FIGURE 1

INFLUENZA-LIKE ILLNESS

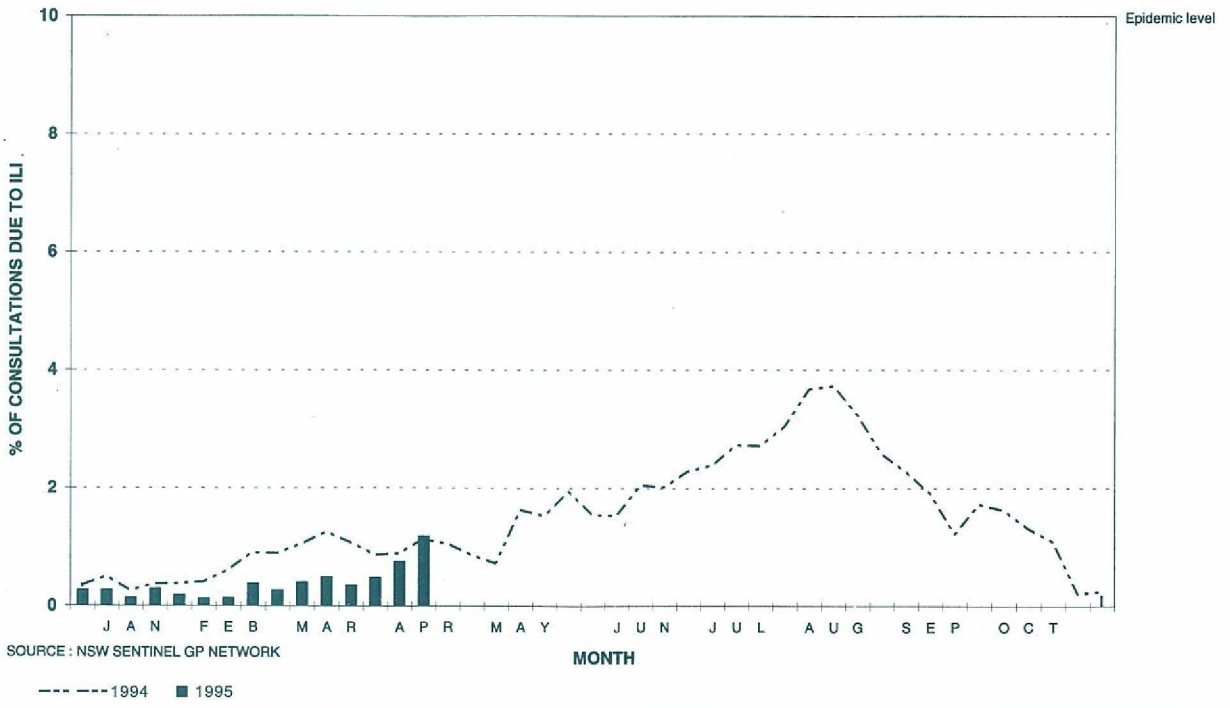
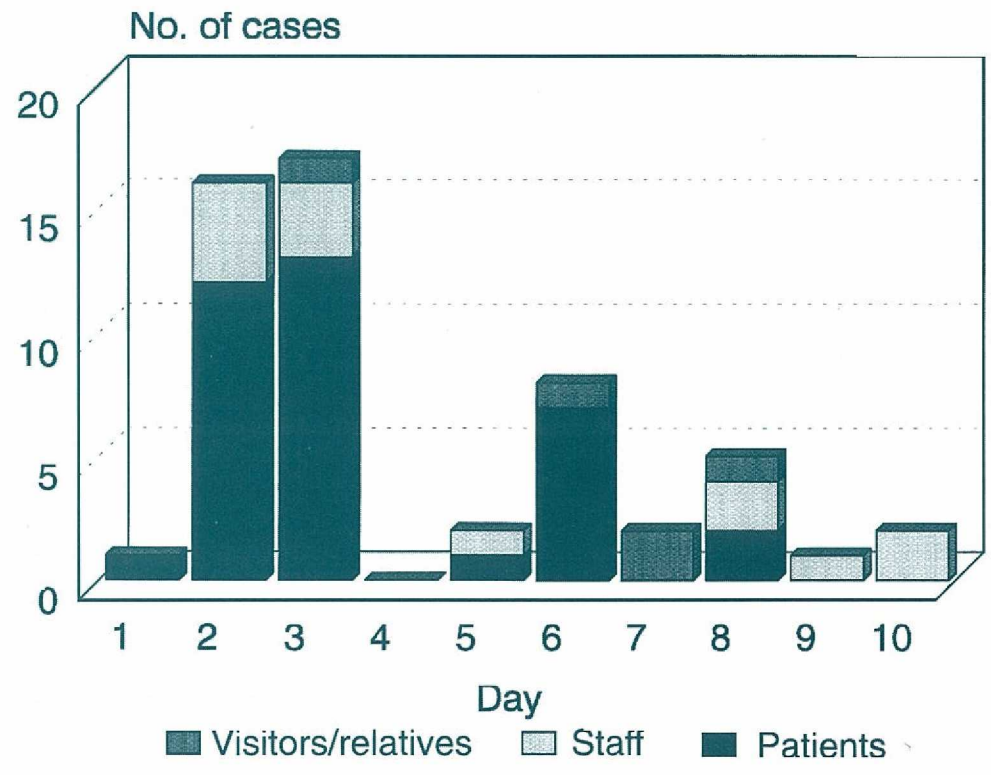


