NEW SOUTH WALES
Public Health Bulletin

Volume 7
Number 7
July, 1996

NSW HEALTH DEPARTMENT

ISSN 1034 7674
State Health Publication No. (PH) 96-0123

NSW BIRTH DEFECTS REGISTER 1994 REPORT

Lee Taylor, Susan Travis and Clare Banks
Epidemiology and Surveillance Branch
NSW Health Department

About 2,000 infants are born with birth defects each year in NSW. The fourth annual report of the NSW Birth Defects Register presents information reported on birth defects which were detected during pregnancy or at birth, or up to one year of age for the years 1990-93 and during pregnancy or at birth for 1994.

The reported number of liveborn and stillborn infants with birth defects rose from 1,659 in 1990 and 1,632 in 1991 to 2,142 in both 1992 and 1993. In 1994, 1,127 infants were reported as having a birth defect, but this figure includes only those infants whose malformation was detected during pregnancy or at birth. The improved reporting in 1992 followed the introduction of a notification system for individual health care providers in that year, and improved reporting from cytogenetic laboratories and paediatric referral hospitals.

Among liveborn and stillborn infants, malformations of the cardiovascular system were most commonly reported (Table 1). More than half of these comprised atrial and ventricular septal defects and heart valve defects. Defects of the musculoskeletal system were the second most commonly reported group. About one-quarter of these were congenital dislocation of the hips. The third most commonly reported group was defects of the genitourinary system, one-third of which were hypospadias. Compared with previous years, there was an increase in the number of ventricular and atrial septal defects and heart valve defects reported in 1993 and 1994. This is probably due to improved diagnosis and reporting of less severe defects detected some time after birth.

In 1994, 136 terminations of pregnancy were reported after diagnosis of a malformation, compared with 140 for 1993 and 254 for 1990-92. More than half the reported terminations were associated with chromosomal defects, most commonly Down syndrome, and almost one-third with neural tube defects (Table 2).

From 1993 to 1994 there was a slight increase in the reported number of terminations of pregnancy and a slight decrease in the number of stillbirths associated with neural tube defects, which may indicate an early trend towards increasing prenatal diagnosis of these conditions.

Birth defects were slightly more common among male than female infants. The rate of birth defects was lowest in the 25-29 year maternal age group and increased with increasing maternal age, with almost one in 20 infants born to mothers over 35 years of age reported as having a malformation (Figure 1).

Continued on page 68 ▶

Contents

Articles

67 *NSW Birth Defects Register 1994 Report*

70 *Rubella outbreak in Western Sydney, spring 1995: implications for rubella surveillance and control*

72 **News and Comment**

73 *Registration and Call for Abstracts, 3rd NSW Public Health Network Conference*

77 **Public Health Abstracts**

79 **Infectious Diseases**

Correspondence

Please address all correspondence and potential contributions to:

The Editor,
NSW Public Health Bulletin,
Public Health Division,
NSW Health Department
Locked Bag No 961,
North Sydney NSW 2059
Telephone: (02) 9391 9191
Facsimile: (02) 9391 9029

Birth Defects Register 1994 Report

► *Continued from page 67*

TABLE 1

BIRTH DEFECTS AMONG STILLBIRTHS AND LIVEBIRTHS BY DIAGNOSTIC CATEGORY, 1990-94

Diagnostic category	No. defects	Rate per 1,000 births
DEFECTS OF NERVOUS SYSTEM	914	2.1
Anencephaly	75	0.2
Spina bifida	217	0.5
Encephalocele	41	0.1
Microcephaly	116	0.3
Congenital hydrocephalus	212	0.5
Other nervous system defects	253	0.6
DEFECTS OF EYE	323	0.7
Anophthalmos/microphthalmos	66	0.2
Buphthalmos/congenital glaucoma	29	0.1
Congenital cataract	69	0.2
Other eye defects	159	0.4
DEFECTS OF EAR, FACE AND NECK	216	0.5
Absence/stricture of auditory canal	36	0.1
Absence of auricle	9	0.0
Defects of face and neck	37	0.1
Other ear defects	134	0.3
DEFECTS OF CARDIOVASCULAR SYSTEM	4,440	10.2
Transposition of great vessels	169	0.4
Tetralogy of Fallot	127	0.3
Ventricular septal defect	933	2.1
Atrial septal defect	817	1.9
Heart valve defects	646	1.5
Patent ductus arteriosus >37 weeks	598	1.4
Coarctation of aorta	153	0.4
Other defects of aorta	94	0.2
Defects of pulmonary artery	129	0.3
Other cardiovascular defects	774	1.8
DEFECTS OF RESPIRATORY SYSTEM	270	0.6
Defects of nose	64	0.1
Defects of larynx, trachea and bronchus	83	0.2
Defects of lung	120	0.3
Other respiratory defects	3	0.0
DEFECTS OF GASTROINTESTINAL SYSTEM	1,591	3.7
Cleft palate only	348	0.8
Cleft lip only	161	0.4
Cleft palate and cleft lip	248	0.6
Oesophageal atresia only	18	0.0
Oesophageal atresia with TOF	85	0.2
Tracheo-oesophageal fistula (TOF) only	38	0.1
Atresia/stenosis of small intestine	116	0.3
Atresia/stenosis of anus	133	0.3
Other gastrointestinal defects	444	1.0
DEFECTS OF GENITOURINARY SYSTEM	2,930	6.7
Defects of female genitals	86	0.2
Undescended testis	321	0.7
Hypospadias	999	2.3
Epispadias	17	0.0
Chordee	230	0.5
Indeterminate sex/ambiguous genitalia	53	0.1
Renal agenesis/dysgenesis	146	0.3
Obstructive defects of renal pelvis and ureter	469	1.1
Other genitourinary system defects	609	1.4
DEFECTS OF MUSCULOSKELETAL SYSTEM	3,721	8.6
Congenital dislocation of the hips	873	2.0
Talipes equinovarus	185	0.4
Polydactyly	418	1.0
Syndactyly	1,187	0.4
Reduction deformities of limbs	355	0.8
Craniosynostosis	394	0.9
Diaphragmatic hernia	116	0.3
Exomphalos	67	0.2
Gastroschisis	66	0.2
Other musculoskeletal defects	1,060	2.4
DEFECTS OF THE INTEGUMENTARY SYSTEM	195	0.4
CYSTIC HYGROMA	39	0.1
CHROMOSOMAL DEFECTS	815	1.9
Trisomy 21	495	1.1
Trisomy 13	23	0.1
Trisomy 18	92	0.2
Turner syndrome	35	0.1
Other chromosomal defects	171	0.4
SITUS INVERSUS	19	0.0
CONGENITAL MALFORMATION SYNDROMES	175	0.4
CONGENITAL RUBELLA SYNDROME	3	0.0
CONGENITAL CYTOMEGALOVIRUS INFECTION	7	0.0
CONGENITAL TOXOPLASMOSIS	3	0.0
NON-IMMUNE HYDROPS FOETALIS	64	0.1
OTHER AND UNSPECIFIED BIRTH DEFECTS	178	0.4
TOTAL	15,905	36.6

Source: NSW Birth Defects Register, Epidemiology and Surveillance Branch, NSW Health Department.
Note: For 1990-93, cases reported during pregnancy and up to one year of age are included. For 1994, cases reported during pregnancy or at birth are reported.

