We are grateful to Sanofi UK Ltd
for financial assistance with
the printing of this report

BPSU

Third ANNUAL REPORT 1988–89

BRITISH PAEDIATRIC SURVEILLANCE UNIT

5 St Andrew's Place Regents Park London NW1 4LB Tel : 01-935 1866

JOINT COMMITTEE OF MANAGEMENT 1988

Sir Cyril Clarke chairman

Dr C L R Bartlett BPEC
* Professor J D Baum chairman, Executive Cttee
Dr R Counahan RCPCH
* Dr J R Davies PHLS
Dr N S Galbraith
* Dr S M Hall medical coordinator
Dr R MacFaul BPA
* Professor C S Peckham ICH
Dr D Reid RCPCH
* Professor E H Ross
Dr M S Tanner BPA
* Sir Peter Tizard

Dr A J Fox BPEC observer
Dr I A Lister Cheese BOH observer

Mr M Glickman administrator

* Members of Executive Committee

BRITISH PAEDIATRIC SURVEILLANCE UNIT

5 St Andrew's Place Regents Park London NW1 4LB Tel : 01-935 1866

Third ANNUAL REPORT 1988

CONTENTS

BRITISH PAEDIATRIC SURVEILLANCE UNIT

Third ANNUAL REPORT 1988

1 FOREWORD

The British Paediatric Surveillance Unit (BPSU) is no longer an experiment. In June 1989 the reporting system will have been fully operational for three years. The BPSU is now an established part of paediatric epidemiology in the British Isles, and is beginning to attract interest and emulation in other countries and other specialties. It is an indication of the value of the BPSU as a research tool that three papers based on BPSU studies - AIDS, Kawasaki disease and childhood onset diabetes - were accepted for plenary sessions, and two (on HUS) for a group session, at the British Paediatric Association (BPA) annual scientific meeting in April 1989.

Recognition of the important long-term role of the BPSU has also been marked by the addition to the Joint Committee of Management (formerly the Steering Committee) of observers from the Department of Health and the Office of Population Censuses and Surveys (OPCS). The BPSU Executive Committee (BEC) (formerly the Scientific Advisory Committee), chaired until October 1988 by Sir Peter Tizard and thereafter by Professor David Baum, has met regularly to supervise the day-to-day running of the Unit.

I should like to thank the members of the BEC and the staff of the Unit for their work in 1988, and the officers and staff of the BPA for their help and support; the bodies listed later in this report who have helped financially; and - last but not least - the members of the British Paediatric Association and the Faculty of Paediatrics of the Royal College of Physicians of Ireland, whose continuing participation makes possible the BPSU's contribution to the health of children.

Sir Cyril Clarke

Chairman

2 INTRODUCTION

The object of the BPSU is the advancement of knowledge of uncommon childhood disorders through the involvement of paediatricians in a national reporting system. A joint project of the BPA, the Public Health Laboratory Service (PHLS) and the Department of Epidemiology at the University of London Institute of Child Health, the Unit began operation in June 1986. This report is primarily concerned with the calendar year 1988.

The BPSU reporting scheme is based on the mailing of a monthly report card to the consultant paediatrician members of the British Paediatric Association and the Faculty of Paediatrics of the Royal College of Physicians of Ireland. For Scotland, the scheme operates through the Communicable Diseases (Scotland) Unit in Glasgow. Respondents indicate on their card the number of cases seen in the preceding month of any of the current conditions of interest, or tick "nothing to report". When a case is reported, the BPSU office informs the appropriate research worker who then contacts the reporting paediatrician for further information in accordance with the study protocol for that condition.

A condition is added to the report card on the application of a research worker and approval by the BEC. The committee often advises applicants on matters of study and questionnaire design. Part 3 of this report presents notes from the investigators on the progress of each study included in the scheme in 1988. Part 4 gives summary tables of the numbers of cases reported. The effectiveness of the system obviously depends on full participation by members, and Part 5 gives details of response rates (proportion of members returning the card) during the year.

3 CONDITIONS INCLUDED

3.1 AIDS IN CHILDHOOD

Within the British Isles, the BPSU has played a major role in the surveillance of childhood AIDS. Up to 31 March 1989, a total of 33 cases of AIDS in children had been reported to the national surveillance centre at CDSC, and of these, 28 were first reported through the BPSU scheme.

In addition, the BPSU has received 28 reports of infants with HIV antibody but who did not satisfy the case definition for childhood AIDS. In 17 infection is still indeterminate, while 11 have developed symptoms consistent with active HIV infection, but not yet an AIDS indicator disease.

Of this total of 56 case reports, 41 (17 male, 24 female) were definitely or possibly (the indeterminate cases) infected vertically by their mothers, and 15 (14 male, 1 female) by transfusion of blood or Factor VIII. 41 infections were acquired in the UK, and 15 abroad (3 of 4 transfusion infections, and 12 of the 41 infected mothers).

Of the 41 infants exposed in utero, gestational age and birth weight were normally distributed. Birth weight was known for 29 cases and ranged from 930 - 4500gms. Twelve mothers were infected through injecting drug use, 5 through transfusions, and 15 through heterosexual contact with an infected male.

Fifteen children were infected postnatally. Four received transfusions of infected blood; three abroad (2 following premature birth, 1 for sickle

cell disease) and one in the UK, infected prior to introduction of national blood donor screening. The remainder were haemophiliacs infected through contaminated Factor VIII. Paediatric surveillance during this period has thus provided continued reassurance that casual transmission does not occur.

