



Royal College of Paediatrics and Child Health

The British Paediatric Surveillance Unit (BPSU) is part of the Research Division of the Royal College of Paediatrics and Child Health

Contact

Richard Lynn MSc
Scientific Coordinator

Tel: 020 7307 5680
Fax: 020 7307 5690
Email: bpsu@rcpch.ac.uk
Website: <http://bpsu.rcpch.ac.uk>

Inside this issue

BPSU's 15th Birthday
H e c a m e b e

Study Reports

Congenital \rightarrow bella & MMR
ne
Th \rightarrow mb i in childh d
Ce \rightarrow eb \rightarrow al a c la \rightarrow di ea e/
 \rightarrow ke & like illne

Studies to End

Re e' nd \rightarrow me and SSPE

Analysis

Regi nal and S d able

BPSU Celebrates 15th Birthday

It is hard to believe but this June sees the 15th anniversary of surveillance through the British Paediatric Surveillance Unit (BPSU). Much has changed since those early days, however, the dedication of paediatricians and their willing contribution continues. For those new and not so new to the system we recall those halcyon days when the Unit was being established.

The BPSU developed from the collaboration between the then British Paediatric Association (BPA) and the Public Health Laboratory Service (PHLS) to improve the surveillance of infectious diseases and associated conditions that could not be monitored through existing data collection systems. Surveillance began in 1981 with Reye's syndrome and later extended to cover Haemolytic Uraemic Syndrome (HUS) and Kawasaki Disease. This was initially voluntary passive reporting by BPA members. However, it was felt that active surveillance using a monthly mailing card, as developed by the National Encephalopathy Survey in the early 1980s, would substantially improve ascertainment. In response to this the BPSU was set up in July 1985 following consultation between the BPA, PHLS, the Institute of Child Health (London), the RCP Ireland and the Communicable Disease Surveillance Centre (Scotland).

In order to monitor the system and consider research applications, an Executive Committee was set up and chaired by Sir Peter Tizard. Still in existence and currently chaired by Dr Chris Verity, the Committee includes representatives from each of the parent bodies plus general and specialist paediatricians. A yearly meeting of what was then known as the Joint Committee of Management chaired by Sir Cyril Clarke, oversaw in the early days the activities and development of the Unit. The Unit (as is the case today) was sited at the BPA offices and the administrator, Myer Glickman, undertook its day to day work with the support of the medical co-ordinator Dr Susan Hall. Funding in those early days was through an anonymous trust and then for a period of seven years by the Children Nationwide Medical Research Trust. The Department of Health currently contributes significant funds to the Unit.

Surveillance commenced in June 1986. The first card contained eight studies including HIV/AIDS, Reye's syndrome, SSPE, Lowe Syndrome, neonatal herpes and HUS. The card was sent out monthly to 800 consultants and from very early on it became apparent that we had a success on our hands. Card returns rates increased rapidly from 70% to over 85% within two years and rose to 95% by 1994. The card is currently circulated to over 2000 clinicians and the return rate stands at 92%.

Professor David Baum took over as chair in 1988 and under his guidance the Unit flourished. Committee members have changed but through representation of the parent bodies the sense of continuity remains strong. Due to an increase in workload, Dr Angus Nicoll came on board in 1993 as an additional medical adviser and Richard Lynn, the Scientific Co-ordinator, took on the day to day running of the Unit. During this period the Unit took on a range of new studies such as galactosaemia, Munchausen by Proxy syndrome and diabetes in under fives. In 1994 the Unit had to come to terms with losing its driving force, Dr Susan Hall. All attempts since to lure her back from her farm outside Sheffield have failed. Sue was replaced by Dr Ruth Gilbert, whose eye for detail probably still sends shivers down the spines of past would-be applicants. Ruth left in 1997 and was replaced by Dr Margaret Guy. Currently, Dr Jugnoo Rahi and our latest recruit Dr Hilary Kirkbride are the BPSU medical advisers.

