

## PRACTICE OBSERVED

## Practice Research

## Changing clinical picture of non-accidental injury to children

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## Abstract

The setting up of the South Glamorgan Area Review Committee and locally agreed procedures in 1974 has been associated with a considerable increase in observed moderately severe non-accidental injuries in children. The increase is in all age groups but is rising in older children. Most of the rise is likely to be due to increased community awareness. On the other hand, there has been a steady decrease in severe injuries, which may well be due to early recognition of minor or moderate injuries preventing the development of severe injuries.

## Introduction

Throughout the 1950s and 1960s there was a growing awareness that young children presenting with fractures and intracranial bleeding were the victims of abuse by a parent or carer. In 1962 the term "battered child syndrome" was coined by Kempe *et al* to describe a condition where children had received severe physical abuse from a parent or guardian, from which until 1962 over 10% of children died and 15% were left with serious brain damage.<sup>1</sup> It was recognized that, although children of all ages could be victims, most were younger than 3 years.

In 1969 Shinner and Cantle studied 78 battered children.<sup>2</sup> They classified 73% of the children in their sample as having suffered a serious injury—that is, head injury, fractures, severe

burns, and internal injuries. All the children in the study were under 4 years but 56% of those who were injured were under 12 months. They confirmed that a characteristic of child abuse is that injuries tend to be repeated. Two in every five children had received medical attention before the incident that brought them into the study sample and, of those discharged home, three in every five required further treatment; of the 40 children followed up, 60% were injured again.

Concern for children presenting at hospital with unexplained injuries grew and in 1974 the Department of Health and Social Security produced a memorandum on non-accidental injury to children in which all local authorities were asked to set up area review committees to coordinate a multidisciplinary approach to cases of child abuse.<sup>3</sup> Representatives from all agencies who may be concerned in the care of children sit on these committees, which in South Glamorgan meet four times a year. The committee is also responsible for the overall management of the child abuse register, multidisciplinary training, and setting up and reviewing locally agreed child abuse procedures. The object of the procedures is to detect children who are injured or neglected and provide support for them and their families. It was hoped that this would help to reduce the chances of further injuries to children and by detecting minor injuries early lessen the likelihood of more serious damage later.

One of the responsibilities of the committee is to ensure that all agencies dealing with children are aware of the various manifestations of child abuse and neglect and know the mechanism to be operated to help the child and family. In South Glamorgan (the child population under 16 in 1981 was 85 700) the area review committee was officially constituted in September 1974 and the first multidisciplinary procedure was distributed throughout the county in May 1975, although procedures had been in existence in hospitals in the area for a few years. In 1973 research into child abuse in the area was started by JJ and there was an increasing amount of publicity given to this subject in both the hospital and the community.

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## Patients and methods

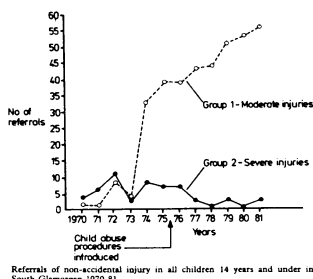
This study examines the clinical features of all the children in South Glamorgan where non-accidental injury was diagnosed from 1970 to 1981. Procedures demanded that all children in whom non-accidental injury is suspected are medically examined either by a paediatric senior registrar, consultant, or senior clinical medical officer working in the hospital services. Hospital admission is arranged for all suspected or proved cases into one of three children's units in the county. Referrals may come from any source, and a case conference follows within 72 hours of the incident. The doctor with clinical responsibility, the consultant paediatrician, or senior registrar attends the case conference, which is chaired by a senior member of the social services department. The conference will decide after considering the medical report and contributions from other agencies, if a diagnosis of non-accidental injury can be upheld.

The data for this study were gathered from the minutes of the case conference, all of which are received and monitored centrally by the child abuse coordinator (JJ) in South Glamorgan Social Services Department. The age range of children in which the ill treatment was observed is 0-15 years. Injuries have been divided into two groups: (a) severe injuries, which include all fractures, internal injuries, and intracranial bleeding; (b) moderate injuries, which include all soft tissue injuries. The consultant paediatric staff have been fairly constant during this period, ensuring a large measure of conformity of diagnoses.