FIGURE 2

GASTROENTERITIS IN A NURSING HOME



INFECTIOUS DISEASES

EBOLA FEVER OUTBREAK IN ZAIRE

The World Health Organisation (WHO) in Geneva and the authorities in Zaire have confirmed that an outbreak of viral haemorrhagic fever (VHF) in the town of Kikwit in Bandundu province, in southern Zaire, is due to Ebola virus. It appears that this outbreak began in January 1995 although the WHO did not become involved until May. The risk to travellers in the infected area is considered to be small and the risk of a case being imported into Australia is considered to be remote.

Infection is transmitted by close contact with the body fluids of an infected person. Ebola fever has an incubation period of up to three weeks (usually one-two weeks). It presents as a prostrating fever, with headache and sore throat, and develops rapidly with diarrhoea and a rash which resembles that of measles.

Haemorrhagic features include bloody diarrhoea, haemoptysis, spontaneous bruising, and haematemesis. Haemorrhagic manifestations with presumptive disseminated intravascular coagulation usually occur in fatal cases. In reported outbreaks, 50-90 per cent of cases have been fatal.

Patients who survive tend to excrete virus for some days or weeks after the fever resolves, but eventually recover completely. The natural reservoir of infection is unknown. Person-to-person spread is generally associated with direct contact with blood, other body fluids and contaminated needles. Aerosol transmission has not been described and is considered to be unlikely.

For the duration of the outbreak travellers who, on their return to Australia and within 21 days of leaving Zaire, present with fever are advised to contact a doctor promptly. They are, however, much more likely to have malaria or dysentery than a VHF.

The management of a patient with an unexplained fever will be determined by the level of suspicion of VHF. All hospitals in NSW have reviewed their capacity to handle such cases by implementing the *Contingency Plan for Cases of Suspected Quarantinable Diseases including Viral Haemorrhagic Fevers.*

Infectious disease physicians and consultants in communicable disease control are requested to report cases about whom they have a moderate or strong level of suspicion of VHF to Professor Tania Sorrell, the Medical Adviser in Quarantine on (02) 633 7191.

For any patient who has been in Zaire since the outbreak began, the levels of suspicion of VHF are classified as follows:

Minimal: febrile patient who left Zaire within the past 21 days but has not been in the affected area (southern half of Bandundu province).

Moderate: febrile patient who left the affected area (or any other area in which Ebola virus infection has been confirmed) within the past 21 days.