TABLE 2

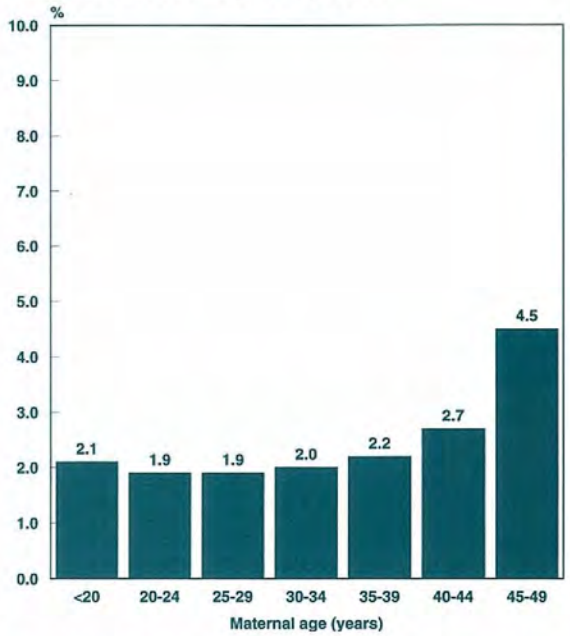
BIRTH DEFECTS AMONG TERMINATIONS OF PREGNANCY, 1990-94

Diagnostic category	No. terminations
DEFECTS OF NERVOUS SYSTEM	160
Neural tube defects	111
Other nervous system defects	39
DEFECTS OF EYE	1
DEFECTS OF EAR, FACE AND NECK	1
DEFECTS OF CARDIOVASCULAR SYSTEM	20
DEFECTS OF RESPIRATORY SYSTEM	6
DEFECTS OF GASTROINTESTINAL SYSTEM	22
DEFECTS OF GENITOURINARY SYSTEM	53
DEFECTS OF MUSCULOSKELETAL SYSTEM	120
CYSTIC HYGROMA	58
CHROMOSOMAL DEFECTS	353
Trisomy 21	144
Trisomy 13	15
Trisomy 18	53
Turner Syndrome	30
Other chromosomal defects	111
CONGENITAL MALFORMATION SYNDROMES	4
NON-IMMUNE HYDROPS FOETALIS	15
OTHER AND UNSPECIFIED BIRTH DEFECTS	16
TOTAL	829

Source: NSW Birth Defects Register, Epidemiology and Surveillance Branch, NSW Health Department.

FIGURE 1

LIVEBORN AND STILLBORN INFANTS WITH BIRTH DEFECTS BY MATERNAL AGE, 1990-94



Source: NSW Birth Defects Register, Epidemiology and Surveillance Branch, NSW Health Department.
Note: For 1990-93, cases reported during pregnancy and up to one year of age are included. For 1994, cases reported during pregnancy or at birth are reported.

THE NSW BIRTH DEFECTS REGISTER

The NSW Birth Defects Register (BDR) is a population-based surveillance system established to monitor congenital malformations detected during pregnancy or at birth, or diagnosed in infants up to one year of age. The BDR was set up in 1990 and is based in the Epidemiology and Surveillance Branch of the NSW Health Department.

Activities of the BDR include publication of an annual report on the occurrence of birth defects; provision of information to Area Health Services to assist in service planning, monitoring of child health and investigation of specific issues; provision of information in response to specific requests from the public, health professionals, and other government departments; provision of data to the AIHW National Perinatal Statistics Unit (NPSU) for monitoring of birth defects at a national level; and special studies.

The BDR is supported by an advisory committee, comprising a panel of clinical experts representing the following specialities: genetics, dysmorphology, neonatology, obstetrics and gynaecology, bioethics and epidemiology; and a community representative from the Association of Genetic Support of Australasia.

Notifications of birth defects are received from individual health care providers, the NSW Midwives Data Collection, paediatric referral hospitals and cytogenetic laboratories. Congenital malformations detected at birth are required to be notified to the NSW Midwives Data Collection under the NSW Public Health Act 1991. All other notifications are voluntary.

Annual reports and notification kits may be obtained from:

Ms Susan Travis
Manager, NSW Birth Defects Register
Epidemiology and Surveillance Branch
NSW Health Department
Locked Mail Bag 961
NSW Health Department
North Sydney NSW 2059
Tel: (02) 9351 7746
Fax: (02) 9351 7742

RUBELLA OUTBREAK IN WESTERN SYDNEY, SPRING 1995: IMPLICATIONS FOR RUBELLA SURVEILLANCE AND CONTROL

Tim Heath[a,b], Epidemiology Registrar, Master of Applied Epidemiology Program
Anthony Capon[a], Director, Western Sector Public Health Unit
Christine Roberts[b], Director, Master of Applied Epidemiology Program

a. Western Sector Public Health Unit.
b. National Centre for Epidemiology and Population Health.

In the spring of 1995 there was a Statewide rubella outbreak in NSW[1,2] which presented the opportunity to compare the characteristics of laboratory confirmed and clinically diagnosed rubella. This article reports on the comparison.

Rubella is usually a mild febrile illness of childhood, but maternal infection during early pregnancy and subsequent foetal infection can result in a range of devastating developmental malformations – including mental retardation, deafness, blindness and congenital heart disease – which are broadly referred to as Congenital Rubella Syndrome (CRS). Unfortunately, there is no effective treatment for intrauterine rubella infection, so CRS prevention depends primarily on immunisation strategies. In planning these strategies, we rely principally upon surveillance of rubella disease and immunity.

In NSW, rubella is notifiable only for diagnoses confirmed by culture or serology. School principals and child care directors are also required to report suspected cases, but these reports must be serologically confirmed to satisfy notification criteria. By contrast, the National Health and Medical Research Council (NHMRC), in addition to laboratory-based notification, recommends a clinical surveillance definition for notification by doctors, when cases are linked to other laboratory-confirmed rubella diagnoses. Serologically-based surveillance of rubella is highly specific, but it is less certain whether it accurately reflects risk groups and allows useful intervention.

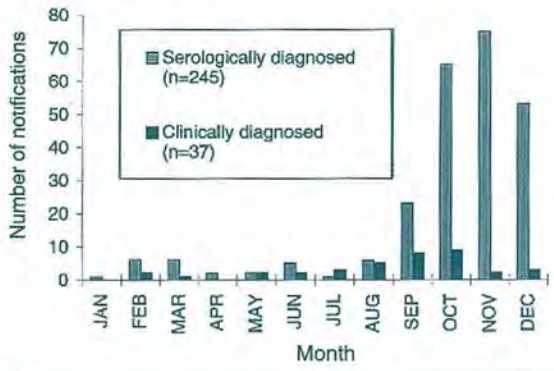
METHODS

During 1995 the Western Sector Public Health Unit (WSPHU) routinely recorded unsolicited reports of clinically diagnosed rubella. A 'clinical' case was defined as: (1) an acute febrile illness associated with a generalised maculopapular rash reported by a medical practitioner, child care director or school principal; (2) the illness had been clinically diagnosed as rubella by a medical practitioner; (3) no confirmatory serology or cultures had been performed; and (4) the illness did not meet the clinical criteria for measles notification.

The same data were collected for these clinical reports as is routinely collected for laboratory-confirmed rubella notifications, and these data – age, sex, occupation, language spoken at home, geographic distribution, and delay from onset date to notification date – were retrospectively compared. A 'serologic case' (there were no culture-positive notifications) was defined as a case with a single high titre rubella IgM, or a fourfold rise in serum IgG, in the absence of recent immunisation. All cases were resident in Western Sydney or Wentworth Health Areas. Analyses were performed using Epi Info 6[3]. The chi-square test for contingency tables was used for categorical analyses, and the Mann-Whitney U test was used for non-parametric, continuous data. Notification rates were calculated using the Australian Bureau of Statistics estimated mid-year populations for 1994.

FIGURE 2

NOTIFICATIONS OF PERSONS WITH RUBELLA, BY DATE OF NOTIFICATION AND BASIS OF DIAGNOSIS, WESTERN SYDNEY AND WENTWORTH, 1995



RESULTS

During 1995 there were 245 serologically confirmed notifications of rubella from Western Sydney and Wentworth Health Areas – a crude notification rate of 26 cases per 100,000 for both Areas combined. One hundred and eighty-five of these notifications occurred during the September-November quarter, compared to seven during the same period in 1994. There were 30 notifications among women aged 15 to 44 years – a rate of 6.4/100,000. The serologic notification rates in Wentworth and Western Sydney Areas were 17/100,000 and 30/100,000 respectively. There were 37 clinically diagnosed cases during 1995. Clinical case reports peaked earlier than serologic cases (Figure 2).