## Results

The 11 children where burns were the main injury are not included in the study, as it was impossible after prolonged evaluation to be sure that any one was non-accidental. The burns included small lesions which were thought to be cigarette burns and minor injuries caused by household appliances which occurred as a result of negligence by a parent or carer rather than deliberate ill treatment. The number of burn referrals identified as non-accidental that required extensive treatment has been small. Since 1974 five children have died as a direct result of a non-accidental injury. All have been aged under 15 months and the last death occurred in 1977, three years after the procedure was established. Cases of sexual abuse have not been included in the study as they are not always handled through the existing child abuse procedures and statistics relating to this type of case are therefore not comprehensive.

Table 1 shows the changing numbers in each group during the 11 years. The graph shows a rapid increase in the number of children referred with moderate injuries in 1973 coinciding with the much publicised Maria Colwell<sup>4</sup> report and a sudden increase in public awareness of child abuse as a serious problem. In South Glamorgan hospitals a procedure for the management of cases had become well established and school teachers were being made more aware of the problem in children of school age, which probably accounts for the observed increase in moderately severe injuries from 1973 to 1974. In 1974 the area review committee was set up and the committee immediately on a multidisciplinary procedure that was fully implemented in May 1975. The figure does not, however, show that there has been a corresponding increase in severe injuries but rather a decrease in referrals of this type. In the period before the established procedures (1970-4) six children suffered some permanent physical or mental handicap as a result of ill treatment. After the procedures introduced in 1975 only one child (aged 6 months) has sustained



Referrals of non-accidental injury in all children 14 years and under in South Glamorgan 1970-81.

TABLE II—Source of all child abuse referrals through the child abuse procedures

Referral	July 1970-4	1975-81
	No.	%
Social workers	19	17
General Practitioners	40	36
Police	5	4
Health visitors	5	4
Schools	4	3
National Society for the Prevention of Cruelty to Children	4	3
Police	4	3
Protection	4	3
Clinical medical officers	4	3
Others	4	3
Total No.	111	100

lasting damage. No major skull fracture due to non-accidental injury has occurred since 1977. Table 1 shows that severe cases of non-accidental injury are confined to the younger age group. Interestingly, there is a steady increase in the number of older children referred with moderate injuries. In 1981 this was actually higher than the number of children referred in the age range 5-10 years. Table 11 shows that referred cases to the social services department through the child abuse procedures for two periods between 1970 and 1981. (Data for 1974-9 are not available.)

## Discussion

These figures show a considerable change in the observed incidence of the various types of non-accidental injury to children during the past decade, which confirms a trend suggested by Marran and Buchanan in 1979.<sup>5</sup> The observed increase does not necessarily mean that other types of child abuse, such as sexual abuse, have increased. The introduction of child abuse procedures, a heightened awareness of the early signs, and greater skill in predicting child abuse through publicity and regular multidisciplinary training may account for the dramatic increase in referrals of moderate injuries. In the period 1970-4 general practitioners and hospital doctors were responsible for 45% of referrals, falling to 10% in 1979-81. This points to a change in the referring habits of other people, such as teachers and health visitors, rather than a change in the referral practice of doctors. Interestingly, the proportion of cases referred by the general public remains the same in both groups: 19%. Apart from publicity in the media the general

TABLE I—Number of children referred with severe or moderate injuries through the South Glamorgan child abuse procedures

Years	0-4 years	5-9 years	10-14 years
1970	6	—	—
1971	6	—	—
1972	1	—	—
1973	3	—	—
1974	2	—	—
1975	1	—	—
1976	1	—	—
1977	1	—	—
1978	1	—	—
1979	1	—	—
1980	1	—	—
1981	1	—	—
Total No.	39 (13%)	181 (62%)	227 (79%)

public do not have special training to detect child abuse nor are they responsible to locally agreed procedures. Many of these referrals are minor, unless the few referred before 1974 that tended to be more extensive.

Most children examined in hospital where the presenting symptom is a soft tissue injury have a radiographic examination of the skeleton. Very few children presenting with soft tissue injuries were subsequently shown to have fractures. When this did occur the child was automatically placed in the severe group for this study. Possibly children receive moderate injuries in the early stages of ill treatment and prompt recognition and treatment avert more serious damage. If so, then there has clearly been a change in the diagnosing of child abuse to include the less serious cases. The decline in serious injuries is likely to indicate a real trend downwards since a serious injury is difficult to hide, although there may be delay before treatment is sought.

The growing number of older children referred again suggests a change in attitude by doctors and social workers rather than a real increase in non-accidental injury among teenagers. Child abuse procedures now include children aged from 0 to 16 years, whereas before concern centred on ill treatment of the infant. The infant clearly is still the most vulnerable and more likely to sustain a severe injury.

