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New Zealand Public Health Surveillance Report

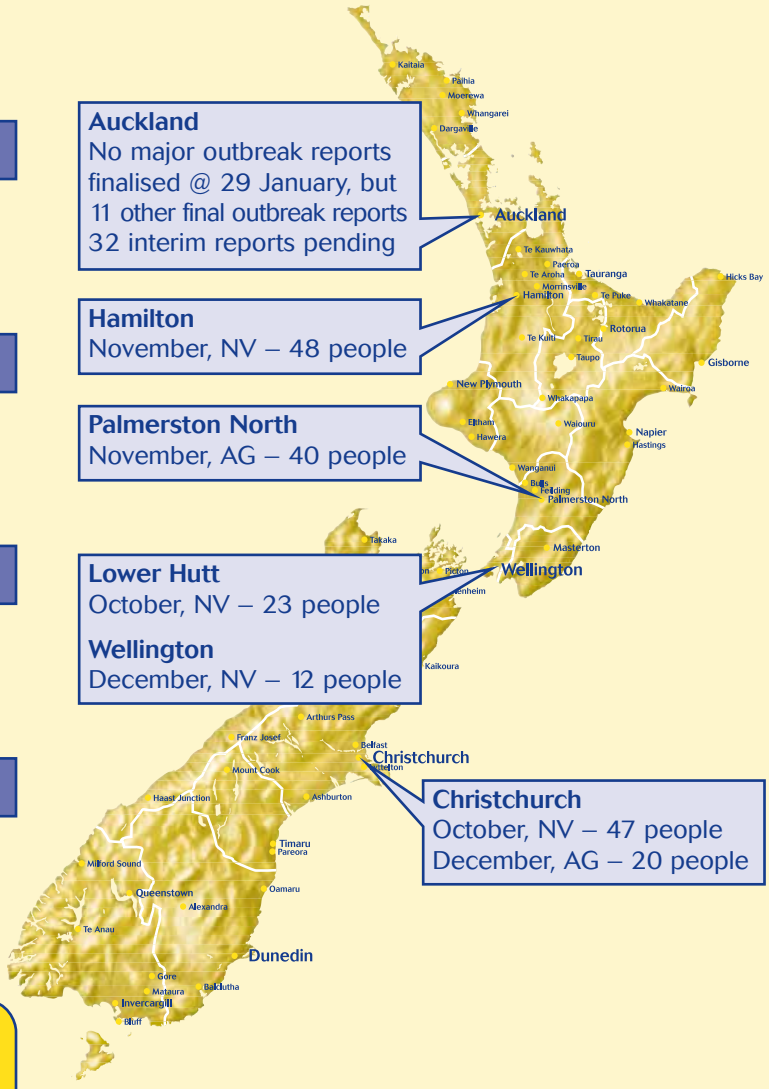
Summer 2004

Contents & Highlights

This Quarter's Largest Outbreaks

Note: As reported through the EpiSurv system at time of publication.

All outbreak reporting should be treated as provisional data. As of 29 January 2004, there were a total of 28 final outbreak reports and 39 interim outbreak reports for the quarter. The Auckland region is notable in that they have 32 outbreak reports with 'interim' status and 4 of these reports are currently associated with more than 80 cases.



NV = Norovirus
AG = Acute Gastroenteritis, Pathogen Unidentified

BREAKING NEWS

Now Notifiable – HPAI H5N1

From 12 February, human infections of Highly Pathogenic Avian Influenza, including H5N1, are notifiable in New Zealand. This is a precautionary measure. Notify suspected cases, from travel and exposure history, to your local Medical Officer of Health (see www.moh.govt.nz/birdflu and www.moh.govt.nz/pandemic).

1. Editorial

Severe Acute Respiratory Syndrome (SARS)

The rate of accrual of scientific knowledge worldwide on SARS has been staggering. Only nine weeks elapsed from the first description of the syndrome in mid-March 2003 to generation of the complete genome sequence of the causative coronavirus. This extraordinary achievement has been due to scientists and clinicians worldwide sharing information and expertise. Effective global communications, such as ProMed (www.promedmail.org) and accelerated publications in the Lancet (www.lancet.com) and other pre-eminent medical journals, also played their part. Data compiled in August 2003 indicated there had been 8422 cases of SARS worldwide across 29 countries resulting in 908 deaths (www.who.int/gb/EB_WHA/PDF/EB113/eeb11333.pdf). The mortality rate has been variously calculated as between 5% and 10%, rising to 50% in patients over 60 years of age.

SARS, as a newly-emerging disease, has presented many challenges to infectious disease specialists. Its ready transmissibility in hospitals, survival and transmission in the environment, the concept of "super spreaders", identification of the causative micro-organism and the reported inherent genetic mutability were all investigated within nine weeks of the initial outbreak being reported. In 1892 microbes smaller than bacteria were identified for the first time, and their role in infection proven. The subsequent characterization of viruses, culminating in the sequencing of entire viral genomes, has occurred only over the last few years. It is arguable that, for SARS, 111 years of science have been telescoped into nine weeks. However, many fundamental questions still remain to be answered including the length of time for which a person remains infectious and we await further developments with interest.