Surveillance data has provided a better understanding of the clinical presentation, which is often subtle and non-specific, the time to onset of symptoms and survival of children with AIDS. In the UK, HIV infected children have most commonly presented initially with a combination of one or more of the following: generalised lymphadenopathy, weight loss or failure to thrive, recurrent bacterial infections, diarrhoea, dermatitis and fever. The non-diagnostic nature of these clinical features emphasises the necessity for paediatricians to ascertain risk factors in the parents in order to suspect the diagnosis.

Analysis of age at onset of symptoms suggests there may be two distinct sub-groups of children; those (70%) presenting within the first 9 months of life, and a smaller group (30%) presenting much later.

The diagnosis of AIDS requires a definitive or presumptive diagnosis of a specific indicator disease and the initial indicator disease at diagnosis in the 33 reported cases is shown in Table 1 below. In those infected vertically, mean age at diagnosis was 17 months, and mean survival following diagnosis is 5 months.

Table 1: AIDS Indicator Disease: Children, UK, 31 March 1989

Indicator disease at diagnosis:	Mode of transmission: Vertical	Horizontal
Lymphoid interstitial pneumonitis	7	2
HIV encephalopathy	4	3
HIV wasting syndrome	3	2
Oesiphageal candidiasis	1	2
Recurrent bacterial infections	2	1
Pneumocystis carinii pneumonia	3	-
Other	1	2
Total	21	12

- National surveillance data of HIV infection shows that infection in women is increasing. Since such infection occurs most commonly in women of childbearing age we can expect a continued increase in infected children. In addition there are nearly 200 infected haemophiliac children (ascertained through the national laboratory reporting system) widely distributed throughout the UK. It is likely that in the future many paediatricians will require experience in the management of HIV infection in children.

- Dr A G Ellam - PHLS CDSC, 61 Colindale Avenue, London NW9 5EQ

3.2 NEONATAL HERPES

Neonatal herpes simplex (HSV) infection has been included in the BPSU notification scheme since it started in July 1986. In the first month retrospective notifications for the previous 12 months were requested and 6 were made. In the next two 12 month periods 17 and 40 notifications were made and since August 1988 there have been a further 19. To date, 37 of these 82 notifications have been confirmed as HSV infection in neonates. Six were duplicate reports, 21 either did not have HSV or were not neonates, 3 could not be traced, and the remainder await further information.

Twenty-two of the 37 mothers had no history of a herpes infection either in or before this pregnancy; in 10 a diagnosis of infection in pregnancy was made after diagnosis in the baby; only 5 had a past history including one woman who had a negative swab at 36 weeks. Virus type is not available in all cases, but in the 26 where it is known it is evenly divided between types 1 and 2.

The investigators are currently writing to notifying paediatricians to obtain follow-up information on these infants. The current information is that almost a third (11 infants) died within a month of birth; in 3 of these the virus type was not known, but there were 4 each in the type 1 and type 2 groups. Several of the surviving infants have adverse sequelae, but there is not yet sufficient information or numbers to make useful statements about prognosis.

- It is important that all virus isolates are typed. However, treatment with anti-viral drugs may mean that virus cannot be isolated from the infant. Paediatricians should continue to notify <u>all</u> suspected cases of HSV infection in infants under one month old, even in the absence of virus isolation.

- Ms P Tookey*, Professor C S Peckham*, Dr R Dinwiddie - *Dept of Paediatric Epidemiology, Institute of Child Health, 30 Guilford Street, London WC1N 1EH

3.3 REYE'S SYNDROME

Annual totals of reports received for Reye's syndrome (RS) surveillance years 1981/2 - 1987/8 (1 August - 31 July) were: 48, 68, 93, 83, 52, 50, 48. Eighteen were received in the first six months of 1988/9. Of the 48 patients reported in 1987/8, there were 10 who initially met the case criteria but who subsequently had their diagnosis revised (to an inborn error of metabolism in 3). No follow-up information has been received yet for a further six. Of the remaining 32, 17 died giving a case fatality ratio (CFR) of 53%. The median and mean ages were 15 months and 2 years 4 months respectively; there was an excess of males (1.6:1) and there was a winter peak - 14 (44%) cases had their onsets December - February. Apart from the CFR, these features were different from those observed in previous years, when the mean age ranged between 3 and 4 years, the sex distribution was equal and there were no seasonal peaks. Only 10% of patients reported in 87/8 had a history of pre-admission aspirin exposure, compared to 66% in 85/6.

Annual total numbers of reports have continued to decline, albeit slowly (although this decline has been striking in N Ireland which previously had an excess incidence compared to the rest of the British Isles), in spite of better case ascertainment via the BPSU, which was introduced at same time (June 1986) as public and professional warnings were issued about a possible association between RS and aspirin. The dramatic decline between 85/6 and 87/8 in cases reported to have taken pre-admission aspirin was not accompanied by a similar sized decline in total number of reports. Earlier concern that RS would be underdiagnosed in the absence of a history of aspirin ingestion brought about by the warnings, was therefore, probably unfounded.

There is, however, considerable cause for concern that patients with the inborn errors of metabolism that mimic RS may be being missed. Relatively few of the cases reported have the necessary detailed diagnostic investigations in spite of their very young mean and median ages which make such a diagnosis more likely than "true" RS. The decline in the mean age of RS patients observed since the decline in use of aspirin has also occurred in the USA. It has been suggested that this is due to the increasing proportion of cases that have a biochemical defect caused by the decline in older, aspirin - associated cases.

* Ideally, all patients presenting with a "Reye-like" illness should be investigated for an inborn error of metabolism, but this is especially important in patients under two years of age and/or those with a family history or recurrent episodes. The most important diagnostic specimen is an admission urine taken before any intravenous fluids are given.

