

LABORATORY

Surveillance of Infectious Disease

In April, 1989 the Medical Officer of Health (MOH) of the Eastern Sydney Area Health Service (ESAHS) and members of the Epidemiology Branch (EB), Department of Health, NSW, agreed to test a system for collecting laboratory data on infectious diseases. As a result, the Laboratory Infectious Disease (ID) Surveillance Project was developed in the ESAHS. The following ESAHS public hospital laboratories were involved in the network for the pilot scheme: Prince of Wales, Prince Henry, Royal South Sydney, St Vincents and Sydney.

After successful completion of the pilot phase of the project the network approached private laboratories providing services in the eastern Sydney area. In September, 1989 the following private laboratories joined the network: Michael D Frack and CH Mansfield; PK Lamond, JH Baird and JF Finlayson; Macquarie Pathology Services; Hanly Moir Pathology; Stat Labs and Sugerman's Pathology. At the same time the microbiology laboratory at the Royal Alexandra Hospital for Children, Camperdown began participating in the project.

Each participating laboratory in this system completes an information sheet which includes: diagnosis, laboratory identification number, patient identifier, area of residence, sex and age of the patient. Each week laboratory staff transmit this information by facsimile to the MOH of the ESAHS who initiates appropriate public health action. The forms are then redirected by facsimile to the EB where the information is entered into a purpose-designed database (EPIINFO Version 3).

Continued on page opposite ►

TABLE 5

LABORATORY ID SURVEILLANCE PROJECT, NSW
1989 & 1990 NOTIFICATIONS
BY FOUR WEEKLY REPORTING PERIODS

BACTERIAL/PROTOZOAN	1989												1990			Total
	REPORTING PERIOD												01	02	03	
ORGANISM	01-06	07	08	09	10	11	12	13	01	02	03	04	05	06	07	08
Aeromonas hydrophila	2	0	0	0	0	2	2	9	3	8	3					29
Bordetella pertussis	28	7	17	14	20	31	52	32	28	28	8					265
Campylobacter spp	42	10	4	8	6	15	109	117	127	112	84					634
Cryptosporidium	0	0	0	1	3	4	0	5	3	9	2					27
Giardia lamblia	15	2	0	5	0	2	34	28	31	68	49					234
H. Influenzae (systemic)	3	2	2	1	1	0	3	4	0	3	4					23
Legionella spp	4	1	0	1	0	0	2	1	0	1	0					10
Malaria	0	0	0	0	0	0	0	0	1	4	0					5
Mycobacterium tuberculosis	11	13	6	4	4	0	4	2	1	0	0					45
Mycobacterium atypical	20	16	16	6	6	2	2	2	5	2	0					77
Mycoplasma pneumoniae	6	3	0	1	2	1	6	2	7	4	2					34
Neisseria meningitidis	0	0	2	0	1	2	1	0	0	1	0					7
Sal. typhi, paratyphi A&B	13	0	2	1	4	1	1	0	0	3	0					25
Salmonella spp	9	3	6	3	1	6	11	27	27	40	36					169
Shigella spp	6	0	0	0	1	3	5	0	4	3	3					25
Streptococcus group B	1	0	0	0	0	0	1	1	0	0	0					3
Streptococcus pneumoniae	4	1	0	9	4	4	1	1	3	0	1					28
Streptococcus pyogenes	0	0	0	0	0	0	2	1	0	2	0					5
Yersinia enterocolitica	13	1	1	5	0	1	3	6	4	2	3					39
Total	177	59	56	59	50	74	239	238	244	290	195					1684