The median age of serologic cases was significantly older (19 years) than clinical cases (8 years; Mann-Whitney $p<0.001$). Serologic cases were predominantly male (77 per cent), in contrast to clinical cases of whom 54 per cent were male (χ^2 $p=0.01$). This male predominance among serologic cases was most marked between the ages of 15 and 25 years (Figure 3). However, there was no difference between the sex distribution of serologic and clinical cases after controlling for age.

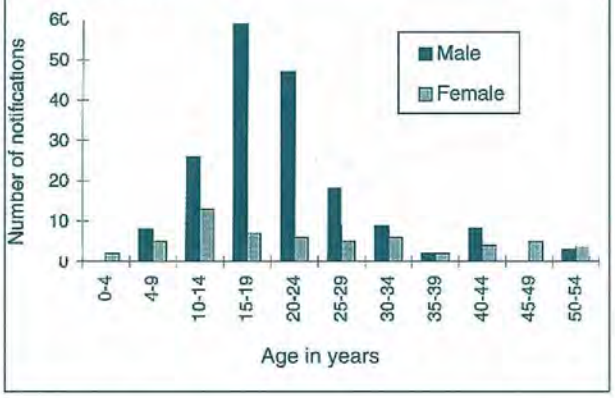
Occupation was recorded for 20 per cent (49/245) of serologic cases and all clinical cases. Fourteen per cent of serologic cases (7/49) were in child care or primary school, compared to 81 per cent (30/37) of clinical cases. Almost all serologic (44/45) and clinical cases (23/24) were from English speaking homes. The median time from illness onset to receipt of notification was significantly longer for serologic cases (19 days) than clinical cases (3 days; Mann-Whitney $p<0.001$).

DISCUSSION

Our serologically derived surveillance data suggested that this outbreak of rubella occurred essentially in young adult males. Serologic data also implied that children of both sexes aged <5 years old were protected, as might be

FIGURE 3

AGE AND SEX DISTRIBUTION OF PERSONS NOTIFIED WITH SEROLOGICALLY CONFIRMED RUBELLA IN WESTERN SYDNEY AND WENTWORTH, 1995



expected following the introduction of measles-mumps-rubella (MMR) vaccination for all infants in 1989 (Figure 3). However, clinical reports during this outbreak suggested disease activity predominantly among young children of both sexes. This discrepancy casts some doubt on the representativeness of serologic notifications, and suggests that the NSW surveillance case definition may underestimate rubella occurring in young children. Clinicians are understandably reluctant to perform blood tests on young children with mild illness, and this may contribute to under-representation of children in rubella surveillance data. Conversely, adults, who tend to have more severe symptoms, may be over-represented because of more frequent serologic testing.

The preponderance of males among serologically diagnosed rubella cases reflects the older median age of this group. Young female adults are more likely to be immune because adolescent schoolgirls received rubella vaccination during the years 1971-1994. The sex distribution of clinical cases is more equal because most (70 per cent) are under 10 years old and had not been exposed to this differential immunisation.

This study has some important limitations. Occupation and language spoken at home were poorly recorded, so it is difficult to interpret these data confidently. The number of clinically diagnosed cases was small, and many of these may not have been rubella. Numerous viral illnesses can mimic rubella, and the specificity of a clinical diagnosis of rubella can be very poor in young children[4,5]. The positive predictive value of clinical diagnosis may have been somewhat improved because of greater rubella prevalence during this outbreak, but we were unable to evaluate this formally because clinical cases were not tested serologically. The fact that the majority of clinical cases occurred during August-October, a few weeks before most serologic notifications, does support that many of these were caused by rubella.

To evaluate the appropriateness of rubella surveillance it is important to clarify its purpose. The primary objective of rubella control is to eliminate CRS[6]. This depends on two related immunisation strategies. The first is to ensure that women of childbearing age are immune. This is achieved by vaccinating adolescent females, and by post-natally vaccinating women who are non-immune during pre-natal screening. This strategy effectively reduces the incidence of CRS, but on its own does not appear to change the epidemiology of rubella among pre-adolescent women, children, and young men – who may serve as a persisting source of infection for pregnant women[4,5,7]. The second strategy is to protect pregnant women from exposure to rubella, by vaccinating all children and all adolescents[6]. The primary outcome measure for these strategies, CRS, is notifiable in NSW and is also monitored by the Australian Paediatric Surveillance Unit. This enables us to monitor progress towards the elimination of CRS, but is insensitive to the short-term and medium-term effects of immunisation strategies on the dynamics of population immunity.

What, then, is the role of surveillance for incident rubella cases? It allows long-term trend analysis of age- and sex-specific incidence of rubella. Because all rubella vaccination is now performed using the combined MMR vaccine, future rubella surveillance will also give proxy information about those at risk for measles. As a surveillance definition serodiagnosis is highly specific, but it does not provide timely (or representative) data. In this study, the median time from onset of symptoms to notification was 19 days for serologic cases. Consequently, interventions for sporadic rubella are rarely possible in response to serologic surveillance, and outbreak recognition is likely to be delayed. The current requirement for school and child care centre-based reports causes some confusion instead of hastening intervention, because these cases also require serologic confirmation to satisfy notification criteria.

It is important to resolve whether acute interventions are an essential part of our long-term rubella control strategies. For this decision, some critical questions need to be answered. Does excluding rubella cases alone have any worthwhile impact on transmission? Should both children with rubella, and (as is recommended in the USA[6]) their unvaccinated contacts be excluded from school and child care? Is rubella outbreak control using targeted vaccination campaigns cost effective, or should resources be devoted to ensuring high rates of vaccination coverage at routine milestones? If it is decided that acute interventions are important, the NHMRC surveillance definition should be adopted. This incorporates a clinical component for contacts of serologically-confirmed rubella, and would enable more timely outbreak recognition, and appropriately targeted vaccination programs. Ideally, before adopting this definition in NSW we should formally evaluate its sensitivity and specificity, using serology as the reference standard. In practice it may be difficult to enrol young infants and children into a serodiagnostic study for very mild illness.

It is worth noting that other, more sensitive, rubella surveillance methodologies are possible using intermediate outcome measures. Intermittent population-based serosurveys, and continuous surveillance of antenatal screening allow detailed analyses of the relative influences of childhood, adolescent, and postnatal immunisation

Continued on page 77 ▶

NEWS AND COMMENT

NSW CORONARY HEART DISEASE GOALS AND TARGETS PROGRAM – JULY 1996 UPDATE

The following is an update on Statewide projects funded this calendar year as part of the NSW Coronary Heart Disease Goals and Targets Program:

