

# HOSPITAL PAEDIATRICS AND CHILD HEALTH CARE

by

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THE reasons for referral and admission of children to the Ulster Hospital Dundonald (UHD) during October 1979 were documented in order to examine the present day practice of hospital paediatrics. In comparison to 25 years ago many admissions today are not for acute emergencies but for less life threatening conditions which nevertheless are extremely frightening to the parents. The knowledge that their child is being treated in a unit with special skills in treatment of sick children is often of paramount importance to parents. Children however do not hold paediatricians in such high esteem and prefer to avoid doctors and to be looked after at home. This paper therefore wishes to explore the best role of the hospital paediatrician in treating childhood illnesses and improving child health.

## PATIENTS STUDIED

The Ulster Hospital is an Area General Hospital providing a paediatric service to an area including North Down and East Belfast. During a 4-week period in October 1979 a total of 1,286 children were seen at the general paediatric clinics or admitted to the surgical and medical paediatric wards of the hospital (Table 1).

TABLE 1

*All Paediatric Medical and Surgical Patients UHD (Oct. 1979)*

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New medical outpatients	89
Reviewed medical outpatients	567
Cardiac outpatients	26
General medical inpatients	134
Neonates admitted to SBU	57
Surgical outpatients	160
Surgical inpatients	81
Accident and emergency attendances	172
<b>TOTAL</b>	<b>1,286</b>

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About half of the 1,286 patients attended for review as outpatients, there were 89 new medical referrals from family doctors, more than 200 children required

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inpatient treatment and 172 attended the Accident and Emergency Department. Not included in this figure are approximately 200 more children who attended more specialised clinics including—orthopaedics, plastic surgery, ophthalmology, ENT, child psychiatry and physiotherapy.

### *Outpatients*

#### *(1) Accident and Emergency Attendances*

There is only one Paediatric Accident and Emergency (A & E) department in Northern Ireland which is at The Royal Belfast Hospital for Sick Children (RBHSC). All other A & E departments deal with both adults and children and this is the case at UHD where 172 children attended during the month under review (Table 2). In fact 122 (71 per cent) attended because of some form of trauma, about half of these were fractures, more than one-third were soft tissue injuries and five had head injuries. Many of the others were true emergencies, including seven children with appendicitis, and a variety of medical problems. Possibly only 10-15 per cent of these children would have been more appropriately seen by a family doctor, e.g. cases of paronychia, chicken pox, mumps or conjunctivitis. Indeed in some cases the fault was not that general practitioners (GPs) were inaccessible but that parents had made no effort to contact them. The acute service provided by GPs in the hospital hinterland would appear to be excellent therefore on the basis of A & E visits. This conclusion is further supported by the fact that over 90 per cent of hospital admissions do not come via the A & E department but are arranged by family doctors directly to the wards.

TABLE 2

*Children attending Accident and Emergency Department (UHD) in one month*

Trauma	122
Acute surgical conditions	16
Infections	22
Acute medical problems	10
Vaccination site infection	2
TOTAL	172

At the RBHSC A & E department in a similar period (October 1978) 1,601 children were seen, i.e. more than the total number of children attending all departments at UHD. Of these children 64 per cent had suffered some trauma, 25 per cent had acute medical problems and 11 per cent acute surgical problems. Again it can be estimated that about 15 per cent of these children could have been equally well treated by a family doctor. In both A & E departments it could be contended that up to 20 per cent of the children did not require medical treatment at all if one considers, for example, those with minor bruises and insect bites. However parental anxiety over a child is also an important consideration and where this has been allayed an important service has been performed.

(2) *Medical Outpatients—Primary referrals*

New medical referrals to outpatient clinics indicate a different spectrum of disease with respiratory conditions coming top of the list (Table 3). Asthma is a common childhood condition accounting for 21 per cent of new referrals but despite this is rather underdiagnosed by family doctors. Up to 20 per cent of children probably wheeze at some time<sup>1</sup> perhaps 10 per cent having true asthma with recurrent wheezy episodes. History taking is all important in the diagnosis which is often missed simply because doctors do not inquire about a wheeze assuming respiratory symptoms to be infective. In approximately 50 per cent of children referred with other respiratory problems asthma was found to be the true diagnosis. Another group of children were referred because of recurrent respiratory symptoms which were therefore assumed to be asthmatic. Again if history taking is careful these patients are revealed to be having 5 to 6 "colds" per year which is normal for young children especially in areas of poor housing. In both situations unnecessary courses of antibiotics can be avoided if time is spent eliciting the history. Bronchodilators are the treatment of choice for asthma not antibiotics.

