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IMMUNISATION — BENEFITS OUTWEIGH RISKS

Immunisation programs in NSW have been extremely effective in reducing the risk of disease. Diphtheria and poliomyelitis have been eliminated, tetanus is rare, and measles and whooping cough occur far less frequently than before immunisation became universally available.

However, as the risks of disease have lessened, concerns about the side effects and complications of immunisation have increased.

Despite the safety and efficacy of modern vaccines, complications do occur. Although their rates are difficult to estimate, it is known that side effects of immunisation are far less frequent than the complications caused by the diseases themselves.

Fever and neurological conditions occur spontaneously in children whether immunised or not. Against this background, it is sometimes difficult to determine if a recent immunisation is causally, or merely coincidentally, related to a child's illness.

DIPHTHERIA

Diphtheria, caused by *Corynebacterium diphtheriae*, is an acute infectious disease which mainly affects the upper respiratory tract. It is characterised by an inflammatory exudate which forms a membrane that causes acute respiratory obstruction. The major complications of diphtheria are cardiac dysfunction and neuropathy. For complication rates from diphtheria, see Table 1.

TABLE 1

COMPLICATION RATES FROM DIPHTHERIA

COMPLICATION	RATE/100,000 CASES
Cardiac dysfunction	10,000 - 25,000
Neuropathy	75,000
Death	3500 - 12,000

(Source: Reference 2)

Diphtheria has been effectively controlled in NSW. Since 1982, only one case of diphtheria has been notified to the NSW Health Department (1987).

For vaccine adverse reactions, see Table 3.

TETANUS

Tetanus is an acute, often fatal, disease caused by the toxin produced by the bacterium, *Clostridium tetani*. Muscle rigidity with superimposed painful spasms occurs. Complications of tetanus include respiratory failure, pneumonia, pulmonary embolus, hypertension, hypotension and myocarditis.

Continued on page 41 ►

Contents

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Immunisation — Benefits Outweigh Risks

► *Continued from page 40*

In NSW, tetanus has become a rare condition (see Table 2). All recent cases have occurred in unimmunised adults. Severe cases of tetanus have a case fatality rate of 44 per cent[2].

TABLE 2

NOTIFICATIONS OF TETANUS IN NSW 1982-1990

YEAR	NOTIFICATIONS
1982	0
1983	0
1984	4
1985	1
1986	0
1987	1
1988	1
1989	0
1990	2
1991	1

(Source: Epidemiology and Health Services Evaluation Branch)

For vaccine adverse reactions, see Table 3.

Pertussis (Whooping Cough)

Pertussis, caused by *Bordetella pertussis*, is a highly infectious disease which involves the respiratory system. It causes distressing spasms of repeated violent coughing over a prolonged period. Even minor episodes of whooping cough can last for 6-8 weeks before coughing abates. Hospitalisation is often required for the treatment of children.

Complications of the condition include malnutrition caused by excessive vomiting, pneumonia, encephalitis, convulsions, coma and permanent brain damage (see Table 3). The death rate from whooping cough in Australia before the availability of a vaccine was 41.3/100,000 (1927-1936). This dropped to 0.13/100,000 (1967-1976) as a direct result of routine infant immunisation[3].

TABLE 3

ESTIMATED RATES OF ADVERSE REACTIONS FOLLOWING DTP IMMUNISATION COMPARED TO COMPLICATIONS OF PERTUSSIS

ADVERSE REACTION	WHOOPING COUGH COMPLICATIONS/ 100,000 CASES	DTP VACCINE REACTIONS/ 100,000 DOSES
Encephalitis	90 - 4000	0.1 - 3.0
Convulsions	600 - 8000	0.3 - 90
Permanent brain damage	600 - 2000	0.2 - 0.6
Death	100 - 4000	0.2
Hypersensitivity		0.5 - 30

(Source: Reference 5)

Epidemics occur when immunisation rates fall. Pertussis continues to occur in NSW, as demonstrated by the 1989/1990 figures (see Table 4). In the UK, due to adverse publicity in 1974-1978, whooping cough immunisation levels fell from 80 per cent to 31 per cent. In 1977-1979, there were 102,500 cases of whooping cough and 300 reported deaths[4]. This represents a case fatality rate of 293/100,000.