VIRAL	1989												1990			Total
	REPORTING PERIOD												01	02	03	
ORGANISM	01-06	07	08	09	10	11	12	13	01	02	03	04	05	06	07	08
Adenovirus	0	0	0	0	0	0	1	0	0	0	0					1
Cytomegalovirus	0	0	1	0	0	5	10	4	7	12	3					42
Enteroviruses (non-Polio)	39	13	13	7	6	6	8	0	3	3	1					99
Epstein-Barr virus	0	0	0	0	2	4	26	9	12	17	11					81
Hepatitis A	2	1	0	0	0	0	5	8	2	4	2					24
Hepatitis B (acute)	0	0	0	0	0	3	4	0	2	0	1					10
Hepatitis B (unspec/carrier)	54	18	11	15	13	15	123	72	91	79	76					567
Influenza type A	0	0	0	6	7	3	6	3	0	0	3					28
Influenza type B	3	0	0	6	9	2	0	0	0	0	0					20
Parainfluenza	1	1	1	2	2	5	2	1	0	0	0					15
Respiratory syncytial virus	23	23	14	9	5	2	2	0	0	0	5					83
Rhinovirus	0	0	0	0	0	0	2	0	1	0	0					3
Rotavirus	5	7	18	35	48	49	30	9	10	6	9					226
Rubella	0	0	0	0	0	0	51	26	8	12	7					104
Varicella	0	0	0	0	1	0	6	2	2	8	3					22
Total	127	63	58	80	93	94	276	134	138	141	121					1325

STD	1989												1990			Total
	REPORTING PERIOD												01	02	03	
ORGANISM	01-06	07	08	09	10	11	12	13	01	02	03	04	05	06	07	08
Chlamydia trachomatis	59	31	12	13	24	25	68	38	70	109	63					512
Neisseria gonorrhoeae	17	11	9	8	10	26	30	31	29	44	30					245
Treponema pallidum	3	2	0	0	0	6	16	3	8	2	11					51
Total	79	44	21	21	34	57	114	72	107	155	104					808

LOW FREQUENCY	1989												1990			Total
	REPORTING PERIOD												01	02	03	
ORGANISM	01-06	07	08	09	10	11	12	13	01	02	03	04	05	06	07	08
Arboviruses (NOS) ¹	0	0	0	0	0	0	0	0	1	0	0					1
Brucella abortus	3	0	1	0	0	0	2	0	0	0	0					6
Clostridium difficile	0	0	0	0	0	0	0	0	0	0	1					1
Chlamydia psittaci	0	0	1	0	0	0	0	0	0	0	2					3
Cryptococcus neoformans	1	2	0	2	2	2	2	2	0	0	0					13
Echinococcus	2	0	0	0	0	0	0	0	0	0	0					2
Entamoeba histolytica	0	0	0	0	0	0	0	0	4	0	0					4
Enterovirus polio	0	0	0	0	0	0	0	2	0	2	1					5
Leptospira spp	1	0	0	0	0	0	0	0	0	1	0					2
Listeria monocytogenes	0	0	0	0	0	0	1	0	0	0	0					1
Pneumocystis carinii	0	0	0	0	0	2	0	3	0	0	0					5
Ross River virus	6	0	0	0	0	4	1	0	0	1	0					12
Toxoplasma	0	0	0	0	0	0	0	0	0	3	1					4
Total	13	2	2	2	2	8	6	7	5	7	5					59

1. NOS — Not Otherwise Specified.

Laboratory Surveillance of Infectious Disease

► Continued from page 5

These data are analysed and a report, consisting of the accumulated data and a brief commentary, is forwarded by facsimile to the participating laboratories within two working days. The enclosed tables show the data collected during 1989 and 1990 by monthly reporting period. The scheme has been maintained by the enthusiastic support and interest of all the participants. The feedback of up to date information has been found to be of considerable benefit to the laboratories, particularly in assisting them to fulfil their consultative role to the primary care practitioners.

The Laboratory ID Surveillance Project also has been successful in promptly identifying outbreaks of infectious diseases. Interventions which have resulted from the Project include education campaigns in eastern Sydney to reduce spread of respiratory syncytial virus and rotavirus, rubella and whooping cough. When it became clear that the outbreaks of rubella and whooping cough were early indicators of more widespread epidemics, the education campaigns were extended statewide through the central office of the Department of Health.