To date, there has been one confirmed probable case of SARS in New Zealand. Preparedness of the national healthcare system initially used the platform provided by the National Influenza Pandemic Plan. Advice has been sought from agencies worldwide including WHO and the Communicable Disease Network Australia, and diagnostic tools for SARS have had to be developed. The availability of a WHO-approved serological test will aid in future confirmation of infections. The recent re-emergence of SARS in China has highlighted the need to maintain an appropriate level of preparedness.

2. Notifiable Disease Surveillance

The following is a summary of disease notifications for the October through December quarter of 2003, and for the year-to-date (January through December 2003). Numbers or rates for the same period in the previous year are noted in brackets preceded by the year. The number of disease notifications reported for a quarter is always subject to change as there may be delays in cases being entered into the surveillance system. Rates are based on the cumulative total for the 12 months up to and including December 2003, expressed as notifications of disease per 100,000 people. A robust method of constructing 95% confidence intervals is used to determine 'statistically significant differences' [see Newcombe, R. G. and D. G. Altman. Proportions and their differences. In: *Statistics with Confidence*. 2000. BMJ Books. Bristol]. The National Surveillance data tables are available on www.surv.esr.cri.nz

VACCINE PREVENTABLE DISEASE

Haemophilus influenzae type b disease (Hib)

- *Notifications*: 1 case was notified in the quarter (2002, 0) with 13 year-to-date (2002, 3)
- *Current Rate*: 0.3 cases per 100,000 population (2002, 0.1)
- *Change in Rate*: statistically significant
- *Comment*: There were 8 notifications of children under the age of 2 years in 2003, and 2 deaths; isolates from 9 cases (7 from children) were received at ESR in 2003

Pertussis

- *Notifications*: 188 cases were notified in the quarter (2002, 287) with 590 year-to-date (2002, 1068)
- *Current Rate*: 15.8 cases per 100,000 population (2002, 28.6)
- *Change in Rate*: statistically significant

Measles

- *Notifications*: 46 cases were notified in the quarter (2002, 4) with 86 year-to-date (2002, 21)
- *Current Rate*: 2.3 cases per 100,000 population (2002, 0.6)
- *Change in Rate*: statistically significant
- *Comment*: a number of suspected cases of measles on the West Coast may not in fact be measles – an update will be provided in the next issue

INFECTIOUS RESPIRATORY DISEASES

Meningococcal Disease

- *Notifications*: 115 cases were notified in the quarter (2002, 103) with 546 year-to-date (2002, 555)
- *Current Rate*: 14.6 cases per 100,000 population (2002, 14.8)
- *Change in Rate*: not statistically significant
- *Comment*: 12 deaths were recorded in 2003, down from 17 deaths in 2002

Acute Rheumatic Fever

- *Notifications*: 20 cases were notified in the quarter (2002, 24) with 143 year-to-date (2002, 93)
- *Current Rate*: 3.8 cases per 100,000 population (2002, 2.5)
- *Change in Rate*: not statistically significant

Tuberculosis Infection

- *Notifications*: 125 cases were notified in the quarter (2002, 117) with 419 year-to-date (2002, 383)
- *Current Rate*: 11.2 cases per 100,000 population (2002, 10.2)
- *Change in Rate*: not statistically significant

ENTERIC INFECTIONS

Campylobacteriosis

- *Notifications*: 4460 cases were notified in the quarter (2002, 3477) with 14782 year-to-date (2002, 12494)
- *Current Rate*: 395.5 cases per 100,000 population (2002, 334.3)
- *Change in Rate*: statistically significant

Salmonellosis

- *Notifications*: 330 cases were notified in the quarter (2002, 396) with 1404 year-to-date (2002, 1880)
- *Current Rate*: 37.6 cases per 100,000 population (2002, 50.3)
- *Change in Rate*: statistically significant

VTEC/STEC

- *Notifications*: 30 cases were notified in the quarter (2002, 13) with 105 year-to-date (2002, 73)
- *Current Rate*: 2.8 cases per 100,000 population (2002, 2.0)
- *Change in Rate*: statistically significant

Hepatitis A

- *Notifications*: 13 cases were notified in the quarter (2002, 14) with 69 year-to-date (2002, 106)
- *Current Rate*: 1.8 cases per 100,000 population (2002, 2.8)
- *Change in Rate*: statistically significant

Gastroenteritis

- *Notifications*: 268 cases were notified in the quarter (2002, 365) with 1015 year-to-date (2002, 1088)
- *Current Rate*: 27.2 cases per 100,000 population (2002, 29.1)
- *Change in Rate*: not statistically significant

ENVIRONMENTAL EXPOSURES & INFECTIONS

Cryptosporidiosis

- *Notifications*: 318 cases were notified in the quarter (2002, 401) with 820 year-to-date (2002, 975)
- *Current Rate*: 21.9 cases per 100,000 population (2002, 26.1)
- *Change in Rate*: statistically significant