TABLE 4

NOTIFICATIONS OF PERTUSSIS IN NSW 1982-1990

YEAR	NOTIFICATIONS
1982	39
1983	137
1984	117
1985	303
1986	227
1987	43
1988	25
1989	202
1990	151

(Source: Epidemiology and Health Services Evaluation Branch)

Triple Antigen (Diphtheria Tetanus Pertussis) Vaccine

Although the pertussis component of triple antigen is more likely to cause side effects and adverse reactions than any other vaccine, the benefits of immunisation far outweigh the risks associated with the disease (see Table 3). Moderate local and systemic reactions can occur but are usually transient and minor in nature (see Table 5).

The National Childhood Encephalopathy Study examined the issue of vaccine safety. This large study conducted in the UK in 1976-1979 concluded that the estimated attributable risk of serious neurological disorders occurring within seven days of immunisation with DTP in previously normal children and persisting for one year was 1:310,000.

That conclusion has recently been criticised as being imprecise and excessive. In a landmark UK judgement in which evidence included that from the National Childhood Encephalopathy Study, Lord Justice Stewart Smith said he was not satisfied that pertussis vaccine caused permanent brain damage[7,8].

Continued on page 42 ►

TABLE 5

SIDE EFFECTS OF TRIPLE ANTIGEN IN AUSTRALIA

SIDE EFFECTS	%
Redness, bruising at the injection site	48
Irritability or vomiting	24
Fever	16
Persistent screaming	7
Drowsiness	5
Pallor	1
Convulsions	0.03

(Source: Reference 6)

This was supported by another large study conducted in the US. No evidence was found to support claims that in the three days following DTP immunisation, the risk of afebrile seizures or acute symptomatic seizures was increased. The report concluded that "serious neurological events are rarely, if ever, caused by DTP immunisation"[9].

MEASLES

Measles is an acute viral illness characterised by fever, rash, coryza, cough and conjunctivitis. The most common complications of measles involve the respiratory tract and the central nervous system. Pneumonia, encephalitis, convulsions, Subacute Sclerosing Panencephalitis (SSPE) and death can occur.

SSPE is a rare, fatal, degenerative disease of the central nervous system, which affects children and adolescents who have contracted measles (see Table 6).

TABLE 6

RATES OF SERIOUS ADVERSE REACTIONS FOLLOWING MEASLES IMMUNISATION COMPARED TO COMPLICATIONS OF MEASLES INFECTION

ADVERSE REACTION	MEASLES COMPLICATIONS/ 100,000 CASES	MEASLES VACCINE REACTIONS/ 100,000 DOSES
Pneumonia	3800 - 7300	0
Encephalitis	50 - 400	0.1
Convulsions	500 - 1000	0.02 - 190
SSPE	0.5 - 2.0	0.05 - 0.1
Death	10 - 10,000	0.02 - 0.3

(Source: Reference 5)

Epidemics of measles continue to occur at three-yearly intervals (see Table 7).

TABLE 7

NOTIFICATIONS OF MEASLES IN NSW 1982-1990

YEAR	NOTIFICATIONS
1982	96
1983	47
1984	236
1985	46
1986	140
1987	246
1988	43
1989	76
1990	388

(Source: Epidemiology and Health Services Evaluation Branch)

Since 1983, there have been 120 cases of SSPE reported in Australia. There have been 36 cases reported in NSW since 1985.

MUMPS

Mumps is an acute viral disease characterised by fever, swelling and tenderness of one or more salivary glands, usually the parotid gland. Signs of meningeal irritation appear in up to 15 per cent of cases, but permanent sequelae are rare.

Nerve deafness is one of the more serious of the rare complications (one in 500 hospitalised cases). Testicular inflammation has been reported in up to 20 per cent of clinical mumps cases in post-pubertal males, but sterility is rare. Inflammation of other organs has been observed less frequently (pancreas, ovaries, liver, heart and thyroid). Mumps is not a notifiable disease in NSW at present.