Strong: febrile patient who left an affected area in Zaire within the past 21 days **and**

- nursed a patient with confirmed or highly suspected Ebola virus infection; or
- was a contact of a virologically confirmed case; or
- was a laboratory worker who has handled Ebola virus; or
- was originally classified in the minimal or moderate suspicion categories but whose illness is consistent with VHF and other possible causes have been eliminated; or
- was originally classified as minimal or moderate suspicion but develops haemorrhagic features, severe prostration, or shock.

No case of VHF has ever been diagnosed or notified in NSW. A possible case that presented in 1993 in a visitor from Africa was diagnosed as yellow fever.

Outbreaks of Ebola virus infection occurred in the equatorial provinces of Sudan and Zaire in 1976, and in southern Sudan in 1979. In 1989 an outbreak among monkeys imported into the United States from the Philippines was caused by an Ebola virus but was not associated with human disease.

INFLUENZA SURVEILLANCE

Influenza activity in NSW during April has remained low since surveillance began at the beginning of the month (Figure 1). Surveillance data provided by sentinel general practices representing about 50 doctors and 6,700 consultations a week were reported through six PHUs. The consultation rate for influenza-like illness per 100 patient encounters showed a slight increase in April. The rates for the first two weeks of April were 0.8 per cent and 1.2 per cent, respectively. The highest rate – 1.5 per cent – occurred in Eastern Sydney in the first week of April. School absentee rates were reported by three PHUs and covered five schools and about 3,000 pupils. The rate for the last week of April was 2.8 per cent.

Up to the first week of May laboratories had reported 21 samples as positive for influenza A serology and nine for influenza B. The Institute of Clinical Pathology and Medical Research (ICPMR) at Westmead Hospital reported one isolation of influenza A(H1N1) similar to A/Texas/36/91-like strain in February and one influenza B early in January. No viral isolates have been reported since March.

GASTROENTERITIS OUTBREAK IN A NURSING HOME

Northern Sydney PHU has reported almost 70 per cent of the State's notifications of gastroenteritis in an institution this year (Tables 6 and 10). This is due to an outbreak of gastroenteritis in a nursing home in April. Over a 10-day period 54 cases were diagnosed; 36 were residents, 13 staff and five relatives (not all these cases appear in the tables yet). Most cases presented on the second and third days of the outbreak (Figure 2). In most cases the illness resolved within 24 hours, although some individuals reported mild diarrhoea for up to four days. Although no organisms were isolated from faecal samples, the outbreak was consistent with a viral agent transmitted through person-to-person contact and via contaminated surfaces.

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Infectious diseases

► *Continued from page 43*

An environmental inspection identified the following areas that required attention:

(1) the lack of easily accessible hand-washing facilities for staff providing direct patient care; and

(2) the poor quality of gloves provided for direct patient care.

Physiological changes associated with the ageing process render the aged person more susceptible to acquire and transmit gastrointestinal infections. These factors include incontinence and the difficulty in maintaining personal hygiene.

This outbreak has highlighted the need for attention to infection control procedures in nursing homes. Staff, who may have had no formal health training, should receive training in relevant infection control procedures. Adequate facilities for hand washing should also be provided. The PHU should be advised promptly of any outbreak of gastroenteritis in any institution, and visiting general practitioners informed of cases of communicable disease in residents.

BARMAH FOREST VIRUS

The South East Public Health Unit has reported the largest cluster of Barmah Forest Virus (BFV) infection ever recorded[1]. Eighty cases from the Batemans Bay area were notified between February and April 1995. The Mid North Coast and Richmond Districts have also reported relatively high numbers of BFV infections this year, with 22 and 12 cases respectively.

BFV is an arbovirus. Like all arbovirus it is transmitted by arthropods (e.g. ticks and mosquitoes), and it causes an illness characterised by fever, malaise and a rash. It was first isolated in Victoria in 1974. Only 200 cases have ever been notified in NSW, and 127 of these were in 1995. The outbreak was associated with high rainfall in December 1994 and high mosquito numbers in the early part of 1995.