- A *survey* instrument for monitoring population *physical activity* (prevalence, knowledge, attitudes, practice) has been developed. A Statewide telephone survey using this instrument and the Medical Outcomes Study Short Form 12 instrument was conducted in June 1996. Results of the survey will be available later this year.
- The Department of Public Health and Community Medicine at Westmead Hospital was funded earlier this year to manage the development of a *NSW Nutrition Monitoring Strategy*. This will provide a means of evaluating the implementation of the NSW Nutrition Strategy, and guide routine surveillance in relation to food and nutrition. The project will be completed in mid-1997.
- The *NSW Cardiac Care Survey* – a retrospective survey of management of acute chest pain – is about to begin. A follow-up is planned six months after the main survey. The survey is being managed by the Centre for Biostatistics and Clinical Epidemiology at the University of Newcastle. It will involve all referral and larger district hospitals and a random sample of other hospitals.
- A joint initiative of the National Heart Foundation (NHF) (NSW Division), the Australasian College of Emergency Medicine and the NSW Health Department is the promotion of NHF-developed *acute care guidelines for AMI*. The NSW Health Department has funded workshops in NSW throughout 1996 to facilitate the implementation of these guidelines.
- Wentworth Area Health Service has been funded to pilot a method for identifying low risk patients presenting with chest pain and to monitor patient outcomes. *This Coronary Ischaemia Quality and Outcome Monitoring Project* is due for completion in June 1997.
- South West Sydney Area Health Service is managing the *NSW Cardiac Rehabilitation Policies and Standards Project* within which NSW evidence-based policies and standards for cardiac rehabilitation will be developed. The NHF Cardiac Rehabilitation (phases 1 and 2) Minimum Standards will form the basis of these. This project is due for completion in June 1997. A project to develop quality outcome measurement tools will be funded in 1996-97.
- A *survey* of NSW cardiologists, cardiac surgeons and physicians will soon be conducted *to investigate current practices and attitudes to referral to cardiac rehabilitation*. The Australian and New Zealand Cardiac Society has agreed to support this survey, which will be completed by October 1996.

Inquiries about these projects should be directed initially to NSW Health Department staff Dr Glenn Close (tel 02 9391 9214, fax 02 9391 9232) or Ms Dianne Kelleher (tel 02 9391 9266, fax 02 9391 9232).

A NSW HEALTH OUTCOMES APPROACH TO STROKE

A *NSW Stroke Expert Working Group* has been established to advise the NSW Health Department on the development of policies and strategies for system-wide and local Area implementation of an outcomes approach to stroke services and programs in NSW. Updates and developments in this program will be published in the *Bulletin*. For inquiries contact Dr Glenn Close (tel 02 9391 9214, fax 02 9391 9232) or Ms Dianne Kelleher (tel 02 9391 9266, fax 02 9391 9232).

NATIONAL PUBLIC HEALTH PARTNERSHIP

At the Australian Health Ministers' Conference in Hobart in July, the Commonwealth Minister for Health and Family Services, Dr Michael Wooldridge, outlined a proposal for a new National Public Health Partnership (NPHP).

The partnership would be formed by the major agencies with a direct responsibility for public health in Australia – the Commonwealth and State/Territory governments, the National Health and Medical Research Council and the Australian Institute of Health and Welfare. It is intended that the partnership would provide a framework for collaboration between these agencies and a national infrastructure to support public health work.

The partnership would be responsible for:

- creating a vision for public health at the national level;
- establishing principles to guide policy and practice;
- clarifying roles and responsibilities; and
- establishing national objectives, strategies and performance indicators.

It will focus on areas where it is agreed that national collaboration would be of benefit. The better coordination and integration of national public health strategies, such as immunisation, diabetes and cancer control, is an anticipated benefit. Other areas where a more co-ordinated approach could assist include the development of the public health workforce, the management of information systems and the clarification of legislative frameworks.

Endorsement of the concept of a NPHP by the Ministers of Health and discussion of the proposal by the Australian Health Ministers' Advisory Council will be followed by consultations with key stakeholders to define the structure and operation of the NPHP.

The concept of a NPHP will be considered by the Ministers for Health and discussed by the Australian Health Ministers' Advisory Council. If the concept is endorsed, key stakeholders will be consulted to define the structure and operation of the NPHP.

Registration and Call for Abstracts

3rd NSW Public Health Network Conference

December 11-12, 1996

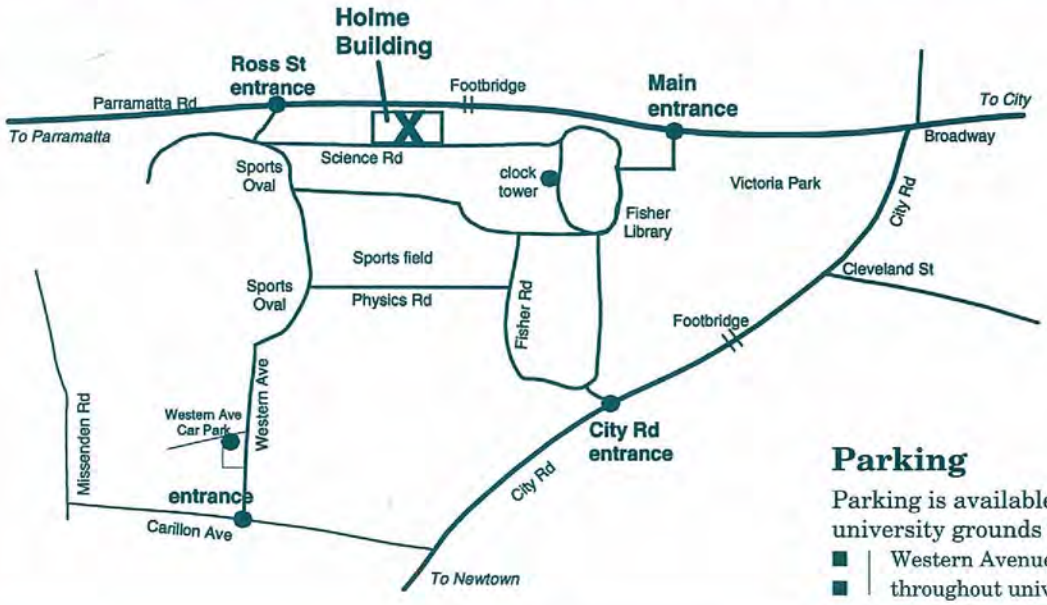
The Holme Building
University of Sydney

One Hundred Years of Public Health

Now is the time to register and submit abstracts for the 3rd NSW Public Health Network Conference. Prominent researchers and practitioners in Public Health will contribute to a lively program that will celebrate not only the centenary of the Public Health Act in NSW but also the bicentenary of vaccine development.

The conference will explore the evolution of public health practice in NSW and examine how an expanding range of disciplines (from microbiology and environmental sciences to social epidemiology and health economics) contributes to the solution of public health problems. Members of the network are invited to submit papers to support these themes as well as the full range of their work.

Map of Sydney University grounds, showing access to Holme Building



Parking

Parking is available in the university grounds for $7 a day at:

- Western Avenue car park, and
- throughout university

ONE HUNDRED YEARS OF PUBLIC HEALTH

3rd NSW Public Health Network Conference

Registration Form

The registration fee is $80 for both days. This includes lunch, morning and afternoon tea on both days and a social gathering on the evening of December 11.

Registration will be limited to 200 people.

Delegate's name/address details

Name: .....

Position: .....

Organisation: .....

Address: .....

.....

Telephone: .....

Payment *(please tick the appropriate box)*

☐ I enclose a cheque made out to **the NSW Health Department** for $80 *(please do not send cash)*

☐ Payment will be forwarded by my employer

Dietary requirements

☐ No special dietary requirement

☐ Vegetarian

☐ Other *(please specify)*

Accommodation

Special rates for accommodation are available during the conference at the following motels, which are within walking distance of the university. Accommodation bookings are the responsibility of participants.

- Camperdown Travelodge, $110. Ph (02) 9516 1522
- University Motor Inn, $103. Ph (02) 9660 5777

Please post registration and abstract forms to:

3rd NSW Public Health Network Conference
Centre for Research and Development
NSW Health Department
Locked Mail Bag 961
North Sydney NSW 2059

ONE HUNDRED YEARS OF PUBLIC HEALTH

3rd NSW Public Health Network Conference

Call for Abstracts

Members of the NSW Public Health Network are invited to submit abstracts of papers or posters to be considered for inclusion in the 3rd NSW Public Health Network Conference.
The closing date for abstracts is October 14, 1996.