RUBELLA

Rubella (German measles) is a mild disease, causing a rash, enlarged lymph nodes and, occasionally, arthritis.

The most important complication is maternal rubella, where infection during the first trimester is the period of greatest risk for the foetus. Congenital rubella syndrome (CRS) can occur. Congenital defects include deafness, blindness, cardiac defects and mental retardation.

Rubella is not a notifiable disease in NSW. However, since 1982, five cases of congenital rubella syndrome have been reported in NSW.

In the US in 1985, the reported incidence of CRS was 0.05/100,000 live births[10].

Continued on page 43 ►

► *Continued from page 42*

TABLE 8

NOTIFICATIONS OF CONGENITAL RUBELLA SYNDROME IN NSW 1982-1990

YEAR	NOTIFICATIONS
1982	0
1983	0
1984	1
1985	1
1986	2
1987	1
1988	0
1989	0
1990	0

(Source: Epidemiology and Health Services Evaluation Branch)

MEASLES, MUMPS, RUBELLA VACCINE

Reactions to the measles component of the combined measles/mumps/rubella vaccine are significantly less frequent than complications of natural measles[11].

The most common reaction is malaise and fever, with or without a rash (5 per cent). Up to 15 per cent of those vaccinated will develop a fever which may last several days. Febrile convulsions may occur during these episodes.

Severe reactions following measles immunisation are rare. In the US, neurological disorders, including encephalitis and encephalopathy, have been reported with a frequency of less than one per million doses administered (see Table 6)[12]. The incidence of encephalitis after measles immunisation of healthy children is lower than the observed incidence of encephalitis of unknown cause.

Hypersensitivity reactions to the measles vaccine have been reported. It is a National Health and Medical Research Council recommendation that children be observed for an adequate period after receiving the vaccine[11].

Reactions to the mumps component of the combined measles/mumps/rubella vaccine are uncommon and usually mild and of brief duration.

Reactions to the rubella component of the combined measles/mumps/rubella vaccine include fever, sore throat, enlarged lymph nodes, rash and arthritis.

POLIOMYELITIS

Poliomyelitis is an acute illness resulting from the invasion of the gastrointestinal tract by poliovirus. The infection may be clinically unapparent or range in severity from a fever to aseptic meningitis or paralysis and possible death. Symptoms include headache, gastrointestinal disturbance, malaise and stiffness of the neck and back, with or without paralysis.

The most important complications of polio are respiratory failure caused by paralysis of the chest muscles, pneumonia and pulmonary embolus. Gastrointestinal complications include haemorrhage and paralytic ileus. The overall case mortality of paralytic polio in epidemics in the past was 5000-10,000/100,000.

Polio has been effectively controlled in NSW. No cases of polio have been reported since 1982.

POLIOMYELITIS VACCINE (SABIN)

Cases of vaccine-associated poliomyelitis have been reported in people who received oral polio vaccine and in those who had been close contacts with recipients. In the 12-year period, 1969-1980, about 290 million doses of oral polio vaccine were distributed in the US and 92 cases of vaccine-associated paralysis were reported (0.03/100,000 doses)[11]. 25 of these cases were in healthy recipients (0.01/100,000), 55 in healthy close contacts of recipients (0.02/100,000) and 12 (0.004/100,000) in recipients or contacts with immune deficiency conditions.

A large study conducted by the World Health Organisation in 1988 concluded that oral polio vaccine continued to be one of the safest vaccines in use. The risk of vaccine-associated polio was less than one per million vaccinees[13].

CONCLUSION

Current recommendations balance the scientific evidence of benefits, costs and risks. Vaccines used in NSW are safe — both in their own right and in the light of the diseases that they prevent. The benefits of immunisation are substantial — both to the individual child and to the community.

The benefits of the existing immunisation program can be preserved only if immunisation levels are maintained or improved.

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BID TO REDUCE BREAST CANCER DEATHS

Women in NSW aged 50 to 69 years are to be encouraged to have a mammogram every two years, with the aim of reducing breast cancer deaths by up to 30 per cent.

This follows an agreement in principle by Australia's Health Ministers last year that a national mammographic screening program should be implemented.