In the overall pattern of arbovirus infections in NSW, Ross River Virus (RRV) infection is usually much more common than BFV infection. Between 1992 and 1994 RRV accounted for 89 per cent of arboviral infections (Figure 3). So far this year, BFV infections have accounted for 52 per cent of arboviral notifications (Figure 4). The largest recent arbovirus epidemic occurred in 1993, when there were 565 notifications of RRV infection in the south-west and western parts of NSW. RRV infection usually has a more severe clinical picture than BFV, with arthritis (which may last for months) and a maculopapular rash. Both RRV and BFV are self-limiting illnesses.

FIGURE 3

ARBOVIRUS NOTIFICATIONS

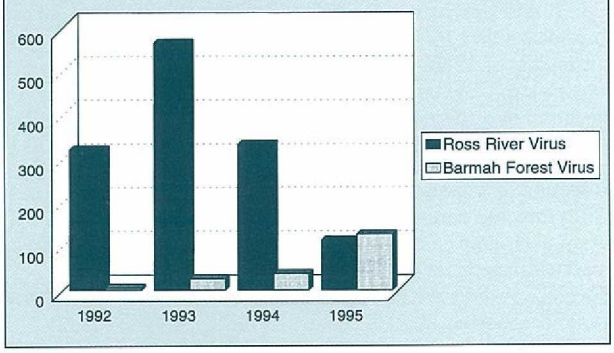
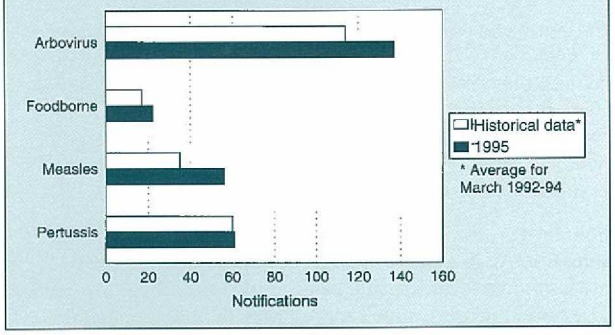


FIGURE 4

SELECTED INFECTIOUS DISEASES MARCH 1995 AND HISTORICAL DATA



1. Van Buynder P et al. *Communicable Diseases Intelligence*, 1995; 19(8):188-91.

GONOCOCCAL ISOLATE SURVEILLANCE, JANUARY-MARCH

One hundred and sixty-five gonococcal samples were referred to the Prince of Wales Hospital Gonococcal Reference Laboratory in this quarter. Of these, 163 remained viable for further examination. This was a slight increase on the 144 strains examined in the first quarter of 1994. The male:female ratio of infection was 10:1, once again an increase over both 1994 and recent quarters.

TABLE 5

INFECTED SITES

Males		Females	
Urethra	118	Endocervix/vagina	14
Pharynx	18	Pharynx	0
Anus/rectum	14	Anus/rectum	0
		Blood	1
Total	**150**	**Total**	**15**

Definition
Isolate: a culture of organisms grown from a single colony
Strain: subtype or phenotype within a species

Antibiotic sensitivity patterns

Penicillins (including penicillin, ampicillin and amoxycillin)
Forty-eight gonococcal isolates (29.4 per cent) were penicillin resistant, either by virtue of lactamase production (penicillinase producing *Neisseria gonorrhoea* or PPNG) – 21 isolates – or by chromosomally mediated mechanisms – 27 isolates. This pattern of resistance has been present for some time. The high proportion of isolates resistant to penicillins means this group of antibiotics is an inappropriate therapy for gonorrhoea in NSW.

Ceftriaxone
All isolates examined in this quarter were sensitive to this injectable cephalosporin which is very active against gonococci. An oral third generation cephalosporin, cephodoxime, has recently been released in Australia. The likely outcome of therapy with this antibiotic can be inferred from *in vitro* sensitivity data on ceftriaxone.

Spectinomycin
All gonococci strains tested were susceptible *in vitro* to this injectable antibiotic.

