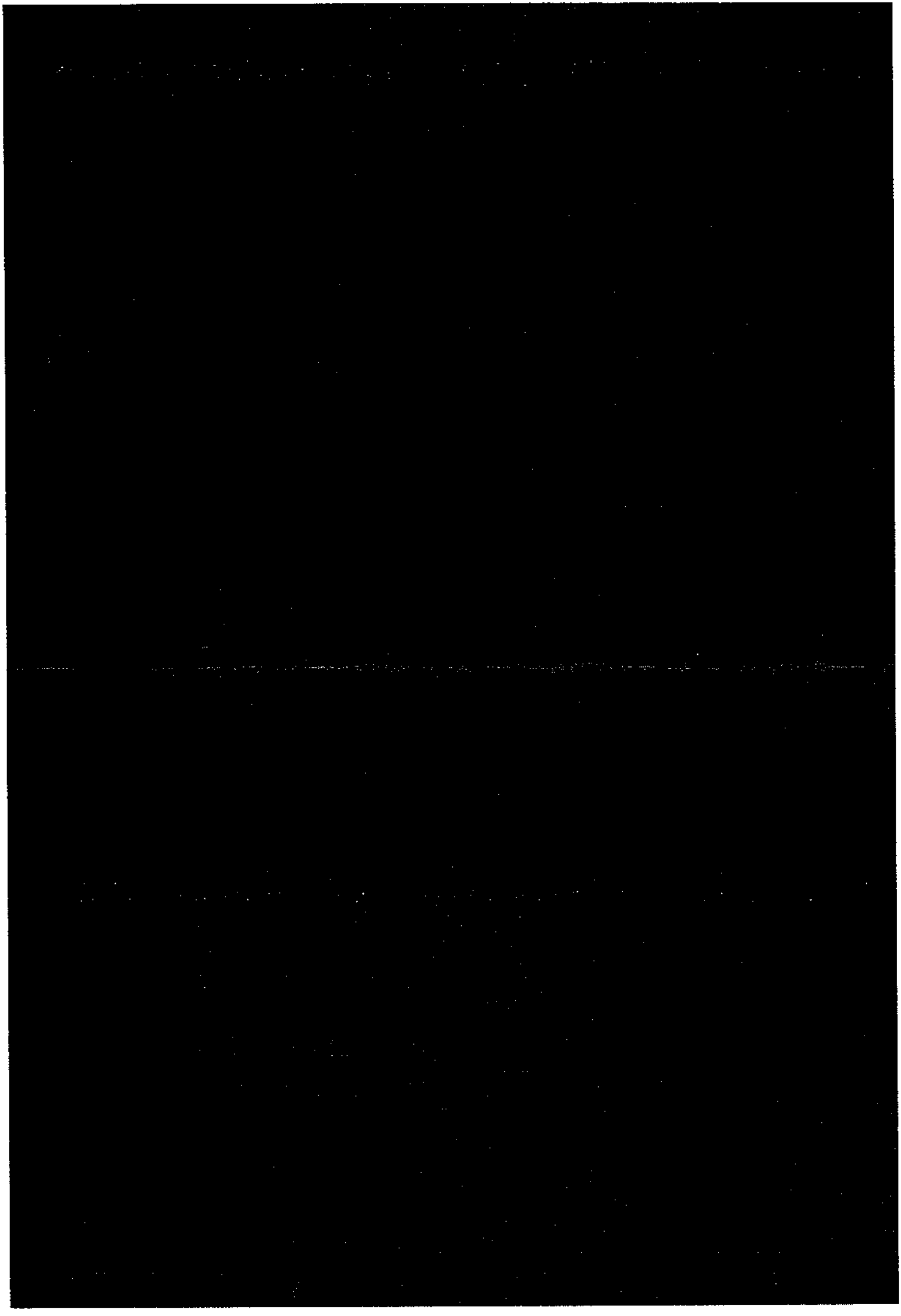

BRITISH PAEDIATRIC SURVEILLANCE UNIT

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

Second

ANNUAL REPORT

1986-87

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1 FOREWORD

This second annual report of the British Paediatric Surveillance Unit (BPSU) comes at a time of consolidation in the operation of the Unit. Since its inception in 1985, the BPSU system has been proven in practice to be an effective means of case ascertainment for rare conditions and an important contribution to paediatric research, and thus to the health of children generally.

The help and advice provided by the BPSU in the design of protocols and proformas for data collection has been an important side benefit for which researchers have expressed their appreciation.

We are grateful for generous support from Allen & Hanburys Ltd, Schering Plough Corporation and Sanofi UK Ltd, and for the continuing support of an anonymous Charitable Trust.

I should like to thank the members of the Scientific Advisory Committee, so wisely chaired by Sir Peter Tizard, who have conscientiously supervised the running of the scheme. Thanks are due also to the staff of the Unit, Dr Susan Hall, Mr Myer Glickman and Mrs Myra Schenkman, and to the BPA secretariat for their help and support.

Most of all, my thanks go to the paediatricians throughout the United Kingdom and the Republic of Ireland whose enthusiastic co-operation makes the scheme possible.

Sir Cyril Clarke

Chairman of Steering Committee

2 INTRODUCTION

The BPSU was set up to involve paediatricians nationally in the surveillance of communicable diseases and of rare childhood disorders, making possible the ascertainment of cases on the scale needed for both clinical and epidemiological study of uncommon diseases such as paediatric AIDS and Reye's syndrome. The Unit has now been in existence for over two years and the reporting system in operation for 18 months. This report covers the period June 1986 to August 1987 (reporting months 1 to 15).

The Unit was established by the British Paediatric Association (BPA), the Communicable Disease Surveillance Centre (CDSC) of the Public Health Laboratory Service, and the Department of Epidemiology at the University of London Institute of Child Health (ICH), under the overall direction of a Steering Committee representing these three bodies. A Scientific Advisory Committee (SAC) scrutinises proposals for the inclusion of studies and monitors the working of the scheme.