*Sydney Bell MD, FRCPA
Medical Officer of Health
Eastern Area Health Service*

*Louise Rushworth MB BS
Department of Health, NSW*

*Rob Hunter RN
Department of Health, NSW*

Improved Public Health

► Continued from page 2

infectious and non-infectious disease, reproductive health and injury. Examples include examining horizontal transmission of hepatitis B and investigating risk factors for invasive haemophilus influenza B infection.

It is planned to appoint an experienced epidemiologist to give a personal touch to communications throughout the developing public health and epidemiology network. As well, there will be regular meetings of PHU and Central Office staff.

Future challenges in NSW for public health professionals include developing clear strategies for action at both the central and Area/Regional levels; demonstrating the utility of epidemiologic analyses to health care decision-makers (including clinicians); developing better collaborative linkages between academic departments of public health and public health action/service groups; and effectively communicating information to health workers and the public in a timely manner.

The Bulletin will provide a useful mechanism for exchange of information and ideas on investigations, programs, and evaluations that (may) affect the health of the citizens of NSW.

*George Rubin FRACP FACPM
Department of Health, NSW*

*and Stephen Leeder FRACP FFCM PhD
Department of Community Medicine,
University of Sydney, and Chairman,
NSW Health Minister's Advisory
Council.*

1. An organised societal effort to protect, promote and restore health. It is a combination of sciences, skills and beliefs directed to the maintenance and improvement of health through collective or social actions. The programs, services and institutions involved emphasise the prevention of disease and the health needs of the population.
2. The study of the distribution and determinants of health-related states or events in specified populations and the application of this study to control health problems — it is the scientific discipline underpinning public health practice.
3. Department of Health, NSW. Epidemiology and Health Services Evaluation Branch. 1987 *Maternal and Perinatal Report*.
4. Health Services Implementation Branch. Central Office Department of Health, NSW, Organisational Structure. November 1989.

Infectious Disease

► Continued from page 3

Compared with 1988, there was an eight-fold increase in the number of pertussis cases notified to the Department of Health in 1989 (Table 2). The greatest increase occurred in the latter part of 1989 — in the two months from October 1. The majority of cases occurred in one to two year old children. Males and females were affected equally. Increased pertussis reporting has persisted through to January 1990 (Tables 3 & 4). A likely explanation for this is that immunity of children against *B. pertussis* is currently suboptimal.

While measles is potentially preventable, cases continue to be notified. Their existence suggests that there is substantial room for improvement in present immunisation practices.

Arbovirus notifications increased during 1989 compared with 1988. It is not known whether this was due to more accurate reporting than previously, or a true increase in incidence. All reported arbovirus notifications were Ross River virus infections, with the majority of cases being reported from the South West Region.

No particular trend in reporting of enteric diseases between 1988 and 1989 could be detected other than *Salmonella* notifications increased 30% in 1989. Of enteric pathogens, *Campylobacter*, *Giardia* and *Salmonella* were notified more frequently than infections due to *Shigella* and *Yersinia* and unclassified infantile diarrhoea. Typhoid fever is no longer endemic in New South Wales; primary cases reported for 1988 and 1989 occurred in overseas visitors. Six cases were notified in the first 2 months of 1990 (Tables 3 & 4).

Sexually transmitted disease notifications declined in 1989 compared with 1988 — genital herpes (7.5%), gonorrhoea (19.2%), syphilis (6.5%) and non-specific urethritis (45%). This pattern of declining notifications is still evident in the first 2 months of 1990 (Table 3).

Malaria notifications increased substantially in the first 8 weeks of 1990 compared with the comparable period in 1989 (Table 3). The majority of these cases reside in northern Sydney (Table 4). Most of these cases were acquired in Papua New Guinea.

*Reported by the
Infectious Disease Section,
Epidemiology and Health Services
Evaluation Branch, Department
of Health, NSW*