Legionellosis

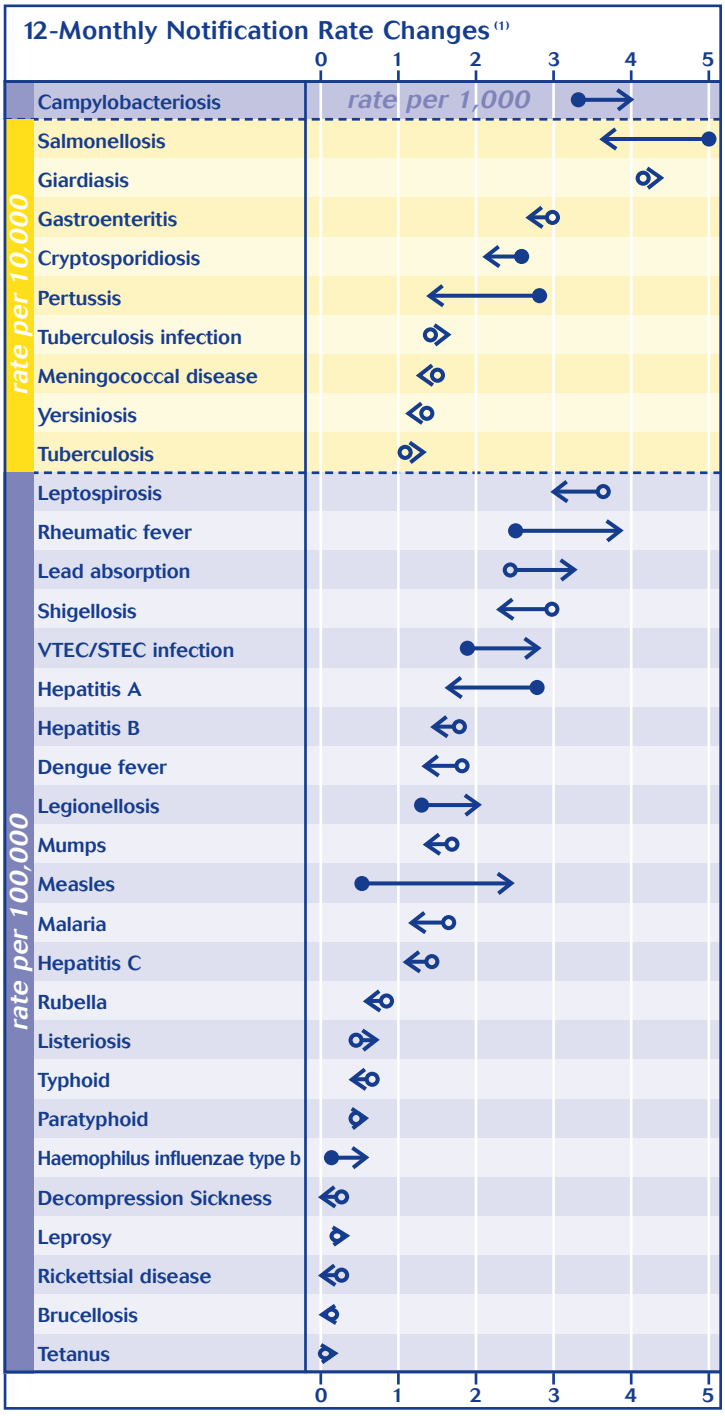
- Notifications: 27 cases were notified in the quarter (2002, 10) with 76 year-to-date (2002, 49)
- Current Rate: 2 cases per 100,000 population (2002, 1.3)
- Change in Rate: significant increase
- Comment: see the 'Other Surveillance Reports' in this issue for a report on Lower North Island activity

NEW, EXOTIC & IMPORTED INFECTIONS

Dengue Fever

- *Notifications*: 1 case was notified in the quarter (2002, 10) with 55 year-to-date (2002, 70)
- *Current Rate*: 1.5 cases per 100,000 population (2002, 1.9)
- *Change in Rate*: not statistically significant

National Surveillance Data



(1) Rates are calculated for the 12-month period to the end of this quarter. The symbols '<' and '>' represent a rate increase or decrease, respectively, from the previous 12 month period. The symbols '●' and 'o' indicate the rate for the previous 12-month period, and represent whether the difference between the two periods is statistically significant or not-statistically significant, respectively

3. Other Surveillance Reports

Chemical Injury Surveillance System

ESR has been commissioned by the Ministry of Health (MoH) to develop a national Chemical Injury Surveillance System (CISS). The system involves the collection and analysis of poisoning data from the National Poisons Centre (NPC), hospitals and the Coronial Services Office (CSO). While there is no comprehensive overview of poisoning morbidity and mortality in New Zealand, it is hoped that CISS will move us in that direction.

Section 143 of the *Hazardous Substances and New Organisms (HSNO) Act, 1996* states that all hospitalisations from hazardous substances are to be notified to the Medical Officer of Health. As the CISS is also driven by a public health need, the data it collects go beyond the legislative requirements to include deaths, and poisonings from therapeutic drugs and drugs of abuse. The purpose of Section 143 and CISS is therefore to provide information for health promotion activities and health policy formulation. These measures in combination can be used to reduce the incidence of poisoning and improve public health. While reporting to CISS is not a legal requirement, it is one mechanism through which hospitals can meet their statutory obligations under the HSNO Act.

The system, trialled initially in the Auckland region in early 2003, is now being implemented nationally. National poisoning data extracts are being sent to ESR on a quarterly basis from the CSO and New Zealand Health Information Services (NZHIS) pertaining to deaths and hospital inpatients respectively. Negotiations are also underway for the routine acquisition of NPC data.