Quinolones (Ciprofloxacin)
Concerns are arising over the appearance of gonococcal isolates showing resistance to oral quinolone antibiotics. Twelve isolates (7.3 per cent) had some level of resistance in this quarter. Although strains showing some form of quinolone resistance have been present in NSW since 1984, the recommended treatment regimen of a single dose of 500mg of ciprofloxacin has been sufficient to cure nearly all infections encountered to date. However, in the last quarter of 1994 three isolates from two patients had very high levels of quinolone resistance and those infected with these types of gonococci usually did not respond to quinolone therapy.

WHO sources indicate that quinolone resistance is rapidly increasing in overseas areas frequently visited by Australians (Japan, South-East Asia and Africa). Continued monitoring of resistance in this group of antibiotics is essential, especially in patients who have recently entered or returned to Australia. Strains of gonococcus from individuals whose treatment has apparently failed need close examination.

Tetracyclines
Tetracyclines are not recommended for treatment of gonorrhoea in NSW. Some of the chromosomal mechanisms that increase resistance to penicillins also increase resistance to the tetracycline group. Consequently, where high levels of chromosomal resistance to penicillin exist, tetracycline resistance will also be common. In addition, tetracyclines are not suitable for single-dose therapy. For these reasons, isolates are not routinely tested for chromosomal resistance to the tetracyclines, but the minimum inhibitory concentrations (MICs) for the tetracyclines are periodically examined. In a sample of more than 100 isolates recently tested for sensitivity to the tetracyclines, more than a quarter had a significant degree of chromosomal resistance (MICs of 2mg/l or more).

An interesting form of plasmid-mediated high-level tetracycline resistance (tetracycline resistant *Neisseria gonorrhoea* – TRNG) has also emerged in the past decade and has spread throughout the world. Again some countries close to Australia, predominantly in Asia and Africa, have high levels of TRNG. Strains are therefore examined routinely for the presence of this high-level tetracycline resistance. In this quarter there were 13 isolates of TRNG from patients in NSW (8 per cent of the total), a substantial increase over the corresponding quarter in 1994. Ten of the 13 strains were PPNG also and six were of an IA (WI) serogroup. This serogroup is uncommon in NSW where the IB (WII/III) subgroup represents about 85 per cent of isolates.

TABLE 6

INFECTIOUS DISEASE NOTIFICATIONS FOR 1995 BY SELECTED MONTH OF ONSET FOR NOTIFICATIONS RECEIVED BY APRIL 30, 1995

Condition	Jan	Feb	Mar	Apr
Adverse event after immunisation	3	1	2	1
AIDS	25	19	20	7
Arboviral infection	19	28	137	30
Foodborne illness (NOS)	16	84	22	13
Gastroenteritis (instit.)	2	3	10	33
Gonorrhoea infection	31	34	30	15
H influenzae epiglottitis	–	–	1	2
H influenzae infection (NOS)	–	1	–	1
H influenzae meningitis	2	–	1	–
H influenzae septicaemia	–	1	2	–
Hepatitis A – acute viral	73	61	42	19
Hepatitis B – acute viral	1	2	8	4
Hepatitis B – chronic/carrier	49	38	35	15
Hepatitis B – unspecified	341	364	345	87
Hepatitis C – acute viral	–	9	2	–
Hepatitis C – unspecified	745	677	684	168
Hepatitis D – unspecified	1	4	–	1
Hydatid disease	–	–	3	–
Legionnaires' disease	16	6	7	1
Leptospirosis	1	–	–	1
Listeriosis	–	4	2	–
Malaria	9	1	2	1
Measles	96	48	56	18
Meningococcal infection (NOS)	3	1	2	2
Meningococcal meningitis	2	6	4	1
Meningococcal septicaemia	1	5	1	–
Mumps	2	–	–	–
Mycobacterial atypical	38	24	16	1
Mycobacterial infection (NOS)	10	6	9	1
Mycobacterial tuberculosis	34	10	12	1
Pertussis	82	54	61	18
Q fever	18	20	7	4
Rubella	9	13	6	2
Salmonella (NOS)	142	186	113	49
Salmonella infection	–	1	–	–
Syphilis infection	84	59	67	19
Tuberculosis – non active	–	7	3	1
Typhoid and paratyphoid	4	12	1	4
Vibrio infection (non cholera)	–	1	–	–