- Dr S M Hall - PHLS CDSC, 61 Colindale Avenue, London NW9 5EQ

3.4 KAWASAKI DISEASE

The change in case ascertainment of Kawasaki disease (KD) from the previous "passive" reporting scheme to "active" reporting via the BPSU brought about a dramatic increase in reports: annual total 1983 - 88 (provisional) were: 34, 15, 17, 75, 80, 100. In most epidemiological and almost all clinical respects (including the existence of atypical or "incomplete" cases with similar cardiovascular complications), KD in the British Isles appears to have identical features to those observed in other countries, both Western and Oriental. There is a male/female excess of 1.4; 80% of cases are under the age of 5 years (25% <1 year and 16% <6 months); there is a significant excess incidence in Oriental/Oriental-mixed race/Caribbean children; there is evidence of time - place clustering. The triennial epidemics and winter-spring peaks observed elsewhere are not apparent in the British cases but interpretation of such trends has been hampered by the small numbers in the "pre-BPSU" years and the change in ascertainment method. The main epidemiological difference is the considerably lower annual incidence in the British Isles compared to most other countries (15 cases per million children under 5 in 1987 compared with 50 in West Germany). This is in spite of an ascertainment scheme superior to that anywhere else, so it is possible that KD is under-diagnosed in the British Isles.

The coronary artery aneurysm complication rate at 22%, is comparable to that in many other series; the provisional case fatality rate in 1988 was 3% (cf 2% 1983-7). Both these rates were similar in Japan in the 1970s but they have now declined there significantly. It is thought that this is due to early diagnosis and treatment with high dose aspirin and gammaglobulin and careful evaluation of all cases with 2 D echocardiography. This management scheme has not been formally evaluated in the British Isles but it is apparent from respondents' volunteered comments that its use is far from widespread.

The BPSU will provide an opportunity to address the issue of whether KD is associated with coronary heart disease in adult life, by linking with the NHS Central registry in order to "flag" KD patients to monitor their eventual age at, and cause of death. Two laboratory studies have been successfully "piggybacked" on to the scheme. - one to determine the possible aetiological role of swine fever virus (Aetiology of Kawasaki Disease. Bannister B et al. Arch Dis Child 1989; 64:397) and the other, based at the Institute of Child Health, London, to measure anti-neutrophil cytoplasmic antibodies and anti-endothelial cell antibodies.

* The mortality and cardiac complication rates of KD can be reduced by early diagnosis and treatment with high-dose aspirin and gammaglobulin. The diagnosis should be considered even in patients who have fewer than 5 of the classic criteria and no other explanation for the symptoms, as these "atypical cases" may also have cardiac complications.

- Dr S M Hall - PHLS CDSC, 61 Colindale Avenue, London NW9 5EQ

3.5 HAEMOLYTIC URAEMIC SYNDROME

A total of 495 reports of haemolytic uraemic syndrome (HUS) were received for cases with onsets 1983 - 1988. Annual totals respectively were: 47, 42, 83, 103, 115 and 105 (provisional figure) in 1988. For 13 of the 1988 cases only the initial BPSU notification was received.

Cases were reported each year from all regions of England, from Scotland, Wales and the Republic of Ireland. From Northern Ireland there was one report in 1985 and 3 in 1987. The majority of cases were reported from Northern England, the Midlands and the South East of England. A relatively large number of cases (15) were reported from Scotland in 1988 - giving an incidence of 1.4 per 100,000 children under 16 compared to 0.7 for England and Wales.

For 1985, the mean age was 53 months (range 3 - 177 months); for 1986, 49 months (range 1 - 166 months); for 1987, 53 months (range 1 - 173 months); and for 1988, 52 months (range 1 month to 203 months). Combining the data for 1985 to 1988, 13% of the cases were less than 1 year of age, 38% were 1 - 2 yearsm 20% were aged 3 - 4 years, 17% were aged 5 - 9 years and 11% were aged 10 - 16 years.

For 1985 to 1988, 210 cases (53%) were females and 183 (47%) were male. The ethnic group was given for 362 patients; 355 (98%) were white and the remainder, Asian.

For 1985 to 1988, 22 cases (7%) reported a positive history of overseas travel in the month before onset of illness. Places visited were: France (3), Spain (8), The Canary Islands (4), Bangladesh (2), Corfu (1), Malta (1), Tenerife (1) and Switzerland (1).

Of those cases (1985 to 1987) for whom information was provided on the occurrence of a prodomal illness: 293 (99%) had symptoms; 276 (94% had diarrhoea including 192 (71%) who had bloody diarrhoea; 219 (79%) had vomiting and 40 (15%) had respiratory symptoms. In 1988 all cases reported a prodomal illness; 89 (97%) had diarrhoea including 57 (62%) with bloody diarrhoea; 69 (75%) had vomiting and 13 (14%) had respiratory symptoms. For 1985 - 1987 the duration of diarrhoea was between 1 and 28 days with a mean of 7 days (standard deviation 4 days); the mean in 1988 was 6 days (standard deviation 3 days). There were 20 cases (1985-1988) who had no prodromal diarrhoea; 12 were male; the mean age was 57 months; 18 were white and 1 was Asian. Other prodromal symptoms (mainly respiratory) were reported in 18 of these 20 patients.

For 1985 to 1987, 83 cases (22%) reported a concurrent similar diarrhoea illness in other members of the household. This includes 5 pairs of siblings reported with HUS at the same time and two female cousins who played together and developed HUS at the same time.

