the intern judged the source of his learning, his own experiences ranked first. He learned a great deal from the staff but again, in his judgment, very little from the patient's family and even less from the nursing staff.

While a considerable amount of learning did involve colleagues, most of this was from those who were, like the intern, still in training. There was little learning from practising physicians and, of those senior physicians who were sources of learning, almost none provide primary care.

Although most of the experiences were technical and positive, there was no trend noted over time towards more interpersonal experiences, suggesting that the technical pattern continued throughout hospital training rather than simply being a characteristic of the internship year. There may be so much to learn in the hospital that is technical, that interpersonal training must wait. These interns were learning to be competent in dealing with very sick children. There may also be no one from whom to learn needed interpersonal skills. Hospital staff do not provide primary care on a continuing basis and the position of the consultant is different from the position of a practising physician. Moreover, the hospital is organized to cope with episodes of illness and not to provide continuing care. Perhaps interpersonal skills can be learned from other health professionals. But contacts with these professionals such as the nurse and social worker were among the experiences noted least often.

Is there a hospital setting most likely to present an opportunity to develop continuing relationships with the patient? Traditionally this is the out-patient department. Yet that service is the one most often criticized for having failed to offer a strong educational programme. The out-patient department is also part of that system of health care for the poor in the United States that is so often criticized. It is geared for secondary and not primary care and patients turn to the out-patient department for primary care only when there are no other resources in the community.

Thus, in this 1 year, there was very little, if any, experience to prepare the house officer to deliver primary paediatric care. Both of these institutions had recognized primary care programmes and substantial rotations through the out-patient departments, but these programmes and the out-patient department setting made little measurable contribution to house officer learning. Moreover, the hospital makes a negative contribution to primary care by creating an environment where primary care is seen as consisting of minor and trivial diseases.

In summary, primary paediatric care can make a difference by affecting utilization, cost, attitudes, satisfactions but not the morbidity of patients.

Second, as paediatric care was practised in the study there was significant variation between the physicians in the style and content of their practices making the development of quality measures difficult. Third, with education concentrated in the hospital, physicians, in this case paediatricians, are not educated for primary care.

Here is where two countries come on common ground. As these questions are asked of primary care in the United States, so they must be asked in the United Kingdom. Does paediatric care as presently delivered make a difference? Are your standards sufficiently clear so that the quality of paediatric care as delivered by general practitioners can be evaluated? Are general practitioners appropriately educated to deliver, within the context of a family practice, primary paediatric care? The answers might at present be similar to those observed in the studies reported in this paper.

Perhaps in attempting to produce general practitioners who know more appropriate paediatrics and in producing our generalist paediatricians, the U.S.A. and the U.K. are on a similar pathway. Training in both countries is being attempted outside of the hospital in other educational settings such as health centres, group practices, and child health and school health programmes. In these settings, primary care skills are not technical but are large interpersonal, especially when compared with those needed in the hospital. Standards for practice developed in these settings are appropriate for primary care.

In the United States, students and patients articulate the demand for better health and medical care. The educator must respond by developing appropriate educational pathways, which also means some research. Studies are needed to develop the body of knowledge which underlies primary paediatric care. In doing this, we will correct the educational and research imbalance in favour of the hospital and physical diseases noted over 50 years ago by Sir James MacKenzie (MacKenzie, 1918). In providing appropriate primary paediatric care, the sociology of providing care will hopefully catch up with its technology.

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