TABLE 7

SUMMARY OF NSW INFECTIOUS DISEASE NOTIFICATIONS APRIL 1995

Condition	Number of cases notified			
	Period		Cumulative	
	April 1994	April 1995	April 1994	April 1995
Adverse reaction	5	1	16	7
AIDS	67	7	171	71
Arboviral infection	60	30	240	214
Brucellosis	–	–	–	–
Cholera	–	–	–	–
Diphtheria	–	–	–	–
Foodborne illness (NOS)	64	13	100	135
Gastroenteritis (instit.)	48	33	69	48
Gonorrhoea	37	15	135	110
H influenzae epiglottitis	2	2	8	3
H influenzae B – meningitis	2	–	5	3
H influenzae B – septicaemia	2	–	5	–
H influenzae infection (NOS)	2	1	6	2
Hepatitis A	49	19	206	195
Hepatitis B	345	106	1,397	1,289
Hepatitis C	614	168	2,814	2,285
Hepatitis D	3	1	8	6
Hepatitis, acute viral (NOS)	–	–	2	–
HIV infection	38	29	171	158
Hydatid disease	–	1	3	3
Legionnaires' disease	12	1	24	30
Leprosy	–	–	–	–
Leptospirosis	1	1	8	2
Listeriosis	–	–	4	6
Malaria	14	1	83	13
Measles	15	18	274	218
Meningococcal meningitis	6	1	20	13
Meningococcal septicaemia	1	–	6	7
Meningococcal infection (NOS)	1	2	2	8
Mumps	1	–	2	2
Mycobacterial tuberculosis	29	1	150	57
Mycobacterial – atypical	33	1	186	79
Mycobacterial infection (NOS)	3	1	12	26
Pertussis	96	18	536	215
Plague	–	–	–	–
Poliomyelitis	–	–	–	–
Q fever	22	4	104	49
Rubella	3	2	45	30
Salmonella infection (NOS)	113	49	598	491
Syphilis	90	19	381	229
Tetanus	–	–	–	–
Typhoid and paratyphoid	3	4	13	21
Typhus	–	–	–	–
Viral haemorrhagic fevers	–	–	–	–
Yellow fever	–	–	–	–