The basis of the reporting scheme is the mailing of a monthly report card to consultant paediatrician members of the BPA and Irish Paediatric Association. Respondents return the card to the BPSU office, marking the number of cases seen of specific conditions or ticking a "nothing to report" box. For members in Scotland, the scheme operates via the Communicable Diseases (Scotland) Unit based at Ruchill Hospital, Glasgow. Since the BPSU scheme began, the response rate (proportion of members returning the card) has risen to over 88%. Full details of response rates are given in **Part 5** of this report.

When the BPSU receives a report of a case the research worker studying that condition is informed and either sends a short questionnaire to the reporting consultant or requests a loan of the case notes. The researcher subsequently notifies to the BPSU the number of confirmed cases, and for certain conditions gives basic epidemiological data. This information is used to monitor the effectiveness of the system and identify duplicate reports and other possible sources of error. Tables of cases reported are included in **Part 4** of this report.

3 CONDITIONS INCLUDED

Conditions are included in the reporting scheme, up to a maximum of twelve at one time, on application by a research worker and approval by the SAC. Guidance on the submission of applications can be found in the booklet Guidelines on Applications for Inclusion of Studies which is available from the BPSU office. Copies of the Introduction to the Reporting Scheme, summary protocols and reporting instructions for the conditions included are also available.

Names and addresses of the principal investigators are listed in **Appendix A**.

The following studies are currently included in the reporting scheme:

AIDS in childhood

Children with symptomatic AIDS, but not with HIV infection only, are reported. Cases so far have been associated with haemophilia, transfusion of blood and high risk parents.

The present system, using the BPSU as the major vehicle for the surveillance of AIDS in children, is working extremely well. Since the BPSU scheme started, only one case has been reported directly to CDSC (the study base) and not to the BPSU.

A summary report on paediatric AIDS surveillance is included in the BPSU Third Summary Report.

Neonatal herpes

Of 30 cases of neonatal herpes reported, ten were rejected as cases on follow-up - these included older children (not neonatal), maternal herpes not transmitted to the baby, skin disorders and neonatal chickenpox. Eleven cases were confirmed (six of them died), and nine were still outstanding at time of writing.

Reye's syndrome
Kawasaki disease
Haemolytic uraemic syndrome (HUS)
Haemorrhagic shock encephalopathy syndrome (HSES)

Reporting of these conditions has enabled the effectiveness of the BPSU's "active" method of case ascertainment to be measured by comparing numbers of reports received with those received during the preceeding 3-4 years when a "passive" method was employed. There was a dramatic increase in reporting of Kawasaki disease - numbers in 1986 rose steeply in the second half of the year to reach an annual total of 77 compared to 32, 16 and 17 in 1983, 84 and 85 respectively. A similar increase occured in haemolytic uraemic syndrome reports - 114 in 1986 compared to 31, 46 and 85 in 1983-5.

There was also an apparent increase in Reye's syndrome reports which was disappointing because it immediately followed the warning concerning a possible aspirin association issued by the Committee on Safety of Medicines in June 1986. Detailed analysis, however, showed that some of these cases were children whose onsets were before June 1986, some were duplicate reports and some were patients who subsequently had their diagnosis revised. In fact the Reye's syndrome surveillance scheme has shown that, in spite of a better method of case ascertainment, numbers since June 1986 have been lower than ever recorded before. It has therefore been an important measure of the effectiveness of a public health preventive intervention.

In contrast to the other three conditions, reports of HSES did not increase following introduction of the BPSU. Numbers were greatest in 1982 and 1983 and had been declining in 1984, 85, 86 and 87. It could therefore be surmised that some unusual exogenous agent associated with HSES was particularly prevalent in the early 80's but has since declined.

Copies of a recent summary report on the BPSU/CDSC Reye's Syndrome Surveillance Scheme are available from the BPSU office.

Subacute sclerosing panencephalitis (SSPE)

The SSPE register was set up in 1970 to monitor the effect of the national measles immunisation campaign on the incidence of SSPE in England and Wales. Although only 4 of the 20 BPSU reports of SSPE cases living in England and Wales who had been followed up at the time of writing had not already been reported to the registry, this "yield" was still considered extremely valuable by the investigator. It is essential to strive for 100% ascertainment because the incidence of SSPE at last seems to be falling.

A summary report on SSPE was included in the BPSU Fourth Summary Report.

Lowe Syndrome

Lowe Syndrome is a rare handicapping disorder inherited in an X-linked recessive manner. Affected males are severely mentally retarded, visually handicapped (due to congenital cataracts and sometimes glaucoma) and have aminoaciduria often with secondary rickets. The underlying biochemical abnormality is unknown.

In addition to the notifications of Lowe syndrome cases received through the BPSU, individuals have written to suggest other sources of cases, and 25 affected individuals have now been ascertained. The clinical follow-up of notified cases continues as does the DNA work. Individual families have felt less isolated through knowing about, and participating in, the project.

The following studies have now been completed:

X-linked anhidrotic ectodermal dysplasia (XLAED)

XLAED is a rare inherited disease of variable clinical form. Affected males have sparse body and scalp hair, few sweat glands and few if any teeth. The principal hazard of the condition is over-heating, which can cause death in early infancy. The survey was carried out for three months (June-August 1986). At its conclusion, th investigatore reported that he had learned of 11 new cases. A further 3 patients reported were already known to him.

Childhood onset diabetes - pilot survey

This pilot survey was carried out for three months (September-November 1986) in the South Western Region only. In that period 20 cases of insulin-dependent diabetes mellitus (IDDM) in children were reported. This would suggest a national incidence of around 100 cases per month.

The following new studies will be added in 1988:

Drowning and near drowning

This study, supported by the Child Accident Prevention Trust, is of cases of accidental drowning and near-drowning in children. Information is sought on the nature and long-term effects of near drowning, the role of resuscitation, and the possible prevention of such accidents.

Galactosaemia

Inclusion of a study of galactosaemia, an enzyme abnormality causing severe illness neonatally or in the first year of life has been agreed. The main object of the study is to obtain new data which will help assess the cost-benefit of introducing screening for this condition in the UK.