Abstracts will be evaluated by the conference organising committee and authors/presenters will be advised by the end of October whether their abstracts have been accepted. Authors can submit more than one abstract. Guidelines for the submission of abstracts are provided with the abstract form on the back of this page. Abstracts will be considered only if they conform with the guidelines.

Presentations will be a total of 20 minutes in duration: 10 minutes for presentation and 10 minutes for questions. Posters will be displayed throughout the conference.

Poster dimensions:

- The poster size should be no more than 1 metre wide by 1.5 metres high.
- The title should be across the top of the poster in letters at least 3cm high.
- The poster should be readable from a distance of 1 metre. Use a text size of at least 3mm.
- All text letters should be in bold. Restrict the use of upper-case font in the text.

For further information about the abstract and/or the conference, please contact:

Deborah Baker	ph (02) 9391 9853	fax (02) 9391 9232
Dan Russell	ph (063) 328 505	fax (063) 328 569
Mary Osborn	ph (02) 9391 9915	fax (02) 9391 9232
Jane Sheldon	ph (02) 9391 9539	fax (02) 9391 9579

To assist with classification of your abstract, please provide the following information.

Preferred format:

☐ Oral presentation ☐ Poster

Audiovisual requirements:

☐ Overhead projector ☐ Videoplayer/monitor VHS ☐ Slide projector

ONE HUNDRED YEARS OF PUBLIC HEALTH

3rd NSW Public Health Network Conference

Abstract form

Title .....

Author(s)	**Presenter** .....
1.	.....
2.	**Presenter's organisation** .....
3.	.....

STYLE GUIDELINES FOR AUTHORS

Abstracts should:

- be no more than 250 words of text
- fit within the space provided below
- use the headings provided
- be typed in 12-point Times New Roman Font
- use left-justification of paragraphs

WHERE TO SEND ABSTRACTS

Send abstracts on a 3.5" disc, with two hard copies, to:

3rd NSW Public Health Network Conference,
Centre for Research and Development,
NSW Health Department,
Locked Mail Bag 961,
North Sydney NSW 2059.

Suggested headings to structure Abstract: **Background/Context, Methods/Strategy, Results/Outcomes, Conclusions.**

DEADLINE FOR ABSTRACTS IS MONDAY, OCTOBER 14, 1996

PUBLIC HEALTH ABSTRACTS

Professor James S. Lawson, Professor and Head of the School of Health Services Management at the University of NSW, has prepared the following public health items from the literature.

EARLY INFANT DIETS AND INSULIN-DEPENDENT DIABETES

A meta-analysis of epidemiological studies has shown a weak but significant association (odds ratio 1.5) between infant nutrition and the risk of insulin-dependent diabetes (IDD). This study showed that IDD patients were more likely to have had earlier exposure to cow's milk and were likely to have been breast fed for a shorter time than healthy individuals. Later investigations have not supported this finding. Accordingly, breast feeding should be supported for many good reasons and current infant feeding guidelines should not be changed until much more concrete evidence is available.

Ellis TM, Atkinson MA. Early infant diets and insulin-dependent diabetes. *Lancet* 1996; 347:1464-5.

SALT-HIGH BLOOD PRESSURE LINK CONFIRMED

An international study (Intersalt) has confirmed earlier work that gives further substance to the long-known link between consumption of high levels of salt and high blood pressure. In addition, a study in chimpanzees has shown that the addition of 100 mmol of sodium to their diet increased their systolic blood pressure by 12 mm Hg. As three-quarters of the salt in the diet is hidden in processed food, a priority is to influence the food industry. As salt is the main source of "taste" this is an extremely difficult but worthwhile exercise.

Elliott P et al. Intersalt revisited: further analyses of 24-hour sodium excretion and blood pressure within and across populations. *Br Med J* 1996; 312:1249-53.

SIDS: RISE AND FALL ACCORDING TO SEASON

The incidence of sudden infant death syndrome (SIDS) has fallen dramatically in recent years. This fall has been attributed to the encouragement of the infant sleeping face up and having infants sleep in the parents' bed or bedroom. However in both the UK and Australia, despite variations in climate temperature and the reduction in deaths, sudden infant deaths remain much more common in summer than in winter. This is unexplained but may be a clue to aetiology.

Douglas AS et al. Seasonality and the sudden infant death syndrome during 1987-9 and 1991-3 in Australia and Britain. *Br Med J* 1996; 312:1381-3.

REGULAR EXERCISE IS OF EMOTIONAL BENEFIT TO TEENAGERS

A prospective UK study has confirmed that there are benefits to the mental health of teenagers associated with regular physical exercise.

Steptoe A, Butler N. Sports participation and emotional wellbeing in adolescents. *Lancet* 1996; 347:1789-92.

ALL TYPES OF ALCOHOLIC DRINKS REDUCE CORONARY HEART DISEASE

The inverse association between alcoholic drinks and coronary heart disease is well established. A review of the studies strongly suggests it is the alcohol itself that is responsible for the reduction. Previously it has been thought it was other substances, including the ingredients of red wine.

Rimm et al. Review of moderate alcohol consumption and reduced risk of coronary heart disease: is the effect due to beer, wine or spirits? *Br Med J* 1996; 312:731-6.

DRINKING THIAMINE TO HELP PREVENT ALCOHOL-RELATED BRAIN DAMAGE

About 500 Australians develop brain damage each year because of alcohol consumption (Wernicke-Korsakoff syndrome). This brain damage is caused by the poor diets of many heavy drinkers which leads to thiamine deficiency. Since 1991 it has been compulsory for bread manufacturers to use thiamine-enriched flour as a public health measure against such brain damage. However enriching alcoholic drinks with thiamine is a much less expensive alternative – by a factor of some 36.

Connelly L, Price J. Preventing the Wernicke-Korsakoff syndrome in Australia: the cost effectiveness of thiamine-supplementation alternatives. *Aust NZ J Public Health* 1996; 20:181-7.

Rubella outbreak in Western Sydney

► *Continued from page 71*

programs on population immunity[4,8-10]. In addition, surveillance of rubella occurring during pregnancy and of therapeutic abortions undertaken for intrauterine rubella, is more sensitive than counting cases of CRS[4]. None of these surveillance methods is employed in NSW. Their use should be considered.