The 1990s saw tremendous developments under the chair of firstly Professor Euan Ross, then Professor Catherine Peckham followed by Chris Verity. The Quarterly Bulletin was introduced in 1991 and now has a circulation of over 5,000. The Annual Report expanded and with the development in 1999 of the Unit's web site the profile and reputation of the Unit has continued to rise.

continued on back page:

Study news

Thrombosis in Childhood (Age >1 Month – 16 Years): Thrombotic events in childhood are rare but the true incidence in the UK is unknown. Current management decisions for children with thrombosis are directly extrapolated from treatment recommendations for adults, with no further validation. Although rare, thrombotic events in children are common enough to present management dilemmas that require therapeutic intervention. Collection of epidemiological data may allow the evaluation of the role of acquired and inherited thrombophilia, validation of adult approaches, or the design of controlled clinical trials appropriate to paediatric practice.

The first national prospective epidemiological study of childhood thrombosis in the UK began collecting cases in February 2001 by reporting to the BPSU via the monthly report card or alternately via the British Society of Haematology on a specific report form.

The criteria for entry is any child aged between one month (or 44 weeks post conceptional age) and 16 years newly diagnosed with an objectively documented venous or arterial thrombosis. Exclusions are children with stroke, whether this is arterial or due to sino-venous thrombosis. Reporting to date has been good with 40 cases reported, averaging 13 cases per month. Of the first 40 mailing data collection forms sent to the reporting clinicians, 21 have been returned completed. Six of these were considered ineligible for the study, primarily because the reported event predated the start of the study. Reported cases that would more appropriately fit the case definition of the Childhood Stroke Study have been appropriately referred.

For further information contact Dr B Gibson, Department of Haematology, RHSC, Yorkhill, Glasgow G3 8SJ, tel: 0141 201 0391, email: brenda.gibson@yorkhill.nhs.uk.

Cerebral vascular disease, stroke and like illness: The investigators report: *“We are now into the fourth month of data collection in this 13 month descriptive epidemiological study. Its aims are to define the epidemiology and to investigate the management of childhood cerebrovascular disease within the United Kingdom and Eire as well as to examine recurrence and outcome.*

As well as using the BPSU system, we are also undertaking parallel surveillance of paediatric haematologists, radiologists, neurosurgeons and cardiologists. Approximately 10 months after the study period has ended, mortality data from the National Office of Statistics will be available, identifying those children who died before they could be notified to the ongoing surveillance systems.

The study is progressing well. We encourage any notification of possible cases as duplication is far better than omission. To date (for the first 3 months) we have had 92 notifications of new childhood strokes identified using the BPSU, of which 26 have so far been confirmed. The parallel surveillance mechanisms have identified a further possible 16 cases with 2 definite confirmations. To date, there has been a single identified death.

Although the study is still at a very early stage, we anticipate that the total number of children will be of the order of 250 – 350 for the study period. It is intended to contact referring medical practitioners at 6 and 12 months, to see how the child has fared and in particular to look at the recurrence rate. This is particularly important, as the first randomised controlled trial of recurrence prevention in childhood stroke is at the planning stage. It is hoped that the UK will play a significant role in the design and conduct of this trial. We are extremely grateful for the Stroke Association in generously supporting this study.”

For further information: Dr A N Williams, Institute of Child Health, Birmingham Children's Hospital, Steelhouse Lane, Birmingham B4 6NH, tel: 0121 333 8704, email: anw@doctors.org.uk.

Study extension - congenital rubella: Although relatively few congenital rubella births have been reported in the UK in recent years, there has been a small upturn in recent months. Rubella infection continues to circulate in many parts of the world, despite the widespread use of MMR vaccine. Several European countries still have low MMR uptake rates, resulting in periodic rubella epidemics. Here in the UK, MMR vaccine uptake fell between 1995 and 1998 following adverse publicity about unproven associations between MMR and bowel disease and autism.

Table 1: Completed MMR coverage by 24 months, Oct-Dec quarters 1995–2000

	1995	1996	1997	1998	1999	2000
England	91.1	91.2	90.2	88.0	87.3	87.4
Wales	91.4	90.1	89.6	85.2	84.7	89.0
Scotland	93.9	93.9	93.8	92.0	92.3	91.6
N Ireland	93.9	92.8	91.7	89.5	91.8	92.5
District/HB range	77.2-100	74.4-98.0	72.6-96.5	65.1-95.8	63.6-100	69.9-97.8
UK	91.4	91.4	90.5	88.2	87.8	88.0

COVER/Korner data from the PHLS, published in CDR 1996-2001

Although national MMR coverage at 24 months has now stabilised at about 88% (Table 1 opposite), some districts were reporting uptake of only 70% at the end of 2000. Uptake of the pre-school booster has always been at lower levels, and only 75% of 5 year olds had received both MMR1 and MMR2 by the end of 2000. This level is probably not sufficient for the long-term maintenance of a herd immunity level of 85-88%, which is required to prevent transmission of wild rubella infection, particularly since very few children now acquire natural infection. Continued surveillance of congenital rubella is therefore vital.