The outcomes of pilot mammographic screening projects in NSW show that it is possible to match the results of similar overseas trials in which many women's lives were saved.

However, it is important to note that none of the countries which conducted successful trials, such as Sweden and the UK, have fully developed national screening programmes in place [1,2].

While the results of NSW pilot projects have been encouraging, significant gaps in infrastructure, professional training, planning and consensus remain. Even if NSW had all the resources needed to expand screening throughout the State, an essential ingredient would still be missing. That is the ability to attract at least 70% of the target population of women. There are practical problems in using electoral rolls, ethical difficulties in using Health Insurance Commission lists, and it would take time to develop strategies to involve women in screening.

The cost effectiveness of the screening programme will be put at risk if the goal of reducing overall deaths from breast cancer is reduced to earlier diagnosis only for the highly motivated.

The NSW Health Minister, Mr Peter Collins, says screening will be expanded progressively from the existing pilot projects. This was the advice to the Minister from the Ministerial Advisory Committee on Mammographic Screening. The advice to the Australian Health Ministers' Advisory Council (AHMAC) from its Breast Cancer Screening Evaluation Steering Committee was that a national programme should be implemented progressively over the next five years to mid-1995.

Calls for an immediate Medicare benefit for screening mammography have lost ground following closer consideration of what is involved in an effective screening programme. Such a move would have led to a haphazard and expensive system lacking organisation, uniform standards and quality assurance, which could have discriminated against lower income women.

Instead, the national programme will be jointly funded by the Commonwealth, States and Territories, with screening and the full assessment process, including surgical biopsy, to be free. The hazards of a market-place approach to mammographic screening were highlighted in a recent American study published in the *Annals of Internal Medicine*. It revealed almost a four times over-supply of mammography equipment, with the consequent risk of low utilisation rates, higher charges and lower quality standards[3].

To co-ordinate the development of the Australian programme, a national breast cancer screening advisory committee and a national breast cancer screening co-ordination unit will be set up. NSW and the other States are also setting up screening co-ordination units.

The aim is to develop a system in which a high proportion of women in the target age group will be screened extremely well. This will fulfil the essential criterion of effective screening — a reduction in mortality from breast cancer.

Screening women ad hoc can fail to make much of an impression on breast cancer deaths for a number of reasons:

- early breast cancers may be missed because of technical or interpreting deficiencies;
- the cancers discovered may already be advanced beyond cure;
- they may be less aggressive tumours which would have been cured if diagnosed later;
- the treatment given may be inadequate.

Mammographic screening in NSW will spread out from two recently accredited assessment centres — the Rachel Forster Hospital in Sydney and the Mater Misericordiae Hospital in Waratah, Newcastle. These two hospitals are the headquarters of the Central Sydney Area Health Service mammographic screening pilot project and the Hunter Area Health Service pilot project respectively.

These two centres will eventually obtain additional screening units to increase their throughput. The Rachel Forster Centre, which had been operating one mobile unit, commissioned a second mobile unit in December, doubling its screening capacity. The Mater centre expects to have a second mobile unit in service this month.

The Rachel Forster Centre started operation in March 1988 and has so far screened about 16,000 women, though not all of them are among the 43,000 in the target age group for the pilot of 45-70 years. In some areas, up to 45 per cent of the target population has been screened but, overall, the figure is more like 15 per cent.

Continued on page 45 ►

Bid to Reduce Breast Cancer Deaths

► Continued from page 44

During the first 18 months of screening at the Rachel Forster Centre, 51 cancers were diagnosed for a cancer detection rate of seven per 1000 women screened, and about the same rate has been maintained.

The recall rate has fallen from 11.2 per cent to about 6 per cent, reflecting the growing experience of the projects' radiologists. The benign to malignant biopsy ratio has been maintained at about 0.9:1, a very satisfactory figure. About 62 per cent of the cancers detected have been impalpable to the examining surgeon and only about 20% of women diagnosed have had axillary node involvement.

The Mater centre, which has focused on women aged 40 and over, started screening in January 1989 and, by the end of December 1990, had screened 9923.