Childhood onset diabetes - national survey

Although diabetes is a much more common condition than those presently included in the scheme, a convincing case was presented to the SAC for its inclusion for one year, from January to December 1988. Earlier studies have suggested that the incidence is increasing, and this must have major implications for health service planners. More demands will be made on cardiac, ophthalmic and renal services unless radical improvements in the prevention of micro- and macro-vascular diseases associated with long-term diabetes become available. The British Diabetes Association has awarded a grant for this survey. A number of hypotheses relating to family patterns of inheritance and geographical spread will be tested.

Haemorrhagic disease of the newborn (HDN)

A proposal for a study of haemorrhagic disease of the newborn has been agreed and details are currently under consideration. HDN, which can cause spontaneous bleeding in infants, is associated with a clotting defect which can be corrected with vitamin K.

Rheumatic fever

Respondents will be asked to report in January 1988 any cases of rheumatic fever seen in the past year. This survey follows reports from the USA that rheumatic fever has recently been increasing.

Congenital rubella

The National Congenital Rubella Surveillance Programme has requested the assistance of the BPSU in ensuring the completeness of ascertainment of cases born in 1986 and 1987. Respondents will be asked to report all such cases in the April mailing.

4 CASES REPORTED

Ascertainment of cases has continued to show a marked improvement on previous, passive surveillance systems. The system is now seen to be functioning smoothly and offers a more consistently effective means of case ascertainment than any currently available alternative methodology.

The two main weaknesses which have been found in the reporting scheme are the anonymity of cases and its unsuitability for acute reporting. The anonymity of cases reported can entail extra work for the reporting paediatrician in tracing casenotes and for the investigator in ensuring that there is no duplication in their database or register. The report card has been redesigned in an attempt to overcome this problem. The monthly cycle of the system makes it less suited to collection of immediate

information, for instance about a local outbreak of a disease.

Table 1 shows the number of cases reported for each condition in each quarter of the first fifteen months of reporting (June 1986-August 1987). A dash ("-") indicates that the study concerned was not in progress in the relevant month. 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.

TABLE 1 - CASES REPORTED
by quarter - for the 15 months June 1986 to August 1987

	1st Qtr Jun-Aug		2nd Qtr Sep-Nov		3rd Qtr Dec-Feb		4th Qtr Mar-May		5th Qtr Jun-Aug		TOTAL	
CONDITION	A	B	A	B	A	B	A	B	A	B	A	B
a) AIDS	14*	7	9	6	6	3	8	5	7	1	44	22
b) Herpes	7*	6	8	2	2	0	4	1	9	5	30	14
c) Reye's	15	10	16	5	12	3	6	2	7	5	56	25
d) Kawasaki	33	30	36	31	29	22	25	21	28	19	151	123
e) HUS	20	18	13	11	6	4	12	7	23	8	74	48
f) HSES	2	2	2	2	9	7	4	1	3	0	20	12
g) SSPE	9*	8	14	11	2	1	8	6	9	7	42	33
h) XLAED	13	2	-	-	-	-	-	-	-	-	13	2
i) Diabetes+	-	-	20	20	-	-	-	-	-	-	20	20
j) Lowe	-	-	-	-	11	5	4	0	0	0	15	5
ALL	113	83	118	88	77	45	71	43	86	45	465	304

A: All reports received
B: Cases confirmed at 31/12/87
* First quarter includes all cases known or seen in last 12 months
\+ Pilot survey in South Western Region only

When a case is followed up by the appropriate research worker, it may be confirmed or found to be a duplicate report or an error. The most common reason for a case not to be confirmed is because the original diagnosis is revised; this has occurred most often in cases of Reye's syndrome and neonatal herpes. **Table 2** summarises the outcome of follow-up of cases reported in the first fifteen months. **Figure 1** illustrates the proportion of reports for each condition represented by the possible outcomes. Overall, some two-thirds of cases have been confirmed to date.

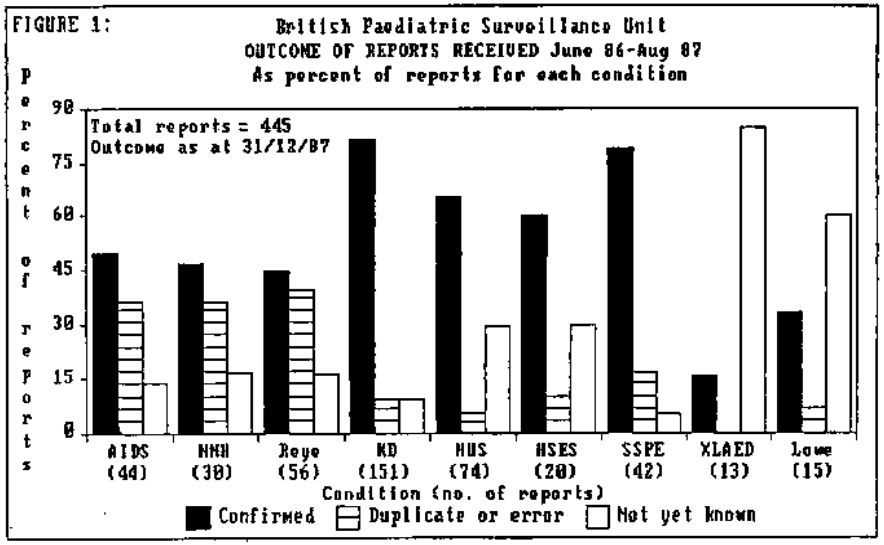
TABLE 2 - OUTCOME OF FOLLOW-UP
of cases reported in the 15 months June 1986 to August 1987

CONDITION	VALID Ia	VALID Ib	INVALID IIa	INVALID IIb	N/K III	TOTAL	PERCENTAGE IN EACH OF: I	II	III
a) AIDS	22	0	8	8	6	44	50.0%	36.4%	13.6%
b) Herpes	14	0	1	10	5	30	46.7%	36.7%	16.7%
c) Reye's	23	2	6	16	9	56	44.6%	39.3%	16.1%
d) Kawasaki	122	1	9	5	14	151	81.5%	9.3%	9.3%
e) HUS	30	18	0	4	22	74	64.9%	5.4%	29.7%
f) HSES	9	3	0	2	6	20	60.0%	10.0%	30.0%
g) SSPE	25	8	6	1	2	42	78.6%	16.7%	4.8%
h) XLAED	0	2	0	0	11	13	15.4%	0.0%	84.6%
i) Diabetes+	20	0	0	0	0	20	100.0%	0.0%	0.0%
j) Lowe	4	1	1	0	9	15	33.3%	6.7%	60.0%
ALL	269	35	31	46	84	465	65.4%	16.6%	18.1%