Referrals with fits and faints may in fact be slightly under-represented in this list of new referrals (Table 3). In a review of a longer period this would be the second most common cause for referral and certainly this is true over a year at RBHSC medical outpatients.<sup>2</sup> The type of help required by family doctors in this situation is (a) to determine whether genuine fits are occurring and (b) if anticonvulsant treatment is needed. One fit in a child should never mean the individual is labelled epileptic and usually does not indicate the need for prophylactic drugs. Anticonvulsants are indicated for recurrent fits especially in the school age child. There is a widespread belief that a 'brain wave test' will provide all the answers whereas in fact EEGs are notoriously unhelpful in this situation.<sup>3</sup> The frequency of fits is not related to EEG findings. The EEG is most useful in establishing that a fit has definitely occurred, e.g. when an abnormal record is obtained within 24 hours of a suspected convulsion.

TABLE 3

*New patients referred to UHD Medical outpatients clinics in one month*

Asthma	19	Failure to thrive/weight loss	4
Chest infection	4	Enuresis	4
Recurrent URTI	10	Vomiting/feeding problem	6
Fits and fainting attacks	6	Constipation/encopresis	2
Urinary tract infection	6	Cardiac murmur	2
Developmental delay	4	Non Accidental Injury	2
Lymphadenopathy	2	Unexplaining bruising	2
Acute allergic reaction	3	Other	13
	54		35
	TOTAL = 89		

Only six children with urinary tract infection (UTI) were referred to hospital. It is essential that all children with a UTI have radiological investigation of the urinary tract especially if they are pre-school age. Approximately 20 per cent of children with UTI have underlying vesico-ureteric reflux and those under 5 years are at risk of developing pyelonephritic scarring.<sup>4</sup> If chronic pyelonephritis in childhood could be prevented as many as one-third of adult renal transplants might be avoided.

All children with suspected slow development must be seen in hospital. Those who are in fact normal must be identified as soon as possible to relieve parental anxiety. Once it is established a child has development delay intensive investigation is required to exclude treatable causes such as hypothyroidism. However, by far the most important factor in management is the support offered to the parents in the early months and years which are the most stressful. Much of the anxiety and worry of the parents of handicapped children can be alleviated by expert advice and support rather than by medical treatment. It is therefore important that these children come to hospital as early as possible since the community service for the infant age group is at present inadequate in most areas.

There is little doubt that health visitors, family doctors and school medical officers could achieve as good if not better results than hospital doctors in treating enuretic children. The most important factor in success of treatment is clear informed advice to parents on the aetiology of the problem and the correct use of achievement star cards and buzzer alarms. There is no need for primary enuresis, i.e. enuresis since birth, to be treated in hospital and referral probably only increases parental and patient anxiety.

### (3) *Medical Outpatients: Review*

The analysis of follow-up appointments essentially mimics the new referrals, although chronic conditions such as diabetes, mental retardation, gastro-intestinal disease and failure to thrive or grow become more common (Table 4). Mothering and social problems occur as a primary reason for review in only a small number but often are the underlying reasons for review, for example, in asthma or UTI to ensure advice is followed.

Thirty-five per cent of the medical follow-up patients suffer from asthma. The reasons for this large number include failure of junior medical staff to discharge patients, poor patient drug compliance, poor patient attendance to family doctor surgeries and severe disease. The two common mistakes in management are to prescribe intermittent rather than daily year round Intal and failure to elicit the presence of exercise intolerance or early morning and night wheeze. Where these problems exist bronchodilators such as oral salbutamol can be prescribed shortly before exercise, e.g. school sports, or long acting aminophylline compounds may be used to help alleviate night symptoms. In fact many asthmatics may not need to attend hospital regularly if adequate treatment monitoring and follow-up could be ensured by family doctors. In the small percentage with severe symptoms, the development of status asthmaticus can be prevented by outpatient visits for nebulized salbutamol from a face mask before severe attacks are established. This is encouraged for individual patients who have a history of hospital admissions.