Screening was impeded by the Newcastle earthquake, but statistics for the 12 months of 1990 show a cancer detection rate of 7.8 per 1000 women screened in the 50-69 age group and 9.9 per 1000 in the 70-and-over group. In the 40-49 age group, the detection rate was only 1.6 per 1000 screened.

The recall rate was 13% and the benign to malignant biopsy ratio was 2.8 to one.

These trials highlight the important role of assessment centres in screening programmes. As is emphasised in the model for the expansion of screening in NSW, the assessment centre is responsible not only for determining who among the 5-10 per cent of women with abnormal mammograms actually has breast cancer, but also for maintaining a high quality of service throughout the screening system. It must conduct random reviews of screening films from screening units associated with it to ensure they are technically adequate and that reporting on them is up to standard.

In bringing together the team of specialists required to reach a breast cancer diagnosis without too high a cost in benign biopsies, it must also give confidence to the women with breast cancer and be non-threatening to the greater number of women who do not have the disease.

Eventually, there will be between 5-10 assessment centres in NSW, each servicing 3-5 screening units, providing a network covering the whole State. Screening units may only be developed in association with an assessment centre. They can be in either the public or private sectors. The dedicated equipment which produces high-quality breast X-rays for a minimal radiation dose is largely in private hands in NSW, 70 such machines being in private radiological practices at last count.

Some 50 multidisciplinary groups have considered establishing assessment centres in NSW. The Ministerial Advisory Committee, which called for the expressions of interest, narrowed the field to 22 and forwarded submissions from these applicants to Mr Collins.

One issue remains unresolved — whether women aged 40-49 should be screened. The advice to AHMAC from its screening committee was that screening should be made available and publicised to women aged over 40 years, but that recruitment strategies should target women aged 50-69. The evidence for the effectiveness of screening women aged 40-49 is still limited and indecisive. Until a stronger case can be made out, offering screening to these younger women would seem unwarranted, especially as they would need to present for screening at two-yearly intervals for up to 30 years.

As the programme moves out of trial mode into general screening, aspects of infrastructure and recruitment must be urgently addressed.

The NSW Central Cancer Registry is setting up a screening register to record the results of each woman's screening mammogram, the assessment of screening-detected abnormalities and of any treatment arising from that assessment.

The Cancer Council's Cancer Education Research Project (CERP), within the University of Newcastle, is looking at ways of encouraging women to take part in screening. CERP has been measuring the effect of such strategies as obtaining GPs' co-operation in inviting women to screening, and motivating local communities to encourage women to participate[4].

Researchers in Sydney University's Department of Public Health have also been looking at methods of attracting women to screening. In a recent paper in *Community Health Studies*, Associate Professor Les Irwig, Dr Deborah Turnbull and Dr Marilyn McMurchie, reported that 32 per cent of women who received a letter from their GP inviting them to be screened in a pilot project subsequently had a breast X-ray, compared with 7 per cent of women attending the same practice who were not invited[5].

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LONG INCUBATION FOR RABIES

Recent case reports from the US and Sydney show that rabies may occasionally have a very long incubation period (2-19 years after exposure). Therefore, it may occur in immigrants from endemic areas such as South East Asia years after immigration and should be considered in the differential diagnosis of encephalitis in these patients.

Rabies is usually fatal (three known survivors had vaccine). There is no effective therapy and diagnosis is usually established postmortem. Antemortem diagnosis is important to prevent unnecessary investigations and treatment and also possible nosocomial transmission.

It is not generally known that the most rapid way to diagnose rabies antemortem is to examine a skin biopsy from the nape of the neck for rabies antigens by immunofluorescence and process saliva for virus isolation in neuroblastoma cells (or mice).

In the immunofluorescence test, a full-thickness, 0.5cm diameter skin biopsy is taken from just above the hairline, avoiding excessive infiltration of the specimen with local anaesthetic. It should be frozen at −70°C while awaiting transport for testing. Sensitivities and specifications of the saliva and skin tests are as follows.