ACKNOWLEDGMENTS

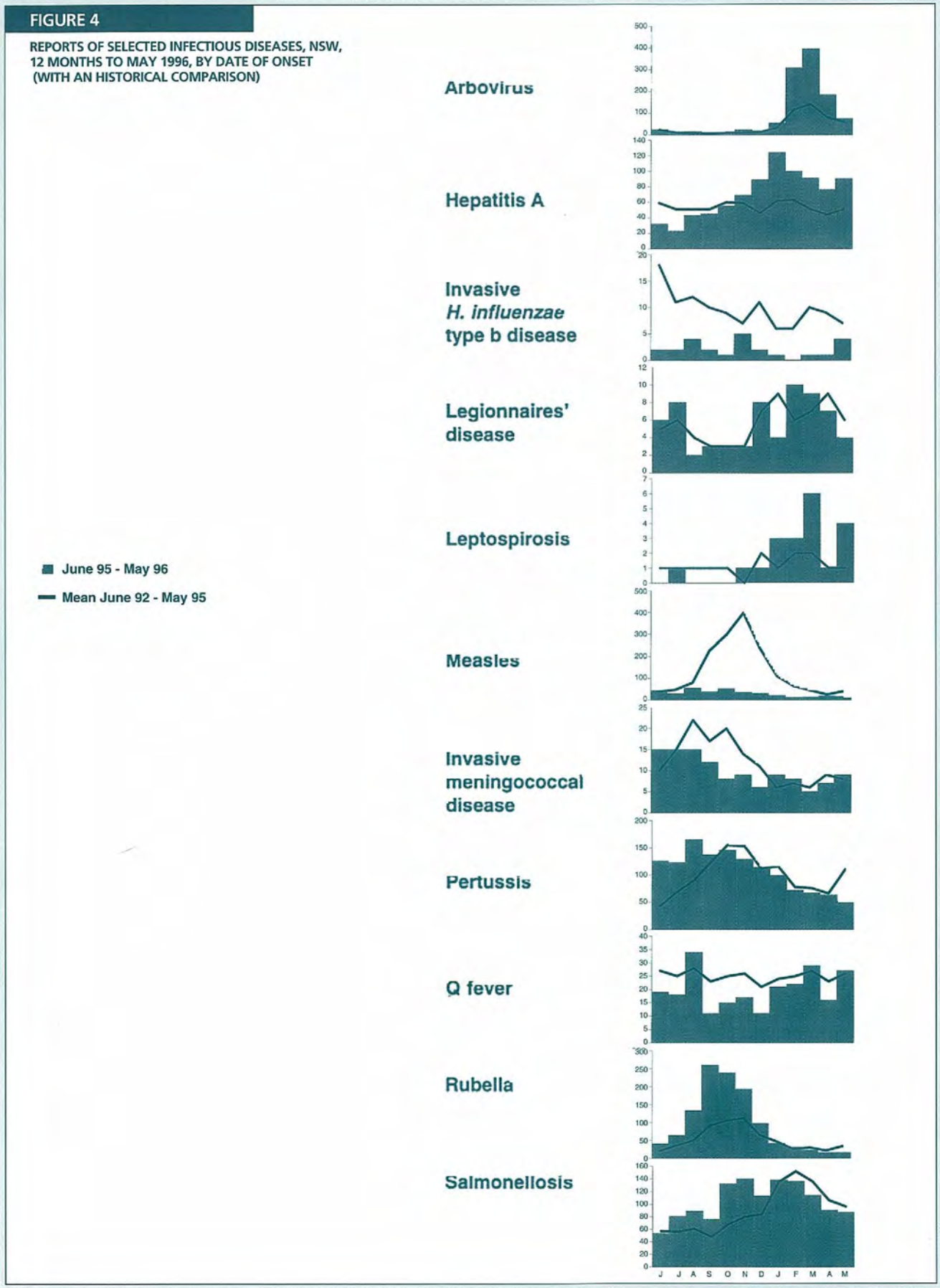
The authors thank A/Professor Margaret Burgess (New Children's Hospital, Westmead) for critically reviewing this report. The Master of Applied Epidemiology Program is funded by the Commonwealth Department of Health and Family Services.

---

1. New South Wales Health. Notification trends: Increase in rubella notifications. *Public Health Bulletin* 1995; 6:95-96.
2. NSW Health. Notification trends: Rubella. *Public Health Bulletin* 1995; 6:152.
3. Center for Disease Control and Prevention. Epi Info 6.02. A word processing, database, and statistical program for Public Health. Atlanta, USA, 1994.
4. Miller E, Tookey P, Morgan Capner P et al. Rubella surveillance to June 1994: third joint report from the PHLS and the National Congenital Rubella Surveillance Programme. *Commun Dis Rep CDR Rev* 1994; 4:R146-52.
5. Herrmann KL. Rubella in the United States: toward a strategy for disease control and elimination. *Epidemiol Infect* 1991; 107:55-61.
6. Rubella prevention. Recommendations of the Immunization Practices Advisory Committee (ACIP). *MMWR* 1990; 39:1-18.
7. Miller E. Measles, mumps and rubella: present and future immunisation policy. *Public Health* 1988; 102:317-321.
8. Noah ND, Fowle SE. Immunity to rubella in women of childbearing age in the United Kingdom. *BMJ* 1988; 297:1301-1304.
9. Edmond E, Zealley H. The impact of a rubella prevention policy on the outcome of rubella in pregnancy. *Br J Obstet Gynaecol* 1986; 93:563-567.
10. Anderson RM, Grenfell BT. Quantitative investigations of different vaccination policies for the control of congenital rubella syndrome (CRS) in the United Kingdom. *J Hyg Lond* 1986; 96:305-333.

FIGURE 4

REPORTS OF SELECTED INFECTIOUS DISEASES, NSW, 12 MONTHS TO MAY 1996, BY DATE OF ONSET (WITH AN HISTORICAL COMPARISON)



INFECTIOUS DISEASES

TRENDS

The arrival of winter was associated with a seasonal decrease in notifications for **arboviruses** (Figure 4), and a seasonal increase in respiratory pathogens. **Influenza A** and **respiratory syncytial virus** (RSV) have begun to reappear, and there have been increased notifications of **meningococcal disease**. There were reports of nine cases of meningococcal disease with onsets in May 1996 (Figure 4), and another 12 so far in June. These cases appear to have been unrelated. Notifications of ***hepatitis A*** and **leptospirosis** have continued at relatively high levels, but reports of ***Haemophilus influenzae* type b disease** and **pertussis** have been lower than usual for this time of year (Figure 4).

BRONCHIOLITIS

RSV was the agent chiefly responsible for a run of bronchiolitis in infants in June 1996. A telephone survey of the two Sydney paediatric hospitals and the paediatric unit in the Hunter revealed that more than 170 infants had been admitted with bronchiolitis in June. Laboratories at Liverpool, Prince of Wales and Westmead hospitals reported that RSV was the most commonly diagnosed respiratory virus, with more than 150 isolates in June and 75 diagnoses in the first half of July.

Bronchiolitis is an acute respiratory disease of infants aged <2 years. It is characterised by a prodromal mild fever lasting 1-7 days, cough, wheeze, coryza, irritability, anorexia and respiratory distress (signified by increased respiratory and heart rates, retracted chest wall, nasal flaring and grunting). Dehydration may be a complication, resulting from vomiting, tachypnoea and anorexia. Patients are acutely ill for 3-4 days, and may take 1-2 weeks to recover completely[1].

Most bronchiolitis cases are caused by RSV. Other causative agents include parainfluenza viruses, adenoviruses and rhinoviruses. Cases generally peak in winter and early spring (coincident with the peak of RSV infection), and more than 10 per cent of children aged <1 year and 5 per cent of children aged 1-2 years can be affected. Risk factors for illness include age 2-10 months, attendance at child care facilities, male sex, crowded living conditions, atopy and lack of breast feeding. Infants with underlying heart or lung disease, and premature and very young babies, are at greatest risk of severe disease[1].

Infection leads to inflammation and necrosis of the bronchial and bronchiolar epithelium; sloughing can cause a ball-valve effect in the peripheral lungs. Diagnosis is supported by a chest radiograph showing hyper-inflation, and the causative virus can be isolated from respiratory secretions[1].

Parents should be warned to monitor their affected infants closely for signs of deterioration, and encouraged to return for reassessment and possible admission if the child's condition deteriorates. Treatment is primarily supportive, with oxygen the mainstay of therapy. Aerosolised ribaviran (an antiviral drug) is thought to be helpful in severe cases, and bronchodilators may assist in overcoming coexisting bronchoconstriction[1].

RSV can also cause serious infections, including bronchopneumonia, in elderly and immunocompromised patients. It is primarily transmitted by direct contact or aerosolised droplets[2], so transmission can easily occur within households, or in children's and adult respiratory or geriatric wards. Symptomatic adults should avoid small children, and practise thorough handwashing after nose-blowing and before handling small children and others at risk.

INFLUENZA

Influenza activity continued to increase up to the second week of July 1996, reaching levels slightly higher than the historical average for this time of year.

Reports of influenza-like illness (ILI) from the NSW Sentinel General Practitioner (GP) Surveillance Scheme are received through six Public Health Units (PHUs) from more than 50 GPs carrying out about 7,000 consultations a week. Figure 5 shows that the average consultation rate for ILI in the first week of July was 3.5 per cent, slightly higher than the average for the previous few years. Western Sydney had the highest consultation rate at 4.5 per cent. The epidemic level (defined as 10 per cent) has not been reached since 1992. ILI activity actually decreased late in June or early in July in Western Sydney, Southern NSW and New England Areas.