A Baby Clinic is held each week at which all babies who have been in the Special Baby Care Unit (SBU) are reviewed. The reasons here are not only that this is

TABLE 4  
*Medical outpatient follow-up patients UHD (Oct. 1979)*

Asthma and respiratory problems	201
Mental retardation and developmental delay	45
Small stature and failure to thrive	17
Headaches and epilepsy	50
Gastro-intestinal disorder	31
Diabetes and endocrine (38 + 5)	43
Urinary tract and enuresis (27 + 11)	38
Cardiac murmurs	5
Haematological disorders	6
Mothering and social problems	11
Baby clinic (SBU follow-up)	115
Other	5
<b>TOTAL</b>	<b>567</b>

developmentally an at risk group, but also to support mothers in a situation where the natural bonding process has been interrupted. Valuable feedback and criticism of the paediatric, maternity and community service is often offered and this invariably points towards the feeling of being overwhelmed as a person in the obstetric system. The removal of the longed for and cherished newborn to the sterile SBU occasionally is the last straw. The paediatrician is constantly reminded of the emotional vulnerability of the postnatal mother and the need for special compassion for the baby's mother who is also a patient.

#### (4) *Surgical Outpatients*

Of 180 surgical outpatients 67 attended for post-operative review. There were 88 new referrals, 23 had umbilical or inguinal hernias, 24 undescended testes or hydrocoeles and eight were thought to be in need of circumcision. There were 11 children with abdominal pain or symptoms related to the gastrointestinal tract, the remaining seven had urological problems.

#### *Admissions*

The treatment of acutely ill children in hospital reduces mortality, reduces morbidity by ensuring rapid recovery and further aims to prevent recurrence. Most hospital inpatients do not suffer from rare or strange disease (Table 5) and examination of mortality figures for Northern Ireland suggests that children do not die of rare conditions. Seventy five per cent of deaths are in the first year of life and 70 per cent of these are due to perinatal problems or congenital anomalies. Twenty per cent of deaths are due to infectious disease most commonly pneumonia and 11 per cent due to accidents.<sup>5</sup> In the month under review six children died in UHD. All but one of these children had major congenital anomalies, the remaining child died of viral encephalitis.

TABLE 5  
*General paediatric admissions in one month to UHD*

<i>Medical</i>		<i>Neonates (SBU)</i>	
Respiratory tract infection	47	6 physiological	
Asthma	27	Jaundice 3 prematurity	10
Neurological (mainly fits)	17	1 ABO incompatibility	
Renal	6	Neonatal asphyxia/low apgar score	8
Feeding and GIT problems	17	Foetal distress	5
Accidental poisoning	4	Instrumental delivery	5
Diabetes	5	IRDS	7
Other	11	Cyanotic attacks	6
	-----	Feeding problems/vomiting	2
TOTAL	134	Meconium aspiration syndrome	1
		Other	13
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		TOTAL	57
<i>Surgical</i>			
Orthopaedic procedures	23		
Abdominal and GIT conditions	28		
Genito-urinary problems	15		
Miscellaneous	15		
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TOTAL	81	GRAND TOTAL	272

### *Neonates*

The reasons for admission to the SBU are indicated in Table 5. The mother invariably feels she is somehow at fault and has failed the baby. The SBU sister visits mothers in the ward daily and medical staff more intermittently. Mothers are officially encouraged to visit the baby frequently and to feed their baby where possible. Many of the babies in the miscellaneous group of 13 at the bottom of the column are only admitted overnight as a precautionary measure. All the jaundiced babies required only phototherapy as treatment. In one case of neonatal asphyxia the clinical condition of the baby was such as to raise serious worries about its future development. Three required transfer to Royal Maternity Hospital (RMH) Neonatal Unit for ventilation because of severe respiratory distress. The policy would be towards early transfer to the RMH where need for respiratory support seems a possibility. The absence of Rhesus disease in the tables reflects the decreasing incidence of the condition as a result of successful prophylaxis. There is also a policy of transferring mothers before delivery to a specialist centre rather than sick 'rhesus' neonates after delivery whenever such a situation is foreseeable.