	Sensitivity	Specificity
Virus isolation from saliva	35-55% (decreasing with duration of illness)	100%
Rabies antigen in skin biopsy	50-94% (increase with duration)	100%

In patients who have not been immunised, serum antibody detection may also be useful in the second week after onset of symptoms. Brain biopsy from the cortex is not usually helpful.

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TABLE 1

INFECTIOUS DISEASE NOTIFICATIONS, NSW
To end of April, 1991

CONDITION	Number of Cases Notified			
	Period		Cumulative	
	April 1990	April 1991	April 1990	April 1991
Acute viral hepatitis	39	18	119	265
AIDS	24	–	124	‡52
Arboviral infection (NOS)	28	17	64	100
Brucellosis	–	–	2	–
Cholera	1	–	1	–
Diphtheria	–	–	–	–
Foodborne illness	N/A	38	N/A	93
Gastroenteritis	N/A	–	N/A	12
Gonorrhoea	30	5	115	55
Haemophilus influenza inf.	N/A	4	N/A	8
HIV	N/A	–	‡448	‡216
Hydatid disease	–	–	–	–
Legionnaires' disease	–	–	10	8
Leprosy	1	–	1	–
Leptospirosis	1	–	13	12
Listeriosis	–	–	–	–
Malaria	18	–	53	6
Measles	3	3	10	47
Meningococcal infection	4	1	11	14
Mumps	N/A	–	N/A	1
Mycobacterial infection (NOS)	22	1	124	21
Pertussis	15	1	83	11
Plague	–	–	–	–
Poliomyelitis	–	–	–	–
Q fever	17	2	44	22
Rubella	N/A	–	–	2
Salmonella infection	159	8	494	399
Syphilis	24	8	70	130
Tetanus	–	–	–	–
Typhoid & paratyphoid	1	1	9	30
Typhus	–	–	–	–
Viral haemorrhagic fever	–	–	–	–
Yellow fever	–	–	–	–

‡ Data January-March only

Continued on page 47 ►

INFECTIOUS DISEASES

Notifications received by Epidemiology and Health Services Evaluation Branch for 1991 to the end of April include:

- Fifty-two cases of AIDS. All but three were in residents of metropolitan Sydney at the time of diagnosis. A high rate of notifications has been received from the Eastern Sydney Area at a rate of 28.5/100,000/year. The State average is 3.6/100,000/yr.
- Staff from the State HIV Reference Laboratories have reported new cases of HIV infection in all but two Health Regions. The State average is 15.2/100,000/yr. This compares with a rate of 31.4/100,000/yr based on similar data for 1990. Notifications for 100 of the total HIV infection (45%) cannot be allocated to a specific AHS/Region. Epidemiology Branch is addressing the issue of data quality in collaboration with the Reference Laboratories.
- Two Regions report high rates of syphilis — North Coast (27.3/100,000/yr) and Orana & Far West (4.1/100,000/yr). The rate for the State is 2.3/100,000/yr. The reported rate for the United States is 16.0/100,000/yr.
- Rubella has been notified by the staff of two Public Health Units — Hunter and Western Sector. Epidemiology Branch alerts the community that in spite of the successes of the schoolgirl immunisation program, and the initiation of universal immunisation against rubella in 1989, the virus still circulates in the community. The Centers for Disease Control report a resurgence of both rubella and congenital rubella syndrome in the United States (MMWR 1991;40:93-99).
- Q Fever continues to be notified by the staff of four Regional PHUs — New England, North Coast, Central West and Orana & Far West. During May the Epidemiology Branch will initiate steps that it hopes will lead to a Q Fever immunisation program in NSW.
- Malaria notifications have fallen significantly for this reporting period, compared with the same period in 1990. Concerted efforts are being made by the NSW Health Department to raise awareness about health risks associated with overseas travel.