National surveillance (Scotland, Wales and England) of congenital rubella started in 1971 with passive reporting by audiologists, paediatricians and microbiologists. With the success of the rubella vaccination programme, the number of cases declined dramatically from an average of 50 births and 740 terminations a year in 1971-75 to an average of 23 births and 50 terminations a year in 1986-90. Since there were so few cases, active surveillance was required and congenital rubella first appeared on the BPSU's orange card in January 1990. BPSU reports from Ireland are also followed up, but not normally included in the published figures.

Table 2: Congenital Rubella births 1990-2001

First reported through:			
Year of birth	BPSU	other source~	Total
1990	8	4	12
1991	2	1	3
1992	5	2	7*
1993	2	1	3
1994	5	2	7
1995	1	0	1
1996	9	3	12
1997	0	0	0
1998	0	0	0
1999	0	1	1
2000	3	1	4
2001	1	1	2

Recent notifications (Table 2): Six infants with congenital rubella have already been reported for 2000/2001. Five of these six cases were imported, with women acquiring infection early in pregnancy in their countries of origin (Bangladesh, Pakistan, Sri Lanka, Nigeria and Zambia). In 1999 a major rubella epidemic in Greece led to isolated outbreaks of infection in the UK, and the only reported case that year, an infant born in December 1999 in Scotland, appeared to be connected to one of these outbreaks. There were no congenital rubella births reported in 1997 and 1998. The 12 infants reported in 1996 included eight whose mothers were born and brought up in the UK, all of whom had been eligible for schoolgirl vaccination. These births followed a resurgence of rubella infection in the UK, mainly affecting young men.

~ includes notifications first made known to the NCRSP via the laboratory reporting systems

* includes a set of triplets

In recent years most reported cases of congenital rubella were identified close to the time of birth because of abnormal signs in the infant. The BPSU's orange card has proved to be a rapid and effective reporting system for congenital rubella as it was particularly quick to identify the increase in cases in 1996 when all but two of the BPSU reports were made within two months of the infant's birth. Although prospectively recognised maternal infections in pregnancy are reported through the PHLS, the majority of maternal infections which result in live births of congenitally infected infants are not recognised antenatally but only retrospectively diagnosed. Few children with isolated hearing loss due to congenital infection are now reported; any such children would probably remain undiagnosed as they have vaccine induced antibodies following MMR at 13 months. As long as this underreporting is acknowledged, trends can still be monitored.

About a quarter of the infants reported in the last decade were born to women whose infection was acquired abroad, while about half were born to women who, although they acquired infection in the UK, had only arrived in the country relatively recently. While rubella infection is currently rare in the UK, women who travel abroad during early pregnancy may come into contact with infection. Unpublished data from the North Thames region suggests that rubella susceptibility in pregnant women continues to show considerable variation by ethnic group. Women who have recently come from countries with less successful or disrupted vaccination programmes are likely to be at higher risk if there is renewed circulation of rubella.

In recognition of the importance of this study the BPSU Executive have agreed to continue this project for a further year.

For further information contact Dr P Tookey, Department of Epidemiology and Biostatistics, Institute of Child Health, 30 Guilford Street, London WC1N 1EH, tel: 0207 242 9789, email: p.tookey@ich.ucl.ac.uk.

Studies to end: This May after 19 years of surveillance, 16 through the BPSU, the survey on Reye's syndrome ended. Dr Sue Hall reports that "it is, however, essential that aspirin-associated, classic RS continues to be monitored as a potential public health problem, especially in the setting of an influenza epidemic. Please report all such cases to the Committee on Safety of Medicines via the "yellow card" adverse drug reaction surveillance system." July will also see the removal of SSPE from the orange card, in part because cases should be identified through laboratory diagnostic investigations and through the PIND survey for which SSPE fits the case definition. On behalf of all involved in these studies can I thank you for all your support over the years.