### *Infants and Children*

The paediatrician's work is more and more geared not so much towards treating children in hospital as to treating children as outpatients and advising on their

treatment so that admission is not required. Reasons for admission and the number of admissions has a marked seasonal variation, although as always in paediatrics, respiratory conditions predominate (Table 5). Fits are the next most common medical cause of admission. Usually children with a fit are rushed straight to hospital bypassing the family doctor. When a family doctor is called he is faced with the dilemma as to how to stop the fit. It is often difficult even in hospital to administer intravenous (IV) diazepam to a fitting child with the help of nurses, bright light and 'butterfly' needles. At home such a technique with its attendant risk of temporary respiratory arrest is almost impossible. If diazepam for injection is administered in the same dose rectally it will be almost as effective as if administered IV. Given intramuscularly (IM) it is useless, paraldehyde is probably the drug of choice by the IM route and is almost as effective as IV diazepam.

In the Ulster Hospital accommodation for mothers is available. This is often useful when we feel the reason for a baby failing to thrive, sleep or feed is poor mothering technique. The problem seems to occur most commonly with first babies and when mothers receive conflicting advice. The success rate is virtually 100 per cent in managing this problem, because a team of nurses who specialise in treating such infants exists and takes pride in the solving of these difficulties.

In the month there were 81 paediatric surgical admissions (Table 5), a considerable proportion of which were for cold orthopaedic procedures. The commonest acute abdominal condition was appendicitis while similar numbers of patients had inguinal hernias repaired. Orchidopexy and circumcision were the most frequent genito-urinary operations.

## DISCUSSION

The numbers of children who attend and are admitted to hospital seems to indicate that paediatric specialists continue to be needed to provide adequate child health care. However, as has been suggested, many of the patients attend hospital not because treatment of their condition needs the technology available only in hospital but rather because they are managed there by professionals with skill and experience in treating children. Hospital admission of many children may be related more to social deprivation and standard of family accommodation than to severity of illness. In this situation the hospital has become an extension of the community medical service.

It appears from our comparison of hospital deaths in children and the Registrar General's lists of causes of death that many deaths occurring outside hospital are preventable e.g. pneumonia, gastroenteritis, accidental death. This may indicate the need for greater community involvement by paediatricians. Similarly many of the conditions causing hospital admission and frequent attendances at hospital outpatients e.g. asthma, respiratory infection, feeding problems, could be reduced by action at the community level.

The stark figures presented do not reveal the social and environmental causes of unnecessary morbidity and mortality in children. Such causes are at present outside the professional responsibility of paediatricians. To reduce the incidence of accidents and infection for example, would involve the provision of better housing, better road planning and adequate safe play areas for children. Paediatricians can

apply pressure to achieve changes in these areas much as adult physicians have done in relation to smoking and cancer or heart disease.<sup>6</sup> Paediatricians may also need to become more involved in the education of parents and future parents regarding child care as the normal education system does not adequately train teenagers in this area.

The need for skilled hospital care with the advantages of modern technology continues to be essential for the treatment of children with life threatening disease but to reduce morbidity and mortality, the role of the paediatrician will in future demand greater involvement at a community level and in influencing political decisions if there is to be further improvement in child health.

### SUMMARY

The reasons for attendance and admission of 1286 children to an area general hospital are examined in detail. Admissions accounted for 272 children, 172 attended the Accident and Emergency department and the remainder visited the general medical and surgical outpatient clinics. Comparison between hospital and community morbidity and mortality are made. While skilled hospital care with the advantages of modern technology are essential for the treatment of severe life threatening disease in childhood, it is suggested that paediatricians in future will need to become more involved at a community level and in influencing political decisions if there is to be further improvement in child health.

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