Tabulations for the month of April refer to notifications received from the following Public Health Units on the Infectious Diseases Database System (IDDS), up to the following dates:

PUBLIC HEALTH UNIT	DATE
Eastern Sydney	April 24
South Western Sydney	April 29
Western Sector*	April 24
North Coast Region	April 24
New England Region	April 23
South West Region	April 24

*Western Sydney and Wentworth AHS

TABLE 2

TOTAL CONFIRMED HIV-POSITIVE CASES BY RISK GROUP AND SEX, CUMULATIVE TO MARCH 31, 1991*

Risk group	Male	Female	Transexual	Unknown	Total
Homosexual/ bisexual	5413	25	1	180	5619
Heterosexual	132	74	1	2	209
Injecting drug user (IDU)	174	48	0	16	238
Homosexual/ bisexual + IDU	106	6	0	4	116
Heterosexual + IDU	21	19	0	2	42
Homosexual + transfusion	2	0	0	0	2
Transfusion	57	41	0	2	100
Haemophilia	53	0	0	0	53
Vertical transmission	11	6	0	4	21
Specified (NEC)	65	11	0	18	94
Unknown	4127	231	1	1980	6339
TOTAL	10161	461	3	2208	12833

* Westmead & Prince of Wales Hospital data to 31/3/91; previous positives excluded Royal Prince Alfred Hospital data 1/1/91 to 31/3/91; previous positives excluded St Vincent's Hospital data to 31/1/91; previous positives not excluded

Continued on page 48 ►

TABLE 3

INFECTIOUS DISEASE NOTIFICATIONS, BY HEALTH AREA & REGION, FOR MONTH OF APRIL, 1991

DISEASE	CSA	SSA	ESA	SWS	WSA	WEN	NSA	CCA	ILL	HUN	NCR	NER	OFR	CWR	SWR	SER	OTH	TOTAL
Acute viral hepatitis	–	–	6	3	3	1	–	–	–	–	1	3	–	–	1	–	–	18
Arboviral inf.	–	–	–	–	–	–	–	–	–	–	2	14	–	–	1	–	–	17
Foodborne illness	–	–	29	1	–	–	–	–	–	–	–	1	–	–	7	–	–	38
Gonorrhoea	–	–	2	3	–	–	–	–	–	–	–	–	–	–	–	–	–	5
H Influenzae infection	–	–	–	–	1	2	–	–	–	–	–	–	–	–	1	–	–	4
Measles	–	–	–	2	–	–	–	–	–	–	1	–	–	–	–	–	–	3
Meningococcal inf.	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
Mycobacterial inf.	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Pertussis	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Q fever	–	–	–	1	–	–	–	–	–	–	–	1	–	–	–	–	–	2
Salmonella infection	–	–	–	–	2	4	–	–	–	–	2	–	–	–	–	–	–	8
Syphilis	–	–	–	–	–	–	–	–	–	–	7	1	–	–	–	–	–	8
Typhoid & paratyphoid	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1

TABLE 4

INFECTIOUS DISEASE NOTIFICATIONS, BY HEALTH AREA & REGION, FOR PERIOD JANUARY 1 TO APRIL 30, 1991

DISEASE	CSA	SSA	ESA	SWS	WSA	WEN	NSA	CCA	ILL	HUN	NCR	NER	OFR	CWR	SWR	SER	OTH	U/K	TOTAL
Acute viral hepatitis	52	6	30	9	52	8	22	1	2	10	29	23	11	–	5	4	1	–	265
AIDS*	7	2	23	3	4	2	8	–	–	–	2	–	–	–	–	–	–	1	52
Arboviral infection	–	–	1	–	–	–	–	–	–	–	13	49	20	4	12	1	–	–	100
Foodborne illness	–	–	52	–	8	3	–	–	–	1	–	8	–	–	20	1	–	–	93
Gastroenteritis (inst)	–	–	–	1	5	5	–	–	–	–	–	1	–	–	–	–	–	–	12
Gonorrhoea	–	1	31	10	–	–	2	–	1	–	6	–	3	–	1	–	–	–	55
Haemophilus influenzae inf.	–	–	–	–	1	3	–	–	–	–	–	–	–	–	4	–	–	–	8
HIV*	17	3	46	7	14	1	7	1	1	10	6	–	1	1	–	1	1	99	216
Legionnaires' disease	–	–	–	–	3	2	1	–	–	1	–	–	–	–	–	–	1	–	8
Leptospirosis	–	–	–	–	–	–	1	–	–	5	1	–	1	–	1	–	3	–	12
Malaria	–	–	–	–	1	–	3	–	–	1	1	–	–	–	–	–	–	–	6
Measles	2	–	–	–	2	1	5	–	1	18	14	2	–	–	–	2	–	–	47
Meningococcal inf.	–	1	–	–	–	–	1	–	–	3	7	–	–	–	–	2	–	–	14
Mumps	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Mycobacterial inf.	–	1	–	1	5	1	5	–	2	–	3	–	–	3	–	–	–	–	21
Pertussis	–	–	1	1	2	–	1	–	–	1	3	–	2	–	–	–	–	–	11
Q fever	–	–	–	–	–	–	–	–	–	–	7	7	5	3	–	–	–	–	22
Rubella	–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	–	–	2
Salmonella inf.	26	35	12	52	48	32	40	8	16	15	44	24	11	12	7	8	9	–	399
Syphilis	6	3	26	14	10	1	5	1	1	2	31	6	19	4	1	–	–	–	130
Tetanus	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1
Typhoid and paratyphoid	5	4	2	–	–	5	4	1	1	2	–	2	1	–	–	–	3	–	30