School absentee rates are monitored through seven PHUs from 12 schools with a total of about 11,000 students. Figure 6 shows that the average absentee rate in the second half of June was similar to the historical average for this time of year.

FIGURE 5

NSW GP SENTINEL SURVEILLANCE
Influenza-like illness 1996

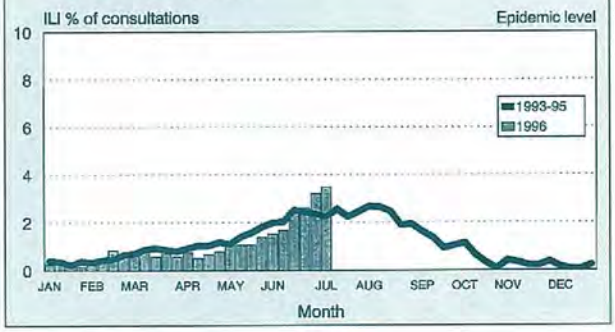
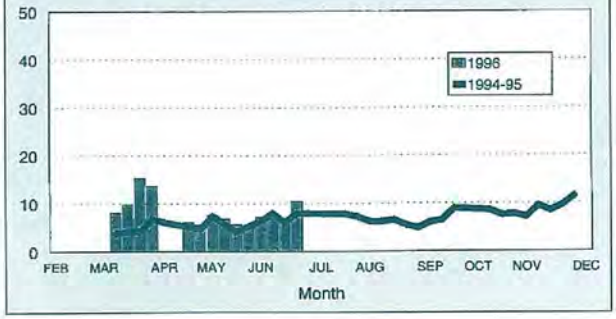


FIGURE 6

SCHOOL ABSENTEE RATE SURVEILLANCE
NSW 1996



► Continued from page 79

Reports from the laboratories of Liverpool, Prince of Wales and Westmead hospitals indicate that, during the first two weeks of July 1996, diagnoses of influenza A continued to increase (10 serological, 25 virological diagnoses). There were no diagnoses of influenza B in that period.

New Zealand influenza epidemic

New Zealand is experiencing a large influenza A outbreak. At the end of June 1996 the numbers of both virus isolations and doctor consultations for influenza were three times the peak reached in 1995. The predominant strain detected so far this season in New Zealand and Australia has been A/Wuhan/359/95 (H3N2), which is antigenically similar to this year's H3N2 vaccine component A/Johannesburg/33/94.

Historically, the peak influenza season has typically occurred in Australia about 4-6 weeks later than in New Zealand. Serologic studies of human sera indicate that the current Australian vaccine components will protect against the circulating viruses. The same vaccine is used in New Zealand and anecdotal reports from there suggest it has been protective. Therefore, people at high risk of severe disease, i.e. Aboriginal people and Torres Strait Islanders aged >50 years old and others aged >65 years old, adults with chronic debilitating diseases, children with cyanotic congenital heart disease, and people on immunosuppressive therapy who have not been immunised this year should seek immunisation as soon as possible. In addition, staff caring for immunocompromised patients, and staff and residents of nursing homes and other chronic care facilities should strongly consider getting immunised.

VANCOMYCIN-RESISTANT ENTEROCOCCI

In May 1996 four patients with vancomycin-resistant enterococci (VRE) were identified in NSW. Previously only one case – in a liver transplant recipient – had been reported in Australia[3]. Enterococci are common bacteria in the human gut. In recent years, resistance to vancomycin – an important broad spectrum antibiotic – has been increasingly reported overseas, associated with overuse of vancomycin in humans. Development of resistance leaves extremely limited antibiotic treatment options for infected patients.

VRE is spread via direct contact or indirectly via hands of health care workers or contaminated patient care equipment or environmental surfaces. NSW infection control guidelines recommend hand-washing by health care workers before and after any patient contact, and wearing gloves when contacting body fluid, including faeces, to reduce the spread of organisms including VRE.

The United States Centers for Disease Control and Prevention (CDC) recommended the following measures in 1995 to prevent and control the spread of VRE[4]:

- prudent use of vancomycin by clinicians;
- education of hospital staff about VRE;
- surveillance of VRE by hospital laboratories; and
- immediate implementation of infection control measures to prevent person-to-person transmission of VRE.

Where VRE-infected patients are identified, the CDC recommends that:

- they should be placed in a single room, or in the same room as other infected or colonised patients;
- persons entering that room should:
  - wear gloves which should be changed when soiled; and
  - wear a gown if substantial contact with the patient or environmental surfaces is anticipated, or if the patient is incontinent, has diarrhoea, or has an ileostomy, a colostomy or uncontained wound drainage;
- persons leaving the room should:
  - first remove gloves and gown;
  - wash hands immediately with an antiseptic soap or waterless antiseptic agent; and
  - ensure that clothing and hands do not contact potentially contaminated surfaces;
- non-critical items (e.g. stethoscopes) should be dedicated to that room; and
- other patients who had been in the same ward as the patient should be screened for VRE.

Available evidence suggests that until local guidelines have been agreed upon, CDC recommendations should be followed in NSW.

In response to reports of VRE in NSW, the Chief Health Officer wrote to all Area Chief Executives in May 1996 requesting that active surveillance be undertaken and that laboratories report isolates of VRE to the NSW Health Department's AIDS/Infectious Diseases Branch. At the time of writing, no additional reports have been received. NSW surveillance data will be used to develop local prevention strategies, including the education of clinicians and other hospital staff regarding vancomycin use and infection control.

To reiterate, laboratories and hospitals are encouraged to notify any VRE cases to the NSW Health Department's AIDS/Infectious Diseases Branch (phone 02 9391 9192), either directly or through local Public Health Units.

HEPATITIS ADVISORY COMMITTEE

The Hepatitis Advisory Committee met on June 17, 1996. Issues discussed included:

- a Blood Bank 'lookback', where people will be offered testing if they received blood after 1983 from donors later found to have hepatitis C;
- a draft circular on hepatitis C-infected health care workers;
- provision of limited funding to authorised public laboratories for supplemental hepatitis C testing; and
- response to the National Health and Medical Research Council *Draft Report on a Strategy for the Detection and Management of Hepatitis C in Australia.*

CIRCULARS

There have been many inquiries from private nursing homes about record-keeping and reminder systems for staff hepatitis B immunisation (NSW Health Department Circular 96/40 *Hepatitis B and Health Care Workers*). Methods of record-keeping were not specified in the circular.

Ms Helen Taylor, of the Department's AIDS/ Infectious Diseases Branch, would be pleased to hear from any health facility which has developed an efficient and user-friendly record-keeping system which could be adopted by others (phone 02 9391 9408).

IMMUNISATION ADVERSE EVENTS CLINIC, NEW CHILDREN'S HOSPITAL, WESTMEAD

Margaret Burgess
Physician in Preventative Medicine
Royal Alexandra Hospital for Children

The New Children's Hospital, Westmead, is introducing a clinic to which infants or children who have had a serious adverse event following an immunisation, or who have a significant medical condition, may be referred for evaluation of their immunisation schedule.

Children whom you may wish to refer to the Immunisation Adverse Events Clinic are likely to have one of the following:

- previous anaphylactoid reaction to a vaccine;
- encephalopathy after a vaccine;
- condition requiring hospitalisation after vaccination;
- severe anaphylactoid reaction to egg (for measles/mumps/rubella immunisation only);
- prolonged afebrile fit within 24 hours of vaccination;
- severe hypotonic hypo-responsive episode following vaccination; or
- very severe local reaction.