The greater community awareness of non-accidental injury means that there is a danger of wrongly diagnosing accidental injury and thereby causing injustice to a family. This risk is especially true for moderate or trivial injuries such as bruises. Some parents may delay visiting the accident and emergency department when their child has a genuine accident because of

the fear of a wrong diagnosis. This attitude may be minimised if the medical, nursing, and social work staff concerned are few and are experienced and sensitive people who are brought in as early as possible. On the other hand, figures suggest strongly that genuine prevention of serious injuries is related to early intervention and subsequent close monitoring together with increased help from medical and social work agencies.

The great publicity that surrounds a dramatic case of ill treatment or a fatality perpetuates the idea that the incidence of non-accidental injury to children is growing. Although it may be impossible to prevent from time to time, these figures show that the syndrome is less serious in terms of type of injury than when it was first described in 1962, and early recognition and intervention have led to a genuine decrease in recurring ill treatment and permanently damaged children.

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## Rubella immunisation: whose baby?

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## Abstract

Only half of girls aged from 11 to 14 years in a new town practice of 11 200 patients were recorded as immunised against rubella in 1979. The practice then assumed responsibility for its rubella immunisations and in four years, by using an age-sex register, achieved a 91% uptake of vaccine in the under 14s. In the over 14s, the practice reduced the number of "rubella risk" patients from 48% to 16%.

It is suggested that general practitioners are best placed to implement the rubella immunisation programme successfully, though they will need to be remunerated adequately for this time consuming work.

## Introduction

Since 1969 there has been a safe, effective rubella vaccine giving prolonged immunity.<sup>1</sup> In 1970 the Department of Health and Social Security recommended a programme of rubella immunisation for all girls aged from 11 to 14.<sup>2</sup> Since 1970 the DHSS has expanded this programme to include the immunisation of older women who are non-immune, screening of groups at

special risk—especially women seeking contraceptive advice—the immunisation of 10 year old girls, and screening all women of childbearing age.<sup>3-5</sup> Congenital rubella might be a disease of the past had this programme been implemented. Instead, successive epidemics of rubella leave in their wake damaged babies and distressed families. The cost to the state is enormous.<sup>6</sup> What is going wrong and how can it be put right? At present, the rubella programme is implemented haphazardly and separately by four agencies: school medical services, family planning clinics, obstetric departments of hospitals, and general practices. These women are screened unnecessarily with every pregnancy, while some of those who are trying to conceive or are undergoing tests for infertility are left unscanned.<sup>7</sup> Some women found to be non-immune are left unimmunised.<sup>8</sup> Many schoolgirls escape immunisation altogether because their signed consent forms never materialise or because they are absent on the day of immunisation.<sup>9</sup>

I report what happened when a general practice assumed the responsibility for implementing the rubella programme recommended by the Department of Health.

## Method of recording

In 1973 I established a new practice in Strichley, a district of Telford New Town, in Shropshire. I set up an age-sex register to ensure that all my patients were screened and immunised as part of a comprehensive programme of preventive medicine. I filed my A4 medical records (FP111s) geographically, by street, and number. Thus the records of the members of a household were filed side

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side. On the spines of the A4 records self adhesive coloured spots signalled information concerning prevention to the office staff, as I will describe later.

I needed to know the answers to three questions concerning rubella for each girl and woman aged from 10 to 40: Has she been immunised? Has she been screened and the result? Has she or her husband been sterilised?

At first I obtained this information by noting any new and relevant information arriving at the surgery, which I recorded in a specific place in the medical record. The age-sex register clerk then transferred the information to the age-sex register. Later, I obtained the information by asking the patients as they attended at consultations, when their A4 medical records were to hand. As the practice grew, each new partner played a part in collecting and recording the information.

By 1979 the practice had stopped growing and five partners were looking after 11 200 patients. At this time we suspected that the uptake of rubella vaccine was much lower than it ought to be. An analysis of the age-sex register on 1 January 1979 showed that only half of schoolgirls aged from 11 to 14 were recorded as being immunised. This was clearly unsatisfactory and we decided to take action.

## Aim

We aimed at eliminating congenital rubella in the practice by reducing the number of "rubella risk" patients to nil. We define a "rubella risk" patient as a woman patient whose records show that she is unimmunised, that she is serologically non-immune or of unknown immune state, and that she and her husband have not been sterilised. This aim was to be achieved by immunising all schoolgirls aged from 11 to 14, by sending blood of "rubella risk" patients aged from 14 to 40 to the district hospital laboratory for rubella antibody estimation, and by immunising those found to be non-immune.