* January-March only

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, NCR North Coast Health Region, NER New England Health Region, OFR Orana & Far West Health Region, CWR Central West Health Region, SWR South West Health Region, SER South East Health Region, OTH Interstate/Overseas, U/K Unknown, NOS Not Otherwise Stated.

Footnote: The data 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.

NEWS AND COMMENT

New Nosology Centre

The Australian Institute of Health is inviting interested organisations to submit proposals for establishment of a National Nosology Reference Centre as an external unit of the Institute.

A primary role of the Centre will be the introduction of the Tenth Revision of the International Classification of Diseases (ICD) into Australia from 1993, including preparation for use of that revision. It will be responsible for liaison with the World Health Organisation (WHO), the Australian Bureau of Statistics (ABS) and State and Territory Health Authorities in relation to this revision.

The Institute will make some funds available to the successful organisation.

The initial grant will be for three years, renewable upon a favourable review of the success of the Centre in meeting its goals and objectives.

Proposals should be sent to Dr L R Smith, Director, Australian Institute of Health, GPO Box 570, Canberra ACT 2601, by Friday, 19 April, 1991.

For further information, please contact Dr John Donovan on (06) 243 5035.

Concern Over Bowel Cancer Tests

The Gastroenterological Society of Australia and the Royal Australasian College of Physicians recommend that population mass-screening of individuals for bowel cancer should not be undertaken because of test unreliability.

However, a programme of repeated screening for the 10-15 per cent of individuals who are at higher-than-average risk of bowel cancer is practical and medically justifiable.

Bowel cancer can be cured if it is detected early enough, and this has stimulated the attempts to screen apparently healthy people to detect cancers in the early and potentially curable stages.

At present, the only practical way to do this in large populations is to examine the faeces (bowel actions) for microscopic amounts of blood using simple chemical tests.

However, the most widely used tests currently available are not sufficiently sensitive for cancer. Nor are they sufficiently specific, since there are other, non-malignant causes of blood in bowel actions, and interaction with diet, vitamins and medications can give misleading positive results. There will thus be *false-negative* results, where blood has not been detected even though a cancer is present, and *false-positive* results, which lead to substantial and unnecessary costs of more detailed follow-up investigations aimed at confirming the presence or absence of cancer.

As yet, there is no evidence that these simple tests for mass screening of healthy individuals lead to a reduction in the frequency of suffering and death from the cancer within the community.

The use of "home kits" for the testing of faeces for microscopic amounts of blood is also discouraged. Test results are not simple to read accurately and should only be read by trained personnel.

There is optimism for the future of mass screening for bowel cancer. Prototypes of new tests for blood in faeces are being evaluated. These new tests are likely to prove well suited for mass screening, thereby making such programmes justifiable on medical grounds.

Further Reading

Wagner, J. "Costs and effectiveness of colorectal cancer screening in the elderly." *JAMA*, Dec 5, 1990-Vol 264, No 21.