TABLE 8

**INFECTIOUS DISEASE NOTIFICATIONS FOR 1995
BY PUBLIC HEALTH UNIT FOR NOTIFICATIONS RECEIVED BY APRIL 30, 1995**

Condition	CCA	CSA	CW	ESA	HUN	ILL	NC	ND	NSA	SE	SSA	SW	SWS	WEN	WN	WSA	Total
AIDS	–	18	–	23	4	–	7	–	7	–	7	–	2	2	–	1	71
Arboviral infection	3	2	–	4	3	9	75	20	1	79	2	9	–	1	6	–	214
Gonorrhoea infection	2	16	5	44	2	1	8	5	3	3	5	–	4	1	4	7	110
Hepatitis B – acute viral	–	3	–	2	–	–	1	2	–	1	1	–	–	1	4	–	15
Hepatitis B – chronic/carrier	8	–	5	74	–	–	2	5	–	–	1	–	–	4	4	34	137
Hepatitis B – unspecified	6	123	5	22	27	6	15	3	151	5	183	7	399	3	4	178	1,137
Hepatitis C – acute viral	–	–	–	1	–	–	–	–	–	–	–	–	–	2	7	1	11
Hepatitis C – unspecified	57	260	101	384	158	25	241	48	186	65	154	73	251	52	8	211	2,274
Hepatitis D – unspecified	–	–	–	–	–	–	3	–	–	–	–	–	3	–	–	–	6
Hydatid disease	–	–	1	1	–	–	–	–	1	–	–	–	–	–	–	–	3
Legionnaires' disease	–	1	–	1	6	1	–	1	4	–	–	–	–	1	–	15	30
Leptospirosis	–	–	–	–	1	–	–	1	–	–	–	–	–	–	–	–	2
Malaria	2	–	–	1	2	–	1	–	1	–	–	1	1	1	–	3	13
Meningococcal infection (NOS)	1	–	–	1	1	–	2	–	–	–	2	–	1	–	–	–	8
Meningococcal meningitis	1	1	1	–	2	1	1	1	1	1	2	–	1	–	–	–	13
Meningococcal septicaemia	–	2	–	–	5	–	–	–	–	–	–	–	–	–	–	–	7
Mycobacterial atypical	–	13	1	21	8	–	4	1	5	1	5	–	13	1	6	–	79
Mycobacterial infection (NOS)	3	1	–	–	2	–	1	–	8	–	–	–	11	–	–	–	26
Mycobacterial tuberculosis	1	6	–	1	2	–	1	1	13	1	12	–	6	–	1	12	57
Q fever	–	–	3	–	5	1	5	15	–	–	–	–	–	–	19	1	49
Syphilis	2	29	5	53	7	2	16	14	11	1	15	1	32	6	19	16	229

TABLE 9

**VACCINE PREVENTABLE AND RELATED CONDITIONS, NOTIFICATIONS FOR 1995
BY PUBLIC HEALTH UNIT FOR NOTIFICATIONS RECEIVED BY APRIL 30, 1995**

Condition	CCA	CSA	CW	ESA	HUN	ILL	NC	ND	NSA	SE	SSA	SW	SWS	WEN	WN	WSA	Total
Adverse event after immunisation	–	–	–	–	–	–	–	1	–	–	1	4	–	1	–	–	7
H. influenzae epiglottitis	–	–	–	1	–	–	1	–	–	–	1	–	–	–	–	–	3
H. influenzae infection (NOS)	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–	–	2
H. influenzae meningitis	–	1	–	–	–	–	1	–	–	–	–	–	–	–	–	1	3
H. influenzae septicaemia	–	–	–	–	1	–	–	–	–	–	1	–	–	–	–	1	3
Measles	6	14	1	33	27	18	8	22	9	4	12	4	15	26	–	19	218
Mumps	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1	2
Pertussis	9	8	5	11	10	7	39	2	26	4	12	21	8	21	4	28	215
Rubella	–	–	–	2	–	–	3	1	1	–	6	–	–	4	1	12	30

TABLE 10

**FOODBORNE INFECTIOUS DISEASE NOTIFICATIONS FOR 1995
BY PUBLIC HEALTH UNIT FOR NOTIFICATIONS RECEIVED BY APRIL 30, 1995**

Condition	CCA	CSA	CW	ESA	HUN	ILL	NC	ND	NSA	SE	SSA	SW	SWS	WEN	WN	WSA	Total
Foodborne illness (NOS)	10	9	–	–	55	–	3	1	–	–	–	5	28	–	10	14	135
Gastroenteritis (instit.)	–	10	–	–	2	–	–	–	33	–	–	–	–	–	–	3	48
Hepatitis A – acute viral	6	26	29	52	10	1	8	–	12	–	12	7	14	2	2	14	195
Listeriosis	–	1	1	1	–	–	–	–	1	1	–	–	–	–	–	1	6
Salmonella (NOS)	13	21	13	33	48	12	60	36	46	15	37	16	48	25	20	48	491
Typhoid and paratyphoid	–	1	–	6	–	–	1	–	2	–	4	–	3	1	–	3	21
Vibrio infection (non cholera)	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	1

FOODBORNE INFECTIOUS DISEASE

Hunter Public Health Unit has reported the largest number of incidents of foodborne illness (where two or more related cases are involved) this year (Table 10). Several small unrelated outbreaks contributed to 55 notifications, all of which have been resolved.