We aimed at monitoring progress by carrying out audits every 18 months.

## Method of audit

We carried out audits by analysing the rubella data in the age-sex register for each appropriate year of birth. We counted the number of patients in each of five mutually exclusive groups: sterilised, husband sterilised, serologically immune, immunised, and "rubella risk." When an already immunised patient was found to be immune on routine antenatal screening she was counted as "serologically immune." All sterilised patients irrespective of other data were counted as "sterilised." In other studies<sup>10-12</sup> wives were considered at risk despite their husbands having had a vasectomy.

In the first audit we excluded 2% of our patients in the age-sex register and in the third audit 3%, because they apparently no longer lived in the practice area. We had identified these "ghost" patients by using a street register. (When a family moves into the area and registers with the practice we ask them if their new house was occupied before their arrival. If it was the previous occupants are assumed to have moved out of the area. Their age-sex records are marked "ghost," until their new address is discovered.)

## Actions and audits

## ACTION—JANUARY 1979

After our analysis of the rubella data on 1 January 1979 we introduced rubella immunisation sessions for our schoolgirls at local schools each term. School secretaries distributed our explanatory letters and consent forms to pupils registered with the practice and a general practitioner and practice nurse held immunisation sessions at the schools. We contacted defaulters by letter. Patients who were known to be serologically non-immune were also contacted by letter.

## AUDIT—JULY 1980

The first audit (fig 1) showed an improvement in uptake of vaccine in schoolgirls aged from 11 to 14 years from 50% to 79.2%. In addition, the audit showed that of our women patients aged between 14 and 40, 49.2% were "rubella risk" patients.

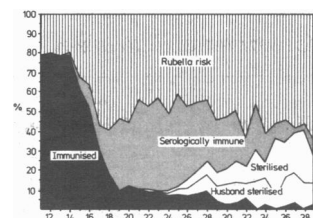


FIG 1—Analysis of the practice age-sex register on 1 July 1980 to show percentages of "rubella risk" and "rubella risk" patients by age.

## ACTION—JULY 1980

We continued rubella sessions at schools, but defaulters were no longer contacted by letter because of the expense of postage and a disappointing 50% response. Contacting patients who were serologically non-immune by letter was abandoned for the same reasons. A new method of contacting these patients was introduced: the A4 medical record of each defaulter or non-immune patient was marked with a coloured spot on the spine and a long, white card attached inside where it could not be ignored by anyone using the record. As soon as the patient appeared at the health centre, for whatever reason, her notes signalled the fact that she was a "rubella risk" patient. The subject of rubella was introduced and action taken. Hansen has confirmed the effectiveness of this opportunistic approach.<sup>13</sup> Furthermore, if any member of the patient's family appeared at the health centre the household filing system enabled the presence of a "rubella risk" patient in the household to be signalled and contacted.

From the "rubella risk" patients remaining a target group were isolated: those women receiving contraception. When they attended the surgery for advice they were offered screening and immunisation, if appropriate.

## AUDIT—JANUARY 1982

The second audit showed an improvement in uptake of vaccine in schoolgirls aged from 11 to 14 years from 79.2% to 87.5%. Of our patients aged from 14 to 40, however, 35.6% were still "rubella risk" patients.

## ACTION—JANUARY 1982

Schoolgirls aged 10 were immunised in line with the Department of Health and Social Security circular of October 1981.<sup>14</sup> The target group was enlarged to include all women from 14 to 40, not merely those receiving family planning advice. This action pre-empted the DHSS circular of May 1983.<sup>15</sup> This group was identified by using the age-sex register. Each month the age-sex register clerk examined the age-sex records of the 30 cohorts of female patients aged from 10 to 40 years and identified "rubella risk" patients. If identified a "rubella risk" patient the marked the patient's A4 medical record with a coloured spot and long, white card to alert the practice as described. This process continues.

## AUDIT—JULY 1983

The third audit (fig 2) showed an improvement in uptake of vaccine in girls aged 10 to 14 to 91.0%. For the 12 year olds, a 95.4% uptake was achieved. Of our women patients aged from 14 to 40, 15.8% were "rubella risk" patients. So far as we know no rubella damaged baby has been born to a patient in the practice since the programme started in 1979.