However, the NZHIS data does not include emergency department patients or specific substance details for inpatients, thus limiting the evaluation of poisoning related interventions and effectiveness of regulations. Attainment of these data from hospitals is resource intensive and therefore expected to be gradual. Auckland Regional Public Health Service and Hawkes Bay PHU are currently receiving data from local hospitals, which is to be incorporated in the CISS. Other smaller PHUs have also been approached. Thus, sentinel surveillance comprising hospital data from a major metropolitan city, a provincial town and a rural area are available in the interim.

Number of CISS cases from the CSO and NZHIS data for the 2003 calendar year (as of 1 November 2003) is presented in the following table:

Data Source	Quarter			Total (Year-to-date[1])
	Jan-Mar	Apr-Jun	Jul-Sep	
CSO[2] (deaths)	27	30	3	60
NZHIS (hospital inpatients)	1897	1763	1762	5422

[1] As at 1 November 2003

[2] It can take several months from time of death until a coroner's report is filed at the CSO, consequently these data are provisional and updated quarterly

Copies of all CISS related reports and quarterly data updates are available on the Public Health Surveillance website (www.surv.esr.cri.nz) from early 2004. ESR would appreciate hearing from any other interested hospitals, PHUs and also GPs, as it is anticipated that GP data may be incorporated into the system in the future.

Reported by Rebecca McDowell, Population & Environmental Health Programme, ESR (rebecca.mcdowell@esr.cri.nz)

Legionellosis in the Lower North Island

There was an increase in the number of notifications of legionellosis in the lower North Island in the last two months of 2003. Seven of the 15 cases notified in 2003 occurred during November and December.

Notifications of legionellosis 2002 and 2003			
DHBs	2002	2003	Nov-Dec
Capital & Coast	5	9	3
Hutt Valley	4	4	3
Wairarapa	2	2	1
Total	11	15	7

Six out of the seven recent cases were male. At least four of the seven recent cases were caused by *Legionella longbeachae*, and these cases either lived or worked in Upper Hutt. All of the cases met the confirmed case definition on the basis of serological tests and clinical presentation of illness. One case had serological evidence of co-infection with *L. bozemanii*. None of the four *L. longbeachae* cases was "culture confirmed".

A search for common risk factors for the cases caused by *L. longbeachae* has revealed no links with respect to work premises, visits to supermarkets or other commercial premises, use of spa pools or gyms or other recreational facilities. All of the cases describe substantial soil exposure during the incubation period. However, no common products were identified by the investigation. Potting mix sources were investigated where implicated, and were found to be adequately labelled.

Three of the four Upper Hutt cases either lived or worked within a one-kilometre area. An environmental scan was carried out in the area. The investigation continues to examine the possibility of additional environmental hazards. The clustering of cases maybe coincidental.

Control activities have focused on providing information to the cases and to the general public on the precautions that can be taken when handling soil, including potting mix. The *Hutt News* and *The Dominion Post* have published information on the increase in cases and precautions. The next Communicable Disease newsletter for general practitioners will include a reminder that legionellosis is notifiable, since several of the cases in 2003 were not initially notified to Regional Public Health (RPH). Additionally, RPH is following up with the regional council on the plausibility of additional environmental hazards and what control measures, if any, should be implemented.

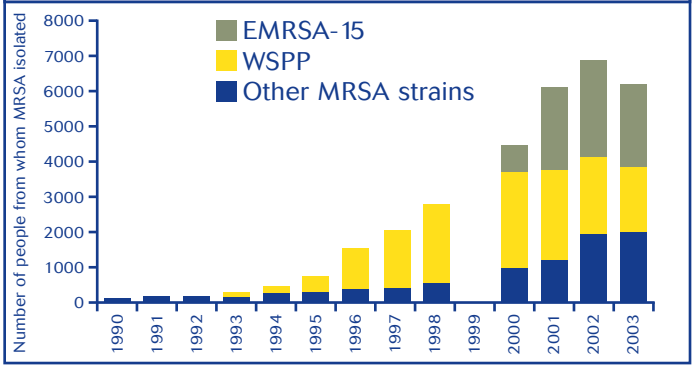
Reported by Margot McLean, Regional Public Health, Lower Hutt

Annual Survey of Non-Multiresistant & Multiresistant MRSA, August 2003

Each year since 2000, ESR has conducted a one-month survey of all methicillin-resistant *Staphylococcus aureus* (MRSA), that is, multiresistant and non-multiresistant isolates, to complement the ongoing routine surveillance of multiresistant MRSA and to provide information on the overall epidemiology of MRSA in New Zealand. The latest survey was conducted in August 2003. During that month, MRSA were referred from 513 people (492 patients and 21 staff). This number of referrals could be extrapolated

to an annual incidence rate of 165 per 100,000; a 10% decrease on the rate in 2002 (183 per 100,000). The wide geographic variation in the incidence of MRSA observed in previous years was again evident in 2003, with the highest incidence rates in the Auckland (354 per 100,000), Hawkes Bay (234), Northland (154), Hutt (146), Wellington (123) and Eastern Bay of Plenty (122) Health Districts. All South Island districts had rates below 50 per 100,000.

MRSA isolations, 1990-2003



Data for 1990 to 1998 are based on continuous surveillance of all MRSA isolations. Data for 2000 to 2003 are annualised and based on 1-month surveys conducted in these years. No survey was undertaken in 1999.