Ia: Case followed up and confirmed by research worker
Ib: Confirmed - already known to research worker from another source
IIa: Duplicate report within the BPSU scheme
IIb: Reporting error or revised diagnosis
III: Not yet known

+ Pilot survey in South Western Region only

FIGURE 1:



5 PARTICIPATION

The number of respondents participating in the scheme has ranged from 790 to 824. The mailing list changes each month according to new appointments, retirements, changes of post or address and other such factors. The response rate, calculated as the percentage of cards sent out which have been returned within 90 days after the mailing, rose from 73.2% in the first month (June 1986) to 87.5% after one year (May 1987), the best response rate to date being 89.1% in August 1987.* Details of response rates for the first fifteen months of operation are given in Table 3.

TABLE 3 - RESPONSE RATE BY MONTH
for the 15 months June 1986 to August 1987

MONTH	CARDS SENT	RETURNED	RESPONSE RATE	AVERAGE FOR QTR
01 June 1986	824	603	73.2%	
02 July	821	681	82.9%	
03 August	820	706	86.1%	80.7%
04 September	820	689	84.0%	
05 October	810	700	86.4%	
06 November	804	685	85.2%	85.2%
07 December	793	685	86.4%	
08 January 1987	799	705	88.4%	
09 February	797	693	87.0%	87.2%
10 March	797	707	88.7%	
11 April	794	697	87.8%	
12 May	790	693	87.7%	88.1%
13 June	814	722	88.7%	
14 July	816	725	88.8%	
15 August	816	727	89.1%	88.9%

Table 4 gives the number of members in each region, cards returned, average percent return and relative ranking for each region over the nine months December 1986 to August 1987. The Republic of Ireland and Northern, Western and Southern Scotland are treated as regions.

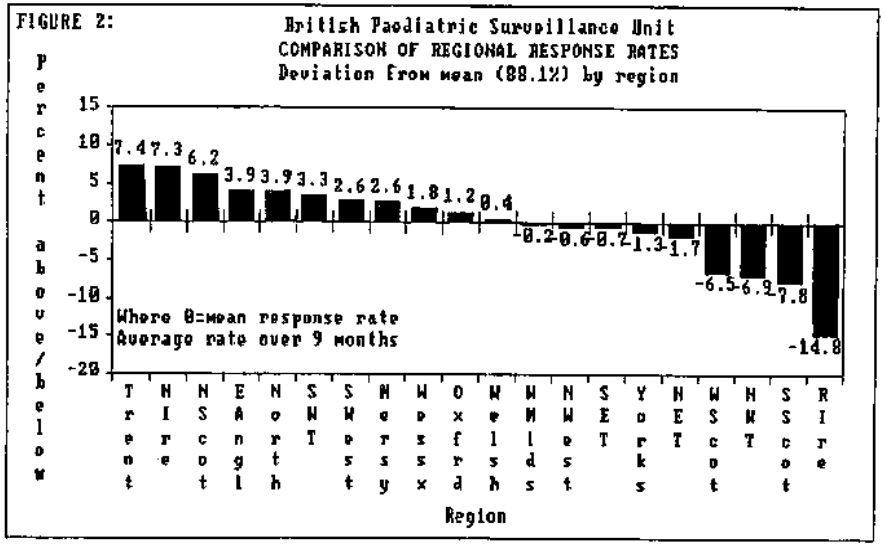
Figure 2 illustrates the spread of regional response rates by comparing deviations from the national average. Regional rates have varied in this period from a maximum of 100% to a minimum of 67.6% (Western Scotland, December). Regions which have achieved 100% return in one or more months include Northern Scotland, East Anglia and Trent.

* At time of going to press, the best overall response had risen to 91.3% - October 1987.

TABLE 4 - RESPONSE RATE BY REGION
as an average for the 9 months December 1986 to August 1987

REGION	CARDS SENT	RETURNED	RESPONSE RATE	RANKING
Northern	42	38	91.7%	7
Yorkshire	43	38	87.6%	14
Trent	54	52	95.1%	3
East Anglia	25	23	92.9%	4
North West Thames	46	37	82.0%	18
North East Thames	71	62	86.2%	16
South East Thames	59	51	86.5%	15
South West Thames	32	29	90.0%	11
Wessex	33	30	90.9%	8=
Oxford	35	32	90.9%	8=
South Western	31	28	90.4%	10
West Midlands	69	60	87.8%	13
Mersey	31	29	91.8%	6
North Western	55	48	88.4%	12
Wales	36	33	92.3%	5
North Scotland	16	15	95.3%	2
South Scotland	24	19	81.8%	19
West Scotland	37	30	82.8%	17
Northern Ireland	17	16	96.0%	1
Republic of Ireland	46	34	73.3%	20
ALL REGIONS	802	706	88.1%	

FIGURE 2:



In order to maximise the response rate and ensure as comprehensive a coverage as possible, members who consistently fail to return the report card are sent a series of reminders and letters requesting their co-operation. An initial group of 69 non-respondents was identified who had not returned any card since the start of the scheme. Many of these were found to be specialists unlikely to see any cases of the relevant conditions or had no clinical work, and were therefore removed from the mailing list. To date three further cohorts, of 34, 8 and 17 non-respondents, have been identified and reminders sent. The principal reasons for lack of response are given in Table 5.