The increase in reports in 1985 was probably partly explained by th

inception in that year of a joint study between the (then) CDSC-BPA Reporting Scheme, the Division of Enteric Pathogens of the Central Public Health Laboratory, Colindale, and the British Association of Paediatric Nephrologists. The study, which aimed to determine the role of verotoxin producing E. coli (VTEC) in HUS in British children, was completed in mid-1988 and is currently being prepared for publication. The further increase in reports in 1986 was probably caused by better case ascertainment through the BPSU introduced in that year. However, there was a decline again in 1988 which may reflect epidemiological changes in the incidence of VTEC infections. The sources of VTEC in the British Isles are nor known and this is an important further question to address because it might provide information which could lead to the primary prevention of HUS which, although rare, is now the commonest cause of acute renal failure in children.

* Haemorrhagic colitis caused by verotoxin producing E. Coli should be high on the list of differential diagnoses in children presenting with acute bloody diarrhoea, especially if they are under two years old. Such patients are at risk of developing HUS and the diagnosis can be made from the blood film which shows the characteristic picture of a microangiopathic haemolytic anaemia.

- Dr S M Hall - PHLS CDSC, 61 Colindale Avenue, London NW9 5EQ

3.6 HAEMORRHAGIC SHOCK ENCEPHALOPATHY SYNDROME

A total of 107 reports of haemorrhagic shock encephalopathy syndrome (HSES) were received for cases with onsets in 1983 - 1988: 18 in 1983, 10 in 1984, 13 in 1985, 7 in 1986, 19 in 1987 and 31 (provisional figure) in 1988. For 9 of these cases only the initial BPSU notification was received. In addition to these 107 cases, 5 further reports were received for patients who later had their diagnoses revised.

The median age of the reported cases was 4 months with a range of 14 days to 15 years. Information on sex was available for 98 cases, 60 were male and 38 were female. The reason for this male excess is unknown.

Cases were reported throughout each year. Overall most reports were received in January and March (7 cases reported each month) and fewest in July (2 cases). There was no clear year on year seasonality, however.

Cases were reported from all regions of Great Britain, except Wessex, and from Scotland and Northern Ireland. No cases were reported from Wales or the Republic of Ireland. Information on outcome was received for 49 cases. Of these, 29 died, 10 survived with neurological damage and 10 survived with an unknown neurological status.

The cause of HSES is still unknown and after a decline in 1986 in spite of the introduction of the BPSU, the reason for its increase in 1987-1988 is unclear. A study, funded by the Foundation of Sudden Infant Death, to determine the possible role of overheating in HSES, is nearing completion and data are currently being analysed. Case ascertainment was discontinued from January 1989 because the initial fear that the first cases of this "new" disease, described in 1982, were possible the start of an epidemic of a new type of viral haemorrhagic fever, have proved groundless.

* Reporting through the BPSU has shown that HSES has remained a rare form of encephalopathy since it was first described. It presents most commonly in the first six months of life. Although there is no specific diagnostic marker, it should be considered in infants with encephalopathy complicated by fever, profound shock, disordered coagulation and profuse diarrhoea. Mortality and CNS morbidity rates are high.

- Dr S M Hall - PHLS CDSC, 61 Colindale Avenue, London NW9 5EQ

3.7 SUBACUTE SCLEROSING PANENCEPHALITIS

Since the last report, 21 cases of subacute sclerosing panencephalitis (SSPE) have been reported to the SSPE Register through the BPSU. Nine of these were eligible for the Register which is restricted to patients resident in England or Wales. Two cases were duplicates and 5 of the remaining 7 had already been notified from other sources, leaving 2 for which the BPSU was the first notification. The other BPSU notifications were of cases in the Republic of Ireland (4), Northern Ireland (4) Scotland (2) and 2 foreign residents who are not included in the Register follow-up.

The yield of only 2 new cases from this source was again small but it is extremely important since it confirms that the majority of cases are already being notified through the established channels. These include laboratory reports to CDSC, voluntary notification by paediatricians and neurologists, annual postal enquiry to neurologists, and death certificates. As the incidence of SSPE falls, under-notification assumes an even greater importance and reassurance from the BPSU that this is not occurring is most valuable.

The number of cases on the Register is currently 278; 205 (74%) are males. Between 1970 and 1988 the age of onset of SSPE increased significantly particularly in females, although the age at which measles was contracted showed no change in either sex. Current analysis of the data includes geographical differences in incidence and changes in risk following the decrease in notified measles.

* Respondents should continue to notify every case of SSPE they see. Duplicate notifications are reassuring, while even one un-notified case is a serious loss to the Register and undermines its credibility.

- Dr C Miller - PHLS CDSC, 61 Colindale Avenue, London NW9 5EQ

3.8 GALACTOSAEMIA

Reporting of new cases of classical galactosaemia commenced in January 1988. In the first year of the proposed three year study, 22 cases have been identified in the UK and Eire. This suggests that the incidence may be higher than the suggested 1 in 70,000 for the UK.

To date, 75% of the non-familial cases have started on diet by three weeks of age. There are no known deaths amongst this cohort but two previous sib deaths are reported from different families. More data are required to evaluate the case for screening for galactosaemia in the UK.

The notifying paediatricians have been asked for further details of monitoring, biochemical and clinical, as there is no agreed policy on this.

- The emerging evidence about the long-term complications of neuro-developmental disorder and ovarian dysfunction means that a national prospective study needs to be considered.