The majority of the MRSA isolates were the EMRSA-15 strain (37%), WSPP MRSA strain (30%), AKh4 MRSA strain (9%) or WR/AK1 MRSA strain (4%). The increase in MRSA in New Zealand from the mid–1990s to 2000 was driven by the spread and almost total dominance of the non-multiresistant, community WSPP MRSA. However, since 2000 the WSPP MRSA has represented a decreasing proportion of the MRSA isolations, and since 2001 the actual number of WSPP MRSA isolations has also decreased. There has been a concomitant rise in isolations of the EMRSA-15 strain and other multiresistant MRSA strains, such as AKh4 and WR/AK1.

MRSA was reported as causing infection in 82% of the 313 patients for whom this information was provided. Among the 492 patients with MRSA, 52% were categorised as hospital patients and 48% as community patients. Patients were classified as hospital patients if they were in a healthcare facility (including residential-care facility) when MRSA was isolated or had been in a healthcare facility in the previous three months. The majority (70%) of EMRSA-15 and AKh4 MRSA were isolated from hospital patients or staff, whereas most (76%) WSPP MRSA were isolated from people in the community.

Overall, 44% of the MRSA surveyed in 2003 were multiresistant, that is, resistant to ≥2 classes of antibiotics in addition to ß-lactams. The EMRSA-15 strain is invariably resistant to ciprofloxacin and usually resistant to erythromycin, with inducible clindamycin resistance. However, in 2003, 34% of the EMRSA-15 isolates tested were erythromycin susceptible. The WSPP MRSA remain predominantly non-multiresistant, with only infrequent resistance to any antibiotics other than ß-lactams. The AKh4 is typically multiresistant to ciprofloxacin, clindamycin (constitutive resistance), co-trimoxazole, erythromycin, gentamicin and tetracycline. The WR/AK1 strain is invariably resistant to fusidic acid and high-level mupirocin. In 2003, 37% of the isolates of this strain were also erythromycin resistant.

Reported by Helen Heffernan, Communicable Disease Programme, ESR

Surveillance of Sexually Transmitted Infections (STIs) in New Zealand

The Ministry of Health's Sexual and Reproductive Health Strategy (2001) highlighted the need for better understanding and control of STIs in New Zealand. In 2004, STIs (excluding AIDS) remain non-notifiable and surveillance relies principally on data reported by participating sexual health clinics (SHCs) to ESR. The use of SHC data to assess the incidence of STIs in the general population is inappropriate as attendees are a self-selected population thought to be at higher risk of acquiring an STI[1]. In addition, a significant proportion of the general population consult other health providers for STI related problems[2].

Efforts have been made to improve surveillance. In 1998, STI surveillance was extended to include family planning (FPCs) and student and youth health (SYHCs) clinics. Laboratory surveillance of gonorrhoea and chlamydia began in 1998 in Waikato and Bay of Plenty areas, and in 2000 in Auckland.

Between 1999 and 2002 the number of STIs reported increased across all these health care settings. Disease rates calculated from clinic data are difficult to attribute to the population because the denominator used is the total number of clinic visits, including visits unrelated to sexual health.

However, as the majority of laboratories in the Waikato, Bay of Plenty and Auckland areas report STI diagnoses, these data can provide a better indication of the population based disease incidence. Using the 2001 Census Population, rates of chlamydia increased by 68% between 1999 and 2002, in the Waikato and Bay of Plenty area (394 to 661 per 100,000 population). Over the same period, the rates of gonorrhoea have decreased by 7% (44 per 100,000 in 1999 to 40 per 100,000 in 2002). A similar trend was seen in Auckland from 2001 to 2002 (chlamydia increased by 19%; gonorrhoea decreased by 5%).

Current surveillance systems suggest increasing rates of STIs, indicating a significant public health problem. A representative, anonymised, sentinel laboratory surveillance system needs to be established as a priority, if effective STIs control measures are to be implemented.

Number of confirmed STI diagnoses reported from different health care settings in 1999 and 2002

	Any STI[1] diagnosis		Chlamydia		Gonorrhoea	
	1999 (%)[2]	2002 (%)	1999 (%)	2002 (%)	1999 (%)	2002 (%)
SHC	7400 (10.7)	9340 (11.5)	2327 (3.4)	3394 (4.2)	388 (0.6)	533 (0.7)
FPC[3]	195 (2.8)	2279 (1.1)	123 (1.8)	1373 (0.7)	11 (0.2)	184 (0.1)
SYHC	356 (0.4)	530 (0.4)	233 (0.2)	390 (0.3)	11 (<0.1)	18 (<0.1)

[1] Confirmed diagnosis of *Chlamydia trachomatis, Neisseria gonorrhoeae*, infectious syphilis (primary, secondary or early latent), genital warts (first presentation), genital herpes (first presentation) and non-specific urethritis

[2] % is percentage of total clinic attendances

[3] 4 FPCs reporting in 1999; 38 FPCs reporting in 2002

References

1. Johnson AM, Wadsworth J, Wellings K, *et al* Who goes to sexually transmitted disease clinics? Results from a national population survey. *Genitourinary Medicine* 1996;**72**:197-202
2. Dickson NP, Paul C, Herbison P **et al** The lifetime occurrence of sexually transmitted diseases among a cohort aged 21. *N Z Med J* 1996;**109**:308-12

Reported by Alisha Johnston, Population & Environmental Health Programme, ESR

4. Outbreak Surveillance

The following information is a summary of the reported outbreaks in this quarter (October through December 2003). While 'interim' reports are captured by the surveillance system, summary statistics presented here relate only to 'final' reports. Comparisons are made with the previous quarter (July through September 2003) and to this quarter, last year.