Children with pre-existing medical conditions such as epilepsy or immunodeficiency are usually advised about immunisation by their neurologist or immunologist. If children with similar conditions do not have subspecialists involved, this clinic can help with immunisation advice.

The clinic is not for the immunisation equivalent of the "worried well". There is no evidence that parents who have doubts about the safety of immunisation benefit from attendance at an Adverse Events Clinic. The Commonwealth Department of Health and Family Services produces two booklets which parents find very helpful. These are entitled *Understanding Childhood Immunisation*, and *Immunisation Myths*. The booklets may be obtained by faxing the National Childhood Immunisation Program Education Section on (06) 289 6838.

The Immunisation Adverse Events Clinic will be held every second Friday morning from September. Appointments may be made by phoning (02) 9845 2525. If indicated, and if the parents agree, the children will be vaccinated in the clinic.

---

1. Hall CB, Hall WJ. Bronchiolitis. In: Mandell GL, Bennett JE, Dolin R (Eds). Principles and Practice of Infectious Diseases (4th Edition). Churchill Livingstone. New York: 1995.
2. Benenson AS (Ed). Control of Communicable Diseases Manual (16th Edition). American Public Health Association. Washington: 1995.
3. Heath CH, Blackmore TK, Gordon DL. Emerging resistance in enterococcus spp. *Med J Aust* 1996; 164:116-120.
4. Hospital Infection Control Practices Advisory Committee. Recommendations for preventing the spread of vancomycin resistance. *Infect Control Hosp Epidemiol* 1995; 16:105-113.

PUBLIC HEALTH EDITORIAL STAFF

The editor of the *NSW Public Health Bulletin* is Dr Michael Frommer, Director, Centre for Research and Development, NSW Health Department. Dr Lynne Madden is production manager.

The *Bulletin* aims to provide its readers with population health data and information to motivate effective public health action. Articles, news and comments should be 1,000 words or less in length and include a summary of the key points to be made in the first paragraph. References should be set out using the Vancouver style, the full text of which can be found in *British Medical Journal* 1988; 296:401-5.

Please submit items in hard copy and on diskette, preferably using WordPerfect, to the editor, *NSW Public Health Bulletin*, Locked Mail Bag 961, North Sydney 2059. Facsimile (02) 9391 9029.

Please contact your local Public Health Unit to obtain copies of the *NSW Public Health Bulletin*. The *Bulletin* can be accessed via the Internet from the NSW Health Department's World Wide Website, at http://www.health.nsw.gov.au/public-health/phb/phb.html

Back issues can be obtained from the Better Health Centre, Locked Mail Bag 961, North Sydney 2059. Telephone: (02) 9954 1193, Facsimile (02) 9955 5196.

TABLE 3

INFECTIOUS DISEASE NOTIFICATIONS FOR NSW IN 1996, RECEIVED BY THE END OF JUNE BY PUBLIC HEALTH UNIT, AND BY PERIOD OF ONSET OR SPECIMEN DATE

Condition	Public Health Unit																Period	
	CCA	CSA	CW	ESA	HUN	ILL	NC	ND	NSA	SE	SSA	SW	SWS	WEN	WN	WSA	Total to date	Total for June
Blood-borne and sexually transmitted																		
AIDS	5	27	–	52	5	–	7	–	19	–	3	1	18	4	–	4	145	12
HIV infection	*From this month HIV data will be reported bi-monthly*																	
Hepatitis B – acute viral	1	–	–	11	–	–	1	–	–	–	1	–	2	–	2	2	20	2
Hepatitis B – other	37	218	19	202	40	46	43	10	262	9	345	14	769	20	22	333	2,389	255*
Hepatitis C – acute viral	1	2	–	1	–	–	–	1	–	–	–	–	–	–	–	1	6	–
Hepatitis C – other	164	377	134	437	226	239	344	102	311	100	231	85	540	175	46	367	3,878	382*
Hepatitis D – unspecified	–	–	–	–	–	1	2	–	–	–	–	–	–	–	–	–	3	1
Hepatitis, acute viral (NOS)	–	–	1	1	–	–	–	–	–	–	–	–	–	–	–	1	3	–
Gonorrhoea	4	26	6	119	2	2	8	11	13	3	12	–	9	5	20	17	257	30
Syphilis	5	33	8	79	16	4	22	29	21	2	18	1	63	3	32	26	362	38
Vector-borne																		
Arboviral infection	8	3	20	5	69	10	374	254	14	15	4	90	7	1	182	6	1,062	41
Malaria	3	15	2	10	12	7	5	4	18	3	11	6	5	4	1	13	119	22
Zoonoses																		
Brucellosis	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	–
Hydatid disease	–	1	2	–	1	–	1	–	–	–	–	1	1	–	–	–	7	–
Leptospirosis	–	–	1	–	5	–	7	4	–	–	–	–	2	–	–	–	19	2
Q fever	–	1	8	–	7	–	16	27	–	19	–	9	–	–	56	–	143	28
Respiratory/Other																		
Legionnaires' disease	2	2	2	–	3	1	2	–	2	3	2	–	6	2	–	8	35	1
Meningococcal (invasive) infection	3	4	4	1	8	4	5	1	1	1	4	1	3	4	5	3	52	14
Leprosy	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1	–
Tuberculosis	6	11	2	13	3	10	3	1	28	2	22	4	41	4	–	28	178	15
Mycobacteria other than TB	13	20	1	30	7	–	17	3	26	–	13	2	24	7	2	23	188	12
Vaccine-preventable																		
Adverse event after immunisation	–	–	2	1	–	–	2	2	–	8	1	1	1	1	–	3	22	1
H. Influenzae (invasive) infection	–	–	1	2	1	–	–	–	–	1	–	1	–	–	–	2	8	1
Measles	1	3	5	4	2	9	7	4	1	3	7	5	12	4	7	17	91	8
Mumps	–	1	–	1	2	–	1	–	5	–	1	1	1	–	–	–	13	1
Pertussis	4	13	5	20	55	23	54	21	38	18	13	38	19	8	5	51	385	32
Rubella	–	40	1	1	3	9	2	3	1	3	7	–	–	17	–	48	135	7
Faecal-oral																		
Cholera	–	–	–	1	–	–	–	–	–	–	–	–	1	–	–	–	2	–
Foodborne illness (NOS)	14	3	–	1	2	1	–	1	–	–	2	2	4	–	10	–	40	2
Gastroenteritis (Instit)	–	51	–	–	48	–	–	1	–	–	–	–	1	8	5	29	143	64
Hepatitis A	16	75	19	154	12	92	14	8	35	10	28	4	25	5	9	35	541	59
Listeriosis	–	–	–	–	1	–	–	–	–	1	1	–	2	–	–	–	5	1
Salmonellosis (NOS)	31	18	10	34	45	24	76	39	67	10	56	30	79	17	27	44	607	42
Typhoid and Paratyphoid	–	6	–	1	2	1	–	–	1	–	1	–	7	–	–	1	20	1

* includes acute

Abbreviations used in this Bulletin:
CSA Central Sydney Health Area, SSA Southern Sydney Health Area, ESA Eastern Sydney Health Area, SWS South Western Sydney Health Area, WSA Western Sydney Health Area, WEN Wentworth Health Area, NSA Northern Sydney Health Area, CCA Central Coast Health Area, ILL Illawarra Health Area, HUN Hunter Health Area, NC North Coast Public Health Unit, ND Northern District Public Health Unit, WN Western New South Wales Public Health Unit, CW Central West Public Health Unit, SW South West Public Health Unit, SE South East Public Health Unit, OTH Interstate/Overseas, U/K Unknown, NOS Not Otherwise Stated.

Please note that the data contained in this Bulletin are provisional and subject to change because of late reports or changes in case classification. Data are tabulated where possible by area of residence and by the disease onset date and not simply the date of notification or receipt of such notification.