- Mrs A Green, Dr J Holton, Dr H Honeyman*, Dr J V Leonard - *The Child & Family Centre, 142 Maas Road, Northfield, Birmingham B31 2PR

3.9 DROWNING AND NEAR DROWNING

To date the investigators have received 84 confirmed reports of near drowning incidents from the BPSU for 1988 and a further 37 fatality reports from Royal Society for the Prevention of Accidents (RoSPA) press cutting survey and from OPCS. Thanks to the help of the notifying consultants it was possible to pool a substantial amount of information regarding medical outcome and the circumstances of these incidents from hospital notes. Further information on drowning deaths is being collected from Coroners.

Of particular note was one child who presented unconscious with fixed dilated pupils yet made a complete recovery. Five of the 84 cases of near drowning were subsequently severely handicapped.

The drowning and near drowning incidents divide into a number of groups. The investigators were surprised and worried by the number of incidents involving inquisitive toddlers in garden ponds and private pools. 17 near drowning incidents and 10 drownings in private pools were notified in 1988. Two of the near drowning children were left severely handicapped. There is a strong case for prevention with fencing of private pools by regulation.

Very few children have drowned in public swimming pools. Only one child was notified in 1988 as having drowned in a public swimming pool and there were 17 near drowning incidents. This may be a vindication of the strict safety regulations that have recently been introduced by the Health and Safety Executive.

There has also been a surprising number of incidents in the bath, particularly with babies. A number of older children continue to be drowned in rivers and lakes, although there have been relatively few sea drownings.

- The investigators have a substantial amount of medical data to analyse over the next 12 months of the study, and a unique cohort of patients that may provide data for further radiological and psychological studies. It is hoped that from the information collected already it will be possible to give fairly clear guidelines for the management of children with near drowning, and also to give definite information which would be useful for targeting efforts to prevent drowning incidents

- Dr A Kemp, Dr J R Sibert - Department of Child Health, Llandough Hospital, Penarth, South Glamorgan CF6 1XX

3.10 CHILDHOOD ONSET DIABETES

Diabetes, a disease more common than those usually reported to the BPSU, was surveyed for 1 year. Information was collected on children under the age of 16 years who developed diabetes between 1st January and 31st December 1988. The average number of cases reported monthly to the BPSU was 93, range 64 (May) to 118 (September). By the end of 1988 a total of 1118 cases had been reported to the BPSU. In January 1989 each of the 350 consultants who had

reported at least one case was sent a list of the cases and asked to report any which were outstanding or had inadvertently been missed. The remaining consultant paediatricians who had not reported a case of diabetes in 1988 were asked for details of any missed cases. A further 385 cases were reported directly to Bristol, either by the use of photocopied forms, or directly from interested physicians (45 cases) or the parents themselves (10). By agreed convention summary data on behalf of paediatricians already participating in the Barts/Oxford (BOX) study and members of the Scottish Study Group (SSG) were sent directly to Bristol by the administrators of these studies. By mid-May 1989 the total number of children with diabetes on the database was 1550.

The data shown in Table 2 are <u>preliminary</u>. <u>Complete</u> information has been obtained from consultant paediatricians (and BOX and SSG) on 1388 children, 721 boys and 667 girls.

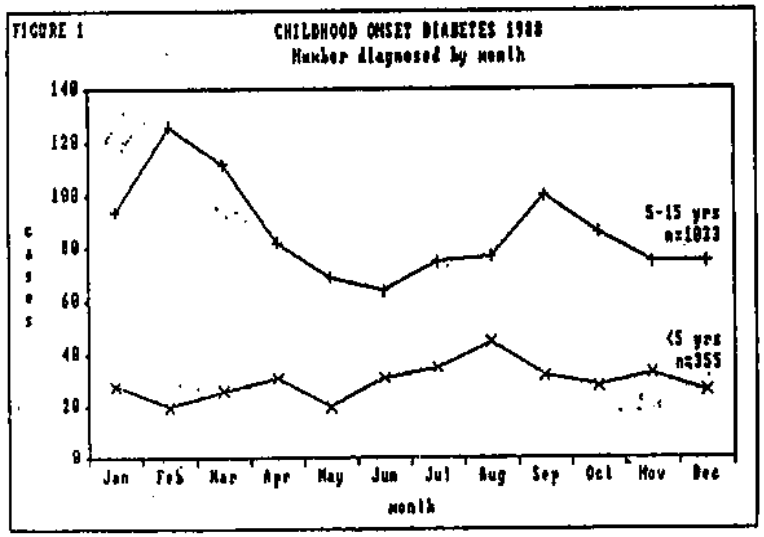
Table 2: Childhood onset diabetes - Numbers (percentages) diagnosed analysed by age and sex

	0 - 4 yr	5 - 9 yr	10 - 15 yr	TOTAL
Male	189 (26)	224 (31)	308 (43)	721 (100)
Female	166 (25)	219 (33)	282 (42)	667 (100)
TOTAL	355 (26)	443 (32)	590 (42)	1388 (100)

Ratio of boys to girls - 1.1 : 1
Average age at diagnosis - 8.6 yr (range 0.1 - 15.9 yr)

There was no difference between the sexes, but it is interesting to note that 26% of the children were aged under 5 at diagnosis. Figure 1 shows the numbers diagnosed by month. The monthly rate for the under-5's was reasonably constant, but those in the age group 5 - 15 yr show the autumn and winter peaks reported by other workers.

FIGURE 1



When the numbers of children reported in each regional health authority are analysed there is an apparent greater than two-fold difference in incidence between the lowest (6/100,000) and the highest (16/100,000), but rigorous ascertainment checks will be necessary to confirm this.