General

- 74 outbreaks were notified in this quarter
- 32 outbreaks reports are 'final', involving 346 cases
- the average number of cases per outbreak was 11 compared with 6 cases per outbreak in the previous quarter (6 cases per outbreak in the same quarter of the previous year)
- 7 hospitalisations and no deaths in this quarter

Pathogens

- 7 outbreaks (70 cases) were caused by unidentified pathogens in this quarter with a similar proportion of unidentified pathogen outbreaks last quarter although the proportion of cases involved in these outbreaks is lower this quarter
- 12 norovirus outbreaks (126 cases) occurred in this quarter, which is a higher proportion than the previous quarter, but the same as this time last year (proportion of cases involved is also higher than the previous quarter and this time last year)
- 9 enteric pathogen outbreaks, excluding norovirus (*Campylobacter, Salmonella, Cryptosporidium, Giardia*, VTEC/STEC, *Shigella*) were reported this quarter (proportion of cases involved in these outbreaks has increased since last quarter)

Settings

- 8 institutional outbreaks (152 cases): with a similar proportion in the previous quarter; 4 were norovirus outbreaks; 2 were unidentified; 1 each of influenza and measles
- 5 rest home outbreaks (81 cases) provided this quarter's most common setting in contrast to the previous quarter's most common setting of cafés (12 outbreaks, 41 cases) – the smaller number of rest home outbreaks produced twice as many cases

Transmission

- 14 person-to-person outbreaks were reported this quarter (166 cases); 35 outbreaks in the previous quarter (260 cases); and, 29 outbreaks in this quarter last year (123 cases)
- 8 foodborne outbreaks were reported this quarter (25 cases); 29 outbreaks in the previous quarter (101 cases); and, 30 outbreaks in this quarter last year (117 cases)

Sources

- 13 outbreaks (82 cases) had an identified source this quarter compared with 42 outbreaks (114 cases) in the previous quarter
- 57 outbreaks (242 cases) had an identified source during the same period last year

Reporting Delay

- common event outbreaks were the most rapidly reported type of outbreaks and 'other' types of outbreaks had the greatest delays in reporting
- common event outbreaks were reported on average 2.5 days after occurrence (9 outbreaks, 23 cases); in the previous quarter, there was an average reporting delay of 5 days (28 outbreaks, (82 cases)
- the 'other' type of outbreaks were reported on average 26.5 days after occurrence (2 outbreaks, 5 cases), in the previous quarter, there was an average reporting delay of 53 days (5 outbreaks, 10 cases)

Control

- specific action was taken to control 24 outbreaks (195 cases) this quarter compared with 62 outbreaks in the previous quarter (351 cases) and 80 outbreaks in this quarter, last year (321 cases)

5. Outbreak Case Reports

Investigation of a Case of *E. coli* O157:H7 in the Manawatu

In October 2003, the Palmerston North Public Health Unit was notified of a case of *E. coli* 0157:H7 in a 23-month-old male from a rural area in the Manawatu. The case had bloody diarrhoea and had been unwell for more than two weeks. Another childhood case had been notified previously in May 2002 without a source being identified. The homes of these two cases were in close proximity, separated by only one non-residential rural property. The two families were not acquainted nor did they appear to have activities in common.

Follow-up of the most recent notification was undertaken to try to determine the source, and to establish any possible link between the two cases. The investigation has identified a number of known risk factors for VTEC infection, including untreated drinking water (roof collected rainwater), manure, and home kill meat. Samples were obtained of the drinking water and venison. The venison was the only home kill meat available during the investigation.

Although the household drinking water was contaminated with *E. coli* (200 MPN/100ml), no *E. coli* O157:H7 was isolated.

However, *E. coli* O157:H7 was isolated from the sample of ground venison. Macrorestriction DNA analysis of *Xba* I digests by pulse-field gel electrophoresis carried out by ESR indicated that the *E. coli* O157:H7 isolated from the ground venison and the case were indistinguishable. However, the characterisation of the isolate from the 2002 case indicated that the two cases were not linked.

The fact that these two notifications of *E. coli* O157:H7 isolated from next-door-neighbours within an 18-month period is suspicious, with only 5 notifications of VTEC/STEC in Manawatu during 2002 and 2003, but no linkages were apparent. The source of the recent infection in a child is strongly suspected to be home-kill ground venison although the possibility of both child and deer being affected by a common source cannot be discounted.

Reported by Peter Wood, Senior Health Protection Officer, MidCentral Health, Palmerston North

Norovirus in Fruit Salad

An outbreak of gastroenteritis occurred amongst a cohort of 22 individuals who had attended a two-day conference in Wellington. Seven confirmed and a further five suspected cases gave a total of 12 probable cases – an attack rate of 55%. A single faecal specimen was obtained, which was PCR positive for norovirus. This was assumed to be the causative organism for all cases associated with the outbreak.