BPSU 15th Birthday cont:

Success for the Unit should be measured in its achievements for child health. Over 50 studies have been undertaken. Through its surveys it has monitored the fall in Reye's syndrome; changed law in respect of toy packaging; assessed the effectiveness of newly introduced vaccines and reviewed management of vitamin k prophylaxis, biliary atresia and water births. In relation to HIV/AIDS, congenital syphilis, congenital dislocation of the hip, toxoplasmosis the Unit has contributed to the debate on screening needs. Over 150 papers have been published whilst, many presentations have been given in the UK and abroad, and the BPSU has in recent years held three scientific seminars. Such is the success of the Unit that as early as 1992 other countries were developing Units based on the BPSU methodology. With encouragement from the BPSU 11 international surveillance units now exist and has led to the formation of the International Network of Paediatric Surveillance Units (INOPSU). Their first INOPSU conference was held in Canada last year and the second is to be held in the UK in 2002. Within the UK several other specialities have set up surveillance units, these include the ophthalmologists, neurologists and gastroenterologists.

All this could only be achieved by those past and present that contributed to the development of the Unit and most importantly to the paediatrician who have returned cards and contributed data.

As Sir Cyril Clarke stated in the 1991 annual report "*British and Irish paediatricians can feel justly proud of themselves as pioneers and key enactors of this unique reporting system*".

Monthly Analysis

As you will see from Table 3, the monthly card returns are again above 90%. Reminders are now sent out monthly to those who appear not to have returned cards for the preceding couple of months as much to check the postal system as to identify under reporting. London regions, apart from SWT, remain a worry, as they continue to have the weakest return rates. However once a case is reported the questionnaire return rate for all remains excellent, most projects by their completion have received over 95% of the questionnaires.

**Table 3: % Response rate
Dec 2000 - May 2001**

Region	% ret'd	Rank (June-Nov 2000)
North	91.9	10(4)
York	88.3	17(16)
Ten	95.2	3(7)
EAngl	91.8	14(14)
NWT	83.0	20(19)
NET	86.4	19(20)
SET	87.3	18(17)
SWT	92.4	9(11)
Wes	90.0	15(10)
Ofd	92.7	8(6)
SWe	89.5	16(15)
WMid	94.0	6(8)
Me	94.0	6(5)
NWe	91.2	12(13)
Welsh	94.6	5(1)
NSc	96.1	1(2)
SSc	95.2	3(9)
WSc	91.2	12(12)
NI	95.8	2(3)
RI	91.2	12(18)
Total	90.9	-

Table 4: All cases reported and follow-ups to 08/05/2001

Condition	Started						as % of total		
		I VALID	II INVALID		Not Yet Known	Ttl	I	II	III
		<i>I</i>	<i>Ila</i>	<i>Ilb</i>	<i>III</i>	<i>Ttl</i>	<i>I</i>	<i>II</i>	<i>III</i>
HIV/AIDS	1986	1370	275	327	112	2084	66	29	5
CR	1990	65	24	32	3	124	53	45	2
Reye's	1986	154	49	113	12	328	47	49	4
SSPE	1986	104	42	35	34	215	48	36	16
PIND	1997	679	118	264	51	1112	61	34	5
Enceph	1998	126	27	123	70	346	36	43	20
GBS	2000	310	59	64	57	490	63	25	12
CVD/S	2001	16	0	12	53	81	20	15	65
VKDB	2001	0	0	0	5	5	0	0	100
Thrombosis	2001	7	0	0	24	31	23	0	77
CMV	2001	2	1	4	22	29	7	17	76
IAI	2001	0	0	0	0	6	0	0	100
Total*		3281	825	1015	468	5589	59	33	8

* All data is provisional & continually being updated

Key to table/abbreviations

I	Confirmed/already known	AIDS/HIV	Acquired Immunodeficiency Syndrome
Ila	Duplicate		/Human Immunodeficiency Virus
Ilb	Reporting error or revised diagnosis	CR	Congenital Rubella
III	Status not yet reported to BPSU by investigator	Reye	Reye's Syndrome
		SSPE	Subacute sclerosing panencephalitis
		PIND	Progressive Intellectual
		Enceph	Encephalitis in children (2-36months)
		GBS	Group B streptococcus disease
		CVD/S	Cerebrovascular disease/stroke & like illness
		VKDB	Vitamin k deficiency bleeding
		CMV	Congenital cytomegalovirus
		IAI	Internal abdominal injuries