There is no doubt that the addition of diabetes to the orange card for 12 months increased the workload of paediatricians considerably. It is clear, however, that in principle the BPSU can, occasionally, serve to collect information on the less rare conditions of childhood.

* The number of children in the British Isles who developed diabetes in 1988 was at least 1550, 25% higher than anticipated. Almost every day during 1988 one child under the age of 5 years was identified as having diabetes. There appears to be a greater than two-fold difference in incidence of childhood-onset diabetes across the regions.

- Professor J D Baum*, Dr E A M Gale, Professor R J Jarrett, Miss M A Metcalfe* - *Institute of Child Health, Royal Hospital for Sick Children, St Michael's Hill, Bristol BS2 8BJ

3.11 HAEMORRHAGIC DISEASE OF THE NEWBORN

The study of haemorrhagic disease of the newborn (HDN) began in March 1988, with a case definition of: "Any infant under 6 months of age with spontaneous bruising/bleeding or intracranial haemorrhage associated with prolonged clotting times not due to an inherited coagulopathy or disseminated intravascular coagulation". Paediatricians were asked to notify suspected cases as well as those confirmed by laboratory data. Of the 38 reports received in the first 9 months of the study, 14 cases were considered "confirmed" by the investigators on the basis of clinical data supplied and laboratory evidence of prolonged prothrombin and partial thromboplastin times in the absence of thrombocytopaedia.

All 14 infants were born after 36 weeks gestation and were of normal birth weight. Thirteen had been solely breast fed whilst the other received a cow's milk formula initially and a soy infant formula from day 14 of life. The infants presented with significant haemorrhage between 3 days and 9 weeks after birth; 6 cases presented with intracranial haemorrhage which proved fatal in one. In 7 cases there were minor "warning" bleeds or bruising 1-14 days before presentation with a major bleed.

One of the 14 infants was delivered in a unit having a policy of routine intramuscular prophylaxis for all neonates but the reporting paediatrician was unable to establish, from the parents or anyone else, that this baby had received the injection of vitamin K. Of the remaining 13 cases, 7 had received no prophylaxis, 5 had received a single oral dose of vitamin K (1 mg in 4 cases, 0.5 mg in the other) and in one case a 1 mg oral dose was thought to have been given. There was no report of a case of HDN in a baby who definitely received intra-muscular prophylaxis.

* Based on these preliminary data, the investigators concluded that intramuscular prophylaxis with vitamin K1, 1 mg, protects against HDN. Prophylaxis with the same dose given orally is less effective but probably better than no prophylaxis. If oral prophylaxis is to be used, regimens using larger or repeated doses, or different formulations, should be considered.

- Dr A W McNinch, Dr J H Tripp - Dept of Child Health, Royal Devon & Exeter Hospital, Barrack Road, Exeter EX2 5DW

3.12 FUTURE DEVELOPMENTS

A study of higher order births (HOBs) - that is, triplets and upwards - began in January 1989 and will run for one year. The principal investigators are Professors Malcolm Levene and Philip Steer, and the study has the support of the British Association of Perinatal Medicine. Research aims are: to ascertain the current incidence of HOBs; to study whether these mothers became pregnant spontaneously or by artificial means; to determine whether such babies display a higher incidence of congenital malformations or intrauterine growth retardation; and to document the impact of the deliveries on the neonatal services.

Surveillance of congenital toxoplasmosis (CT) was expected to begin in mid-1989, with the support of the Department of Health, primarily to ascertain the incidence of this condition and to aid decision-making about its possible prevention by an antenatal screening programme. Secondary objectives are to determine the diagnostic criteria for CT being used by British paediatricians; the therapeutic regimes followed; and the nature and extent of neurodevelopmental abnormality in cases reported.

As at May 1989, possible studies on which a decision had yet to be reached included asthma deaths, ataxia telangiectasia, dystrophia myotonica and toxic shock syndrome.

4 CASES REPORTED (SUMMARY)

The numbers of cases reported up to the end of 1988 are shown in Table 3. In each column the figure under "A" is the total number of reports received and the figure under "B" is the corrected figure excluding cases not yet followed up, those reported in error and those double-reported within the BPSU system. Numbers of cases given here may differ slightly from the preceding section for reasons of definition and because different time-periods may be used.

Follow-up of reports

The time taken to follow up a report varies greatly between conditions, as does the "accuracy" of reporting measured by the proportion of cases confirmed. Table 4 shows the outcome of follow-up by the appropriate research worker of all cases reported up to the end of 1988. The possible outcomes are explained below the table.

Figure 2 (page 15) illustrates the proportion of reports for each condition represented by the possible outcomes.

Table 3: Cases reported - 1986, 1987, and 1988 by quarter

	1986		1987		1988								total	
	June-Dec		Jan-Dec		Jan-Mar		Apr-Jun		Jul-Sep		Oct-Dec			
CONDITION	A	B	A	B	A	B	A	B	A	B	A	B	A	B
AIDS	25	12	35	10	7	0	19	3	12	2	9	1	47	6
Neonatal herpes	17	8	29	17	8	2	9	3	7	1	3	2	27	8
Reye	35	15	45	22	18	8	3	2	9	4	16	8	46	22
Kawasaki	84	72	106	84	25	22	36	24	31	21	37	31	129	98
HUS	35	30	63	47	13	8	20	14	26	23	27	19	86	64
HSES	10	10	17	8	12	5	9	1	7	3	7	2	35	11
SSPE	23	14	27	18	1	1	4	0	8	5	0	0	13	6
Galactosaemia	-	-	-	-	12	4	12	6	7	4	10	3	41	17
Drowning	-	-	-	-	20	16	43	37	34	29	11	9	108	93
IDDM	-	-	-	-	294	266	239	222	302	268	283	226	1118	982
HDN	-	-	-	-	5	2	10	1	12	4	11	6	38	13
ALL	229	161	322	206	415	336	404	313	455	364	414	307	1688	1320

A: All reports received B: Cases confirmed at 1/4/89

NOTES

AIDS: a) Reports in June 1986 included all cases seen previously.
b) Cases "not confirmed" include many with ARC or HIV-related disease not meeting the strict definition of AIDS.