Symptom and food questionnaire forms were sent to all 22 conference attendees, and were completed by 13 attendees. Cohort analysis showed an increased risk of disease in those individuals who ate fruit salad on the first day of the

conference (estimated relative risk > 2.8). The most likely source of infection was thought to be grapes, which had been purchased that morning and used in preparing the fruit salad. The use of appropriate food preparation and storage practices on the part of the conference staff raises the possibility that the grapes had already been contaminated with norovirus from an outside source prior to purchase.

Reported by Sarah Hill, Public Health Registrar, Regional Public Health, Lower Hutt (A full outbreak case report is available on www.surv.esr.cri.nz courtesy of Regional Public Health)

Influenza B in Mangere Refugee Resettlement Centre

Auckland Regional Public Health Services (ARPHS) investigated an outbreak of respiratory illness involving 33 cases. The outbreak occurred at Mangere Refugee Resettlement Centre (MRRC) and was notified to ARPHS on 5 November 2003.

Cases experienced a range of symptoms including high fever, prolonged rigors, cough, muscle/joint pain, headaches and sore throat. Four cases were admitted to Middlemore Hospital for treatment (hospitalisation rate 12%). For the purposes of the investigation, cases were defined as suffering from fever (>38°C), cough and myalgia.

A total of 33 cases were identified and of these, 25 were refugees (attack rate 25/97=26%), five were asylum seekers (attack rate 5/21=24%) and three were staff members (attack rate 3/50=6%). Five cases occurred in those aged less than 15 years.

The index case presented to MRRC medical staff on the 29 October with a cough, a 39.6°C degree fever, myalgia and a headache. This case was a 28-year-old male refugee from Ethiopia who had departed Addis Ababa on 26 October transiting through Bangkok and Hong Kong, and arriving in Auckland on 28 October.

Viral throat culture was performed in addition to paired serology on 5 cases for a range of pathogens including Legionella, Mycoplasma, Chlamydia and for dengue virus. Serology for these cases was negative. Several cases experienced gastrointestinal symptoms including abdominal cramps and diarrhoea. Tests for a range of enteroviruses and norovirus were negative. Influenza B virus was isolated from one throat culture (Influenza B/Sichuan/ 379/99-like).

The 25 affected refugees had embarked from various destinations including Ethiopia (19), Sudan (2), Kenya (3) and one case had arrived at MRRC from Thailand, one month before the other refugees. All but one of the cases among the refugees occurred in those transiting Hong Kong on 28 or 29 October. All refugees used the same route and carrier from Hong Kong to Auckland. A total of 32 refugees arrived on these flights, of whom 25 became cases (attack rate 78%). The asylum seekers had resided at MRRC for some time prior to the arrival of the refugees. All three staff members worked in close proximity to cases. Refugees and asylum seekers had separate dormitories, classrooms and laundry amenities, but shared the same dining, recreation, and television rooms.

Outbreak control was difficult as the refugees and asylum seekers slept in large open plan dormitories that made effective isolation of cases impossible. Thorough hand hygiene was stressed for both staff and residents, and staff were encouraged to wear masks when nursing or in contact with symptomatic cases. It is likely, given the symptoms and the isolation of influenza B in one hospitalised case, that this agent caused the outbreak.

Reported by Greg Simmons, Medical Officer of Health, Auckland Regional Public Health Services, Auckland City

6. Pathogen Surveillance

Unless otherwise reported, pathogen surveillance data cover the period July through December 2003.

ENTERIC PATHOGENS

Salmonella

The July-December data for human and non-human *Salmonellae* isolates are available on line (www.surv.esr.cri.nz). During this period 720 human isolates were confirmed compared with 787 for the same period in 2002.

- *S.* Brandenburg: Isolations of this serotype increased in September and October in Otago and Southland. This pattern has been seen in previous years with human cases peaking six weeks after ovine and bovine abortions caused by *S.* Brandenburg.
- *S.* Typhimurium phage type 160: For the third consecutive year isolates of this phage type in August increased to over 30% of all isolates.
- *S.* Montevideo: A significant outbreak in Auckland occurred in August 2003. Three (out of 9 recorded cases) of the cases had eaten at the same café. This serotype had been previously isolated from sesame based products imported from Egypt to both New Zealand and Australia. Investigations into the August outbreak led to isolation of *S.* Montevideo from tahini hummus and helva made from product imported from Lebanon. The United Kingdom has also isolated *S.* Montevideo from sesame product sourced from Cyprus. PFGE of Australian and New Zealand human cases and product gave profiles of 90% similarity. Food recalls have occurred in Australia, New Zealand and the United Kingdom. The New Zealand Food Safety Authority introduced an emergency food standard on 25th September mandating sampling of sesame-based products at the border. The World Health Organisation is currently investigating a number of incidents of contamination of sesame products produced by Egypt, Cyprus and Lebanon.
- *S.* Typhimurium Phage Type 8 Variant: Forty-four cases of *S.* Typhimurium phage type 8 variant were confirmed after a food poisoning outbreak at a hangi held in South Auckland. Thirty-nine cases were from South Auckland, three from Waikato, one from Wellington and one from the Hutt. One case, from a family who supplied the pork for the hangi, was symptomatic prior to the function. Cross-contamination and lack of refrigeration contributed to the spread of the outbreak.