TABLE 5 - REASONS FOR NON-RESPONSE
by members consistently failing to return a report card

REASON GIVEN in response to reminder letter	NUMBER IN EACH COHORT 1st	2nd	3rd	TOTAL
a) Had not received the cards (eg due to change of address)	5	6	-	11
b) Had been on leave or sick	4	2	1	7
c) A colleague had replied instead	6	1	1	8
d) Specialist not seeing any cases of the relevant conditions	11	2	-	13
e) Retired or doing no clinical work	8	3	-	11
f) Gone abroad	-	1	1	2
g) Had not realised that "nil returns" were wanted	6	-	1	7
h) Cost of postage or administrative inconvenience	2	-	1	3
i) Oversight or pressure of work	4	5	1	10
j) Did return the card - must be lost in the post	1	-	-	1
k) Other or no response	10	4	1	15
l) Returned card without giving reason for delay	12	10	1	23
TOTAL	69	34	8	111

6 REPORTS & DOCUMENTS

The summary protocols, case definitions and reporting instructions for the conditions included in the BPSU scheme were reprinted in the form of a set of A5 cards in a hard-back plastic wallet, providing a durable reference document for respondents. The wallet has room for the addition of new protocol cards as further conditions are added to the scheme.

A new Introduction to the Reporting Scheme has been compiled, along with a set of Guidelines on Applications for the Inclusion of Studies. These contain respectively, an overall explanation of the operation of the scheme for new respondents (or anyone else wanting a comprehensive introduction to the BPSU system) and detailed notes for the guidance of research workers wishing to apply for the inclusion of a study in the scheme.

An important aim of the BPSU is to simplify as far as possible the reporting of rare diseases by making available a single unified scheme. A secondary aim is that the BPSU should be aware of other national or regional enquiries in order to help avoid duplication of effort and confusion and annoyance to reporting paediatricians. With this in mind, an enquiry was sent to the BPA's twenty Regional Representatives asking them to list all surveys, which involved reporting patients to outside bodies, known to them to be operative in their region, and a report was compiled from their replies.

A short article on the BPSU by Dr S M Hall appeared in the PHLS Microbiology Digest of August 1986 (Vol 3 No 4).

A summary report on the BPSU/CDSC Reye's Syndrome Surveillance Scheme appeared in Communicable Disease Report (CDR) 87/33 dated 21 August 1987.

Copies of the above documents are available from the BPSU office.

The BPSU Third Summary Report which appeared in CDR 87/32 dated 14 August 1987 and the Fourth Summary Report which appeared in CDR 88/02 dated 15 January 1988 are attached to this report as **Appendices B & C.**

An article on the BPSU was published in the Archives of Disease in Childhood in March 1988.

7 PRESENTATIONS & PUBLICITY

Since it became operationally active there has been increasing interest in the BPSU and an increasing number of requests for formal presentations on its concept and activities. Twelve such talks were given by the Medical Coordinator in 1987 to paediatricians, community physicians, academic departments of epidemiology, parents' groups, the DHSS, and to the British Thoracic Society which is considering setting up a similar facility.

In addition, the Medical Coordinator has had many informal discussions about the BPSU with visitors, both home and overseas, to CDSC and to the Department of Epidemiology, ICH. Members of the Scientific Advisory Committee have also discussed the BPSU scheme with colleagues abroad. Talks given on the conditions reported to the BPSU, in particular on Reye's syndrome and AIDS, have included detailed reference to the value of the Unit in contributing to those studies and surveillance schemes.

Publicity in the media has included an interview on Radio 4's "Today" programme (with a request to return for a follow up to report progress) and an article in The Times.

8 FUNDING

The Unit has continued to be supported by a donation from an anonymous Trust received by the BPA through the Royal College of Physicians of London. The Medical Coordinator's post was funded to the end of 1987 half by the PHLS and half by a donation through the ICH, and from 1988 is a permanent appointment with the PHLS CDSC. These funds will continue into the financial year 1988/89. Alternative sources of long-term funding are now being sought.

Restoration and furnishing of the Research Floor of the BPA office, on which the BPSU is situated, was made possible by a generous donation of Children Nationwide to the Royal College of Physicians Appeal.

Steering Committee is grateful to Allen & Hanburys Ltd for production of the study protocols and to Sanofi UK Ltd for printing the Annual Report 1985/86. A generous donation was also received from Schering Plough Corporation.

It has been decided to ask research workers applying for the inclusion of a study to allow in their applications to funding bodies for a contribution to the costs of the BPSU, currently set at £72 per month. However, it is emphasised that no study will be rejected because of inability to pay this "voluntary fee" and proposals are considered on their scientific merits alone.

Appendix A

PRINCIPAL RESEARCH WORKERS & ADDRESSES

AIDS in childhood
Principal research worker: Dr G A Ellam
Research base: PHLS CDSC
61 Colindale Avenue
London NW9 5EQ
01-200 6868
Duration of study: June 1986 for three years (then subject to review)

Neonatal herpes
Principal research workers: Dr R Dinwiddie & Professor C S Peckham
Research base: Department of Epidemiology
Institute of Child Health
30 Guilford Street
London WC1N 1EH
01-242 9789
Duration of study: Initially June 1986 for one year, now extended to two years

Reye's syndrome
Kawasaki disease
Haemolytic uraemic syndrome (HUS)
Haemorrhagic shock encephalopathy syndrome (HSES)
Principal research worker: Dr S M Hall
Research base: PHLS CDSC
61 Colindale Avenue
London NW9 5EQ
01-200 6868
Duration of studies: June 1986 for three years

Subacute sclerosing panencephalitis (SSPE)
Principal research worker: Dr C Miller
Research base: PHLS CDSC
61 Colindale Avenue
London NW9 5EQ
01-200 6868
Duration of study: June 1986 for three years (then subject to review)

XLAGD
Principal research worker: Dr A Clarke
Research base: Department of Human Genetics
University of Newcastle upon Tyne
Newcastle upon Tyne
NE2 4AA
Duration of study: June 1986 for three months only

Lowe syndrome
Principal research worker: Dr C McKeown
Research base: Department of Medical Genetics
St Mary's Hospital
Manchester M13 0JH
061-276 6264
Duration of study: January 1987 for one year

Accidental drowning and near drowning
Principal research workers: Dr J R Silbert, Dr A Kemp & Dr H Jackson
Research base: Department of Child Health
Llandough Hospital
Penarth
South Glamorgan CF6 1XX
0222 708601
Duration of study: January 1988 for two years

