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