VTEC/STEC

- 39 isolates of *E. coli* O157:H7 were confirmed during the period compared with 29 for the corresponding period in 2002
- isolates were from 12 of the 24 health districts in New Zealand
- there were 3 family clusters, one in Auckland and two in Canterbury
- 1 case of non-O157:H7, O84:HNM (F/23 TK diarrhoea)

Vibrio parahaemolyticus

- All isolates of *V. parahaemolyticus* received between 1998 and 2002 have been tested by PCR to detect the virulence marker genes *tdh* (thermostable direct haemolysin) and *trh* (thermostable direct haemolysin – related). Pathogenic strains may carry either or both of the genes. Twenty-three demonstrated *tdh*, nine both *tdh* and *trh* and four neither virulence gene. There were no human isolates in 2003.

Continued...

Enteric Pathogens continued...

Norovirus

- Jan-Dec 2003, 72 outbreaks were recorded on EpiSurv, but 103 were logged by the ESR Norovirus Laboratory
- lab data suggest that rest home outbreaks were again common, but often not reported to EpiSurv
- genogroup I strains were identified again this year- GI/1 (Norwalk virus), GI/2, GI/3, GI/4 and GI/5
- the predominant genotype continues to be GII/1,4,8 (49/76, 64.5% of representative outbreak strains), with distinct GII/1,4,8 strains identified
- the first NZ cruise ship outbreaks occurred; 4 outbreaks were recorded on different cruises made by the same ship; 3 distinct norovirus genotypes were identified from these outbreaks
- the 'Farmington Hills' GII/1,4,8 norovirus strain predominant throughout North America and in cruise ship outbreaks over the last 18 months has also been present in New Zealand since August 2002 and norovirus strains from 19 New Zealand outbreaks have been confirmed as 'Farmington Hills': 2 sequential outbreaks on one cruise ship, 4 hospital, 6 rest home, 1 school, 1 food-related, 4 person-to-person and 1 outbreak of unknown origin (one of the person-to-person outbreaks occurred among members of a visiting Australian schoolboy rugby team)

LEGIONELLOSIS & ENVIRONMENTAL LEGIONELLA

- 39 cases were laboratory-diagnosed
- 26 cases were confirmed using the case definition, and 13 cases were probable
- 17 (44%) cases were infected with *L. longbeachae*
- another 3 cases showed serological evidence of infection with both *L. longbeachae* and *L. bozemanii*
- there were 4 cases each of *L. micdadei, L. pneumophila* sg 2, and L. pneumophila sg 12
- 44% of the cases are associated with soil or compost use/exposure
- 2 common-source outbreaks involving compost use, each involving 2 cases
- an outbreak (4 cases) of *L. longbeachae* is under investigation (see 'Other Surveillance Reports', this issue)
- 25 legionellosis cases were diagnosed in November and Decemeber 2003: 12 with *L. longbeachae*, 2 with *L. bozemanii*/ *L. longbeachae* and 1 with *L. micdadei*
- 14 cases were implicated in the Otahuhu police station outbreak, however, no *legionella* bacteria were isolated from the water supply and there was no match between the *legionella* isolate from the cooling tower and the *legionella* serology results from any suspected cases, of which only two fitted the case definition

RESPIRATORY VIRUSES

Influenza virus

- 891 isolations of influenza viruses were reported, compared with 442 isolations of influenza viruses during the same period in 2002
- 889 influenza A virus isolations: 311 were subtyped as A/Moscow/10/99 (H3N2)-like viruses, 361 were subtyped as A/Fujian/411/2003 (H3N2)-like viruses
- 2 influenza B isolates were typed as B/Sichuan/379/99-like virus
- all currently circulating strains except A/Fujian/411/2003 (H3N2)-like strain were included in the 2003 influenza vaccine formulation

Respiratory Syncytial Virus and Rhinoviruses

- 741 cases of RSV were reported, compared with 691 cases during the same period in 2002
- 43 isolations of rhinoviruses were reported, compared with 46 isolations of rhinoviruses during the same period in 2002

ADENOVIRUSES & ENTEROVIRUSES

Adenoviruses

- 107 adenovirus isolations were reported, lower than the 128 isolations during the same period in 2002
- Adenovirus type 3 was the most predominant serotype (35 isolations)

Enteroviruses

- 49 enterovirus infections were reported, lower than the 61 infections reported during the same period of 2002
- Echovirus type 6 (11) and Coxsackie B type 3 (11) were the most predominant isolations

SPECIAL BACTERIOLOGY

Listeria monocytogenes

- 10 isolates of L. monocytogenes from human cases were referred in this period (for a table of L. monocytogenes from human cases, see www.surv.esr.cri.nz)
- 3 cases were perinatal, no foetal deaths were recorded
- 3 cases were in infants, two of whom had no risk factors recorded
- 4 cases were in adults, all of whom had an underlying illness and/or were elderly

Corynebacterium diphtheriae

- 3 isolates of *C. diphtheriae* were received for toxigenicity testing, typing and surveillance purposes
- isolates were a var. *mitis* strain from a nasal source and two var. gravis strains from blood and from a leg wound
- all were non-toxigenic as determined by PCR testing

New Zealand Public Health Surveillance Report is produced quarterly by ESR for the Ministry of Health and may be downloaded in PDF format from www.surv.esr.cri.nz

Contributions to this publication are invited in the form of concise reports on surveillance issues or outbreak investigations.

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