Neonatal herpes: Reports in June 1986 included all cases seen in the previous 12 months.

SSPE: a) Reports in June 1986 included all cases seen in the previous 12 months.
b) Cases "not confirmed" include all those outside England and Wales, which are not followed up by CDSC.

HDN: Reporting began in March 1988.

Table 4: Outcome of follow-up of cases reported to end of 1988, at 1/4/89

CONDITION	VALID Ia	VALID Ib	INVALID IIa	INVALID IIb	NYK III	TOTAL	PERCENT IN EACH OF: I	II	III
AIDS	27	1	17	37	25	107	26%	50%	23%
Neonatal herpes	33	0	5	23	12	73	45%	38%	16%
Reye	56	3	19	34	14	126	47%	42%	11%
Kawasaki	251	3	24	17	24	319	80%	13%	8%
HUS	98	43	4	8	31	184	77%	7%	17%
HSES	26	3	6	8	19	62	47%	23%	31%
SSPE	22	16	9	2	14	63	60%	17%	22%
Galactosaemia	17	0	4	11	9	41	41%	37%	22%
Drowning	92	1	8	0	7	108	86%	7%	6%
IDDM	970	12	44	26	66	1118	88%	6%	6%
HDN	12	1	0	19	6	38	34%	50%	16%
ALL	1604	83	140	185	227	2239	75%	15%	10%

OUTCOMES

I VALID REPORT:
Ia: Case followed up and confirmed by research worker.
Ib: Case confirmed, but already known to research worker from another source (not a duplicate with the BPSU scheme).

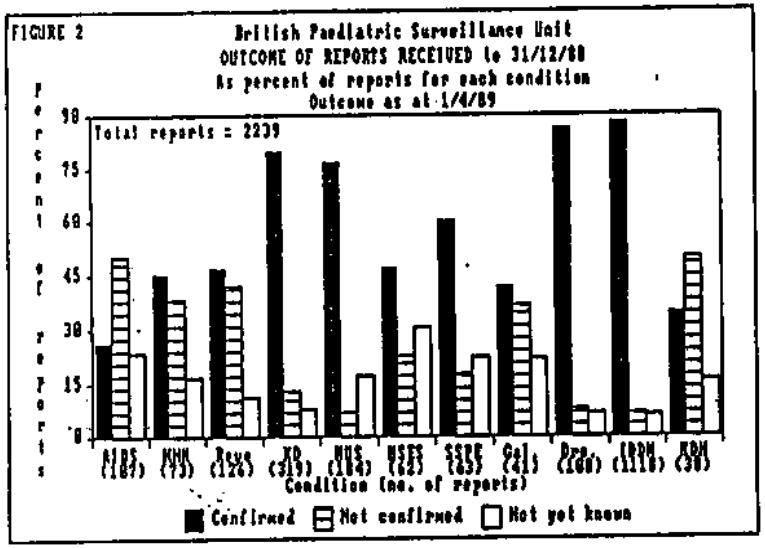
II INVALID REPORT:
IIa: Duplicate report within the BPSU scheme.
IIb: Reporting error (eg ticked wrong box), revised diagnosis, uncertain case not meeting definition, or unable to follow up. See above re AIDS and SSPE.

III NOT YET KNOWN:
Not yet followed up by research worker at 1/4/89.

One-off surveys

In January 1988 respondents were asked to report any cases of rheumatic fever seen in 1987. 15 cases were reported.

In April respondents were asked, at the request of the National Congenital Rubella Surveillance Programme, to report any cases of congenital rubella known to them born between 1/1/86 and 31/12/87. There were 20 reports.



5 PARTICIPATION

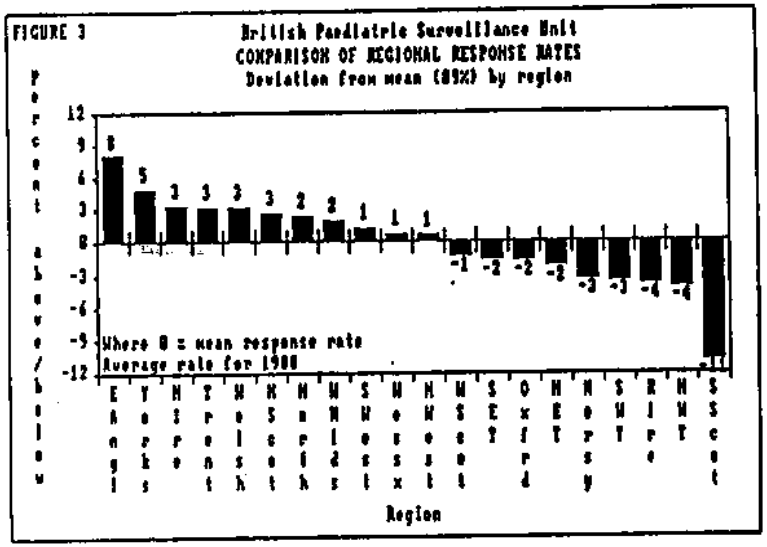
The number of consultant paediatricians participating in the scheme ranged in 1988 from 814 to 832. To ensure that the mailing list is up-to-date, the BPSU office notes changes sent in by members for the BPA Handbook and monitors new consultant appointments. The average response rate for the year (calculated as the percentage of cards sent out which have been returned within 90 days after the mailing) was 88.6% overall: a breakdown by month and quarter is given in Table 5.