Galactosaemia
Principal research workers: Mrs A Green, Dr J Holton & Dr J V Leonard
Research base: Dr M Honeyman (Research Fellow)
Department of Clinical Chemistry
Children's Hospital
Ladywood Middleway
Birmingham B16 8ET
021-454 4851
Duration of study: January 1988 for three years

Childhood onset diabetes
Principal research workers: Professor J D Baum, Professor R J Jarrett & Dr E A M Gale
Research base: Institute of Child Health
Royal Hospital for Sick Children
St Michael's Hill
Bristol BS2 8BJ
0272 215411
Duration of study: January 1988 for one year

Haemorrhagic disease of the newborn
Principal research workers: Dr A W McNinch & Dr J H Tripp
Research base: Department of Child Health
Royal Devon and Exeter Hospital
Barrack Road
Exeter
0392 77833
Duration of study: March 1988 for one year

Rheumatic fever
Principal research workers: Professor R J Robinson & Dr S M Hall
Research base: Department of Paediatrics
United Medical & Dental School
Guy's Hospital
London Bridge
London SE1 9RT
01-407 7600 ext 2093
Duration of study: January 1988 only

Congenital rubella
Principal research workers: Professor RW Smithells (North) & Dr H Holzel (South)
Research base: University Dept of Paediatrics & Child Health
D Floor, Clarendon Wing
The General Infirmary at Leeds
Belmont Grove
Leeds LS2 9NS
0532 432799 ext 3909 (North)
01-405 9200 ext 5285 (South)
Duration of study: April 1988 only

Appendix B

BRITISH PAEDIATRIC SURVEILLANCE UNIT : THIRD SUMMARY REPORT

This report updates those of the first six months of operation (CDR 86/46 and 87/07) and presents the results of the third quarter's mailings (January-March 1987). During this period the reportable conditions were the same as in the second quarter except that diabetes was replaced by Lowe's syndrome.

Cases reported and comment

The table shows, by 3 month period, the number of cases of each condition which were reported in the first nine months of operation of the BPSU and which have subsequently been confirmed by the individual investigators. These figures exclude cases not yet followed up, those reported in error and those double-reported within the BPSU system. Tables in previous reports have also included total (corrected for double reports and errors) reports by quarter. Those figures will now be omitted in interim reports for the sake of clarity, although a summary uncorrected total for the whole nine month period is provided for each condition in the table below. A more detailed breakdown will be provided annually.

Table Cases reported to BPSU in reporting months‡ June 1986 - February 1987

Condition	Total reports† Jun 1986-Feb 87	Confirmed cases† Jun-Aug 1986	Sept-Nov 1986	Dec 1986-Feb 87
AIDS in childhood	29	7*	3	1
Neonatal herpes	17	6*	2	-
Reye's syndrome	43	10	5	2
Kawasaki disease	98	30	31	20
Haemolytic uraemic syndrome	39	17	10	2
Haemorrhagic shock encephalopathy syndrome	13	2	2	7
Subacute sclerosing panencephalitis	25	8*	11	1
X-linked anhydrotic ectodermal dysplasia	13	2*	N/A	N/A
Diabetes	20	N/A	20	N/A
Lowe's syndrome	11	N/A	N/A	5

‡ reporting month is one month behind mailing month
* figures include cases "ever seen" or "seen in past year"
† see text

The overall return rates of cards mailed in January, February and March were: 86% (685/793), 88% (706/799), 82% (650/797), 90, 90, and 76 days after the mailings respectively. (A mailing is considered 'completed' 90 days after the posting date).

Replies were eventually received from all 69 paediatricians in the survey of initial non-respondents (CDR 86/46) (those who did not return any of the first three months' cards). Only 2 of them expressed dissatisfaction; 31 others were also removed from the mailing, mainly for administrative reasons. The remainder are now reporting.

Regional response rate to BPSU mailings: December 1986 - February 1987 (Percentage of cards returned)

A cohort of 34 "secondary" non-respondents (those who returned cards in months 1-3 but not subsequently) has recently been identified and a second survey is currently under way to determine possible reasons for their non-response.

A geographical breakdown of response rate averaged over months 6-8 (the most recent "completed" mailings) is shown in the figure. It ranged from 71% in the Republic of Ireland to 94% in East Anglia and South-West Thames. Three further conditions have been provisionally accepted for inclusion: near-miss drowning, galactosaemia (both national surveys) and meningococcal disease (regional survey). Study plans are still being finalised by the investigators but it is anticipated that these conditions will be added to the report card later in the year.

Paediatric AIDS is one of the most important conditions (in public health terms) which is ascertained by the BPSU scheme and a description of cases reported to date, by the CDSC investigator responsible for paediatric AIDS surveillance, follows.

AIDS

Twenty-nine reports were received in the first 9 months of the programme. Three were reporting errors and 2 were duplicated. Of the remaining 24, 14 have been confirmed as HIV infections: 11 with AIDS, 2 with AIDS related complex (ARC) and 1 who is currently asymptomatic; 10 cases are currently under investigation.

Of the 14 reported cases of HIV infection, 10 (6 male, 4 female) were infected vertically by their mothers, and 4 (3 male, 1 female) by transfusion of blood or Factor VIII. In only 5 cases was the infection acquired in the British Isles.

Cases acquired by feto-maternal transmission: of the 10 infants infected vertically, gestational age was known in 8, and all were born at term. In 6 the birth weights were also available, ranging from 3000-4500gms, with a mean 3377gms.

Three mothers had been infected by transfusions of contaminated blood: 1 in Germany, 1 in the UK, before the onset of routine donor screening in October 1985, and 1 in Africa. This last mother has had 2 children who have both developed AIDS, so that a total of only 9 mothers is involved.

Four mothers acquired infection heterosexually. One, a UK resident, was the wife of a haemophiliac; 2 others were from Africa where heterosexual transmission is believed to occur commonly, and 1 was from the United Arab Emirates.

Two mothers were intravenous drug abusers (IVDAs), 1 resident in Ireland, the other in London.

Cases acquired by direct transmission: four infants acquired infection postnatally. Two were born prematurely at 26 and 29 weeks gestation respectively, and both received transfusions of infected blood in the US. The other 2 were haemophiliacs resident in the UK infected by the use of non heat-treated Factor VIII.

Incubation and survival: of the 10 who acquired infection in utero, the time from birth to the onset of symptoms was known in 9 and varied from 3 to 30 months (mean 14 months). A further child was still asymptomatic at 1 year of age. Of the 3 infants known to have died in this group, survival times were 13, 34 and 96 months. One infant was lost to follow-up after survival of 40 months. The remaining 6 have so far survived for a mean of 40 months since birth, with a range of 12 to 96 months.

Of the 4 who were infected directly, 2 received transfusions in the neonatal period. One developed symptoms at 11 months of age and died at 20 months; the other developed symptoms at 9 months, but has been lost to follow-up. The time of infection in the 2 haemophiliacs who were aged 8 and 10 years at reporting is unknown; the older child developed symptoms and died 17 months after his first positive antibody test; the younger child has developed symptoms 21 months after his first positive antibody test.

Clinical features: clinical abnormalities in the 13 children reported who were symptomatic included: persistent generalised lymphadenopathy (11), repeated and prolonged episodes of infection (7), infection with opportunistic organisms (7), interstitial pneumonitis (5), protracted diarrhoea and failure to thrive (5), periods of prolonged fever at some stage during their clinical course (4), and generalised dermatitis (3). Four developed neurological symptoms, 3 showing regression of milestones after an initial period of normal development and one had spastic paresis.

Conclusion

Although numbers are still small, surveillance of paediatric AIDS will provide an important marker of heterosexual spread of HIV as well as useful information about the natural history of the infection in children.

Appendix C

BRITISH PAEDIATRIC SURVEILLANCE UNIT

Fourth Summary Report

This report updates those of the first 9 months of operation (CDRs 86/46, 87/07 and 87/32) and presents a summary of the results of the whole of the Unit's first year of mailings (July 1986-June 1987).

Cases reported, response rates and comment

It was encouraging that, overall, 81% of cases for whom information on follow-up was available were valid, and all investigators have expressed satisfaction with case ascertainment. The total number of reports received for each condition, and the outcome of follow-up by the investigators (table 1) shows a small excess of cases of AIDS in childhood compared to the number shown in the AIDS surveillance report (CDR 87/44) for about the same time period. The difference is accounted for first, by paediatric cases "concealed" within the haemophiliac and blood recipient categories in the AIDS surveillance table; second, by cases reported from the Republic of Ireland to BPSU and third, by those who satisfy the case definition for reporting to BPSU, which is somewhat broader than that used in the national AIDS surveillance scheme.

Table 1 BPSU: reports received in the first year of operation

Condition	Total reports July 1986-June 1987	Number valid (%) Yes*	Not†	Not known+
AIDS in childhood×	37	21 (56.8)	14 (37.8)	2 (5.4)
Neonatal herpes×	21	9 (42.9)	9 (42.9)	3 (14.3)
Reye syndrome	49	20 (40.8)	20 (40.8)	9 (18.4)
Kawasaki disease	120	100 (81.3)	10 (8.1)	13 (10.6)
Haemolytic uraemic syndrome	51	39 (76.5)	1 (2.0)	11 (21.6)
Haemorrhagic shock encephalopathy syndrome	17	12 (70.6)	2 (11.8)	3 (17.6)
Subacute sclerosing panencephalitis×	33	25 (75.8)	4 (12.1)	4 (12.1)
x-linked anhydrotic ectodermal dysplasia×#	13	2 (15.4)	-	11 (84.6)
Insulin-dependent diabetes# (S Western region only)	20	20 (100.0)	-	-
Lowe syndrome	15	5 (33.3)	1 (6.7)	9 (60.0)
All	376	253 (66.8)	61 (16.1)	63 (17.2)

* meets case criteria
† reporting error, duplicate, revised diagnosis
+ still being followed-up (at 1/11/87)
× figures include cases ever seen (AIDS) or seen in past year (others) as well as new cases in past month
\# 3-month surveys

The overall return rates, 90 days later, of cards mailed in April, May and June 1987 were 697/794 (88%), 693/790 (88%) and 722/814 (89%). The mean monthly response rate for the 7-month period December 1986 to June 1987 was 88%, with regional variations ranging from relatively low levels of 73, 80 and 81% (Republic of Ireland, West Midlands and Mersey respectively) to encouragingly high levels of 94, 95 and 96% (SW Thames, East Anglia and Yorkshire respectively). A table of regional reponse rates was included in the October mailing with the aim of further stimulating reporting. Investigators are also kept informed of regional variability in response.

Persistent non-respondents (those who do not return cards for 3 consecutive mailings) are identified regularly and reasons sought. The numbers in each "cohort" of non-respondents in the first year declined from 69 to 34 to 8 and the commonest reasons were administrative ones such as retirement, change of address and sick leave.

Five other conditions have been definitely or provisionally accepted for inclusion in the 1988 mailings: galactosaemia, diabetes, haemorrhagic disease of the newborn, near-miss drowning and neonatal tumours. In addition, a "one-off" survey of acute rheumatic fever in 1987 will be conducted through the first 1988 mailing, and this will be repeated in 1989 to ascertain cases occurring in 1988.

A few respondents have expressed concern about the workload engendered by the BPSU. It seems unlikely that completion of the monthly card would be very time-consuming. The greatest time commitment would be expended by paediatricians who report cases and from whom investigators then request further information.

Table 2 illustrates an analysis of workload as measured by number of cases (all conditions) reported by each respondent for the period July 1986 to September 1987. Approximately two-thirds of respondents reported no cases so their BPSU time commitment was restricted to completing the monthly card. Two-thirds of those who did report notified only one case. The highest number, 8, was reported by only one paediatrician. These figures suggest that the majority of respondents are not being excessively burdened by the BPSU. The Unit recognizes, however, that it is essential that

Table 2 BPSU : respondents' workload July 1986 - September 1987

Cases reported*	Number of respondents (%)
-	567 (64.1)
1	207 (23.4)
2	69 (7.8)
3	30 (3.4)
4	9 (1.0)
5	2 (0.2)
8	1 (0.1)

* of any of the reportable conditions

the total number of reportable conditions must not become excessive (the present card allows for a maximum of 12) and that follow-up is kept as simple as possible, because paediatricians also report to other national surveys and the goodwill engendered must not be abused.

The first year of the BPSU has been a success as judged by response rates, investigators' satisfaction and requests for new studies to be included. Paediatricians are warmly thanked for their co-operation. A brief review of the contribution of the BPSU to the surveillance of SSPE follows.

British Paediatric Surveillance Unit.

SUBACUTE SCLEROSING PANENCEPHALITIS (SSPE)

Introduction

A Register of cases of SSPE in England and Wales was set up in 1970 to provide base-line information on the incidence of the disease before it could be affected by the introduction of measles vaccination. The Register relies on information from the following sources:

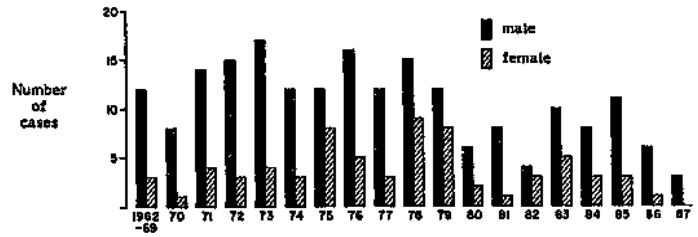
1. laboratory reports to the Communicable Disease Surveillance Centre;
2. voluntary notification of cases by paediatricians and neurologists;
3. from 1980-85, an annual enquiry to the same, giving update information on incidence;
4. death certificates;
5. from 1986, reports from the BPSU.

The first 4 sources are complementary but incomplete.

Results

Cases reported to the Register are shown in the figure according to sex and year of onset. The total number in England and Wales from 1962 to November 1987 is 270: 201 males and 69 females, a ratio of nearly 3 to one.

Year of onset and sex of SSPE cases : England and Wales 1962-87



Since July 1986, 45 cases of SSPE have been reported to the Register through the BPSU. These include 23 cases in England and Wales, of which 4 had not been notified from any other source. These have now been followed-up through the consultant. In addition, one case was reported to the BPSU in error, another had a doubtful diagnosis and a further 3 remain to be followed-up. Seventeen cases were reported from Scotland, N. Ireland and Republic of Ireland and were not followed-up.

Comment

Although the "yield" of 4 otherwise unreported cases may seem small, it is valuable for 2 reasons. Firstly, since the incidence of SSPE appears at last to be falling, it is essential that the Register should be notified of every case. Secondly, it was reassuring that such a high proportion of cases had already been reported. The epidemiological data on the 270 cases are now being analysed. Preliminary results show that since 1980 the average age of onset has increased from 10 years for both sexes to nearly 12 years for males and over 14 years in females. There has been no corresponding increase in the age of measles in cases diagnosed since 1980.

Dr Christine Miller, CDSC.

Appendix D

TABLE 1 (p7) and TABLE 2 (p8) updated to 31st March 1988

TABLE 1 - CASES REPORTED - UPDATED -
by quarter - for the 15 months June 1986 to August 1987

	1st Qtr Jun-Aug		2nd Qtr Sep-Nov		3rd Qtr Dec-Feb		4th Qtr Mar-May		5th Qtr Jun-Aug		TOTAL	
CONDITION	A	B	A	B	A	B	A	B	A	B	A	B
a) AIDS	14*	7	9	6	6	3	8	5	7	1	44	22
b) Herpes	7*	6	8	2	2	0	4	2	9	5	30	15
c) Reye's	15	10	16	5	12	3	6	3	7	5	56	26
d) Kawasaki	33	30	36	31	29	22	25	23	28	21	151	127
e) HUS	20	18	13	11	6	5	12	9	23	15	74	58
f) HSES	2	2	2	2	9	7	4	3	3	0	20	14
g) SSPE	9*	8	14	11	2	2	8	7	9	7	42	35
h) XLAED	13	2	-	-	-	-	-	-	-	-	13	2
i) Diabetes+	-	-	20	20	-	-	-	-	-	-	20	20
j) Lowe	-	-	-	-	11	6	4	2	0	0	15	8
ALL	113	83	118	88	77	48	71	54	86	54	465	327

A: All reports received
B: Cases confirmed at 31/3/88
* First quarter includes all cases known or seen in last 12 months
\+ Pilot survey in South Western Region only

TABLE 2 - OUTCOME OF FOLLOW-UP - UPDATED -
of cases reported in the 15 months June 1986 to August 1987

CONDITION	VALID Ia	VALID Ib	INVALID IIa	INVALID IIb	N/K III	TOTAL	PERCENTAGE IN EACH OF: I	II	III
a) AIDS	22	0	8	8	6	44	50.0%	36.4%	13.6%
b) Herpes	15	0	2	10	3	30	50.0%	40.0%	10.0%
c) Reye's	24	2	6	17	7	56	46.4%	41.1%	12.5%
d) Kawasaki	125	2	14	8	2	151	84.1%	14.6%	1.3%
e) HUS	34	24	0	5	11	74	78.4%	6.8%	14.9%
f) HSES	11	3	1	3	2	20	70.0%	20.0%	10.0%
g) SSPE	25	10	6	1	0	42	83.3%	16.7%	0.0%
h) XLAED	0	2	0	0	11	13	15.4%	0.0%	84.6%
i) Diabetes+	20	0	0	0	0	20	100.0%	0.0%	0.0%
j) Lowe	7	1	1	0	5	15	53.3%	13.3%	33.3%
ALL	283	44	39	52	47	465	70.3%	19.6%	10.1%

Ia: Case followed up and confirmed by research worker
Ib: Confirmed - already known to research worker from another source
IIa: Duplicate report within the BPSU scheme
IIb: Reporting error or revised diagnosis
III: Not yet known

\+ Pilot survey in South Western Region only