Table 5: Response rate by month, 1988				
MONTH	CARDS SENT	RETURNED	RESPONSE RATE	AVERAGE FOR QTR
January	814	729	89.6%	
February	817	732	89.6%	
March	816	721	88.4%	89.2%
April	817	725	88.7%	
May	823	723	87.8%	
June	821	725	88.3%	88.3%
July	823	742	90.2%	
August	825	727	88.1%	
September	823	734	89.2%	89.2%
October	817	733	89.7%	
November	830	740	89.2%	
December	832	722	86.8%	88.6%

The response rate varies considerably between regions. The highest regional rate for 1988 was 96.8% (East Anglia) and the lowest was 78.1% (Southern Scotland). Table 6 shows for each region the average number of members, average cards returned and average response rate for 1988. (The Republic of Ireland and Northern, Western and Southern Scotland are treated as regions.)

Table 6: Response rate by region, 1988				
REGION	CARDS SENT	RETURNED	RESPONSE RATE	RANKING
Northern	44	40	91.1%	7
Yorkshire	46	43	93.6%	2
Trent	55	51	92.0%	4.5
East Anglian	24	23	96.8%	1
NW Thames	53	45	84.8%	19
NE Thames	73	63	86.7%	15
SE Thames	57	50	87.3%	13
SW Thames	34	29	85.4%	17
Wessex	35	32	89.4%	10.5
Oxford	35	30	87.2%	14
South Western	32	29	90.0%	9
West Midlands	70	63	90.7%	8
Mersey	31	27	85.5%	16
North Western	53	47	89.4%	10.5
Wales	35	33	92.0%	4.5
North Scotland	17	15	91.5%	6
South Scotland	24	18	78.1%	20
West Scotland	34	30	87.7%	12
Northern Ireland	17	16	92.2%	3
Republic of Ireland	54	46	85.1%	18
ALL REGIONS	822	729	88.8%	

Figure 3 illustrates the spread of regional response rates by comparing deviations from the national average. Regions are in rank order.



Members who have not returned a card for six consecutive months are sent a reminder letter. These often turn out to be members who have retired, and are therefore removed from the mailing list. The numbers of persistent "non-respondents" are small, in contrast to the cohorts of 69 and 34 members investigated in the first year of the scheme, and appear randomly distributed.

6 PUBLICATIONS

The then Scientific Advisory Committee approved in January 1988 a document on Ethical Approval of BPSU National Surveys. The Introduction to the Reporting Scheme and Guidelines on Applications for the Inclusion of Studies were revised in January 1988. The latter was subsequently revised again for re-issue in May 1989.

The following reports have been published:

British Paediatric Surveillance Unit: Fourth Summary Report. Communicable Disease Report 88/02. 15/1/88
British Paediatric Surveillance Unit: Fifth Summary Report. Communicable Disease Report 88/19. 13/5/88
British Paediatric Surveillance Unit: Sixth Summary Report. Communicable Disease Report 88/42. 21/10/88
British Paediatric Surveillance Unit: Seventh Summary Report. Communicable Disease Report 89/15. 14/4/89

The British Paediatric Surveillance Unit. Hall S M, Glickman M. Archives of Disease in Childhood 1988. 63:344-346
Report from the British Paediatric Surveillance Unit. Hall S M, Glickman M. Archives of Disease in Childhood 1988. 63:1117-1118

Report from the British Paediatric Surveillance Unit. Hall S M, Glickman M. Archives of Disease in Childhood 1989, 64:439-440

7. PRESENTATIONS AND PUBLICITY

A half-day symposium was held on 5th October as part of a week of events marking the official opening of the Institute of Child Health in Bristol. Papers were given on Reye's syndrome, diabetes, near drowning, congenital rubella and AIDs.

The following papers based on BPSU studies were accepted for plenary presentation at the BPA annual scientific meeting in April 1989:

Paediatric AIDS and HIV infection in the UK - Dr G A Ellam
Surveillance of Kawasaki disease in the British Isles - Dr S M Hall
National survey of childhood-onset diabetes, 1988 - Professor J D Baum

The following papers were presented at the British Association for Paediatric Nephrology group session:

The expression of blood group P1 in post-enteropathic haemolytic uraemic syndrome - Dr D V Milford
Evidence of neutrophil activation in post-enteropathic haemolytic uraemic syndrome - Dr D V Milford

8 OVERSEAS CONTACTS

Great interest in the BPSU has been shown by colleagues abroad, including Belgium, Holland, Israel, Italy and New Zealand. The progress of the BPSU has been discussed by the Union of National European Paediatric Societies and Associations (UNEPSA), which is interested in encouraging the establishment of similar schemes in Europe and collaboration between such national schemes.

9 FUNDING

The BPSU continued up to the end of the financial year 1988/89 to be supported primarily by a donation from an anonymous Trust received by the BPA through the Royal College of Physicians of London. From 1989 the Unit is funded for three years by a generous grant from Children Nationwide, paid through the RCP Appeal. We are also grateful to Sanofi Pharma for printing of the Annual Report, to Allen & Hanbury, and to a private donor for a donation of £100.

All the research workers are now paying the contribution requested by the Unit, which in 1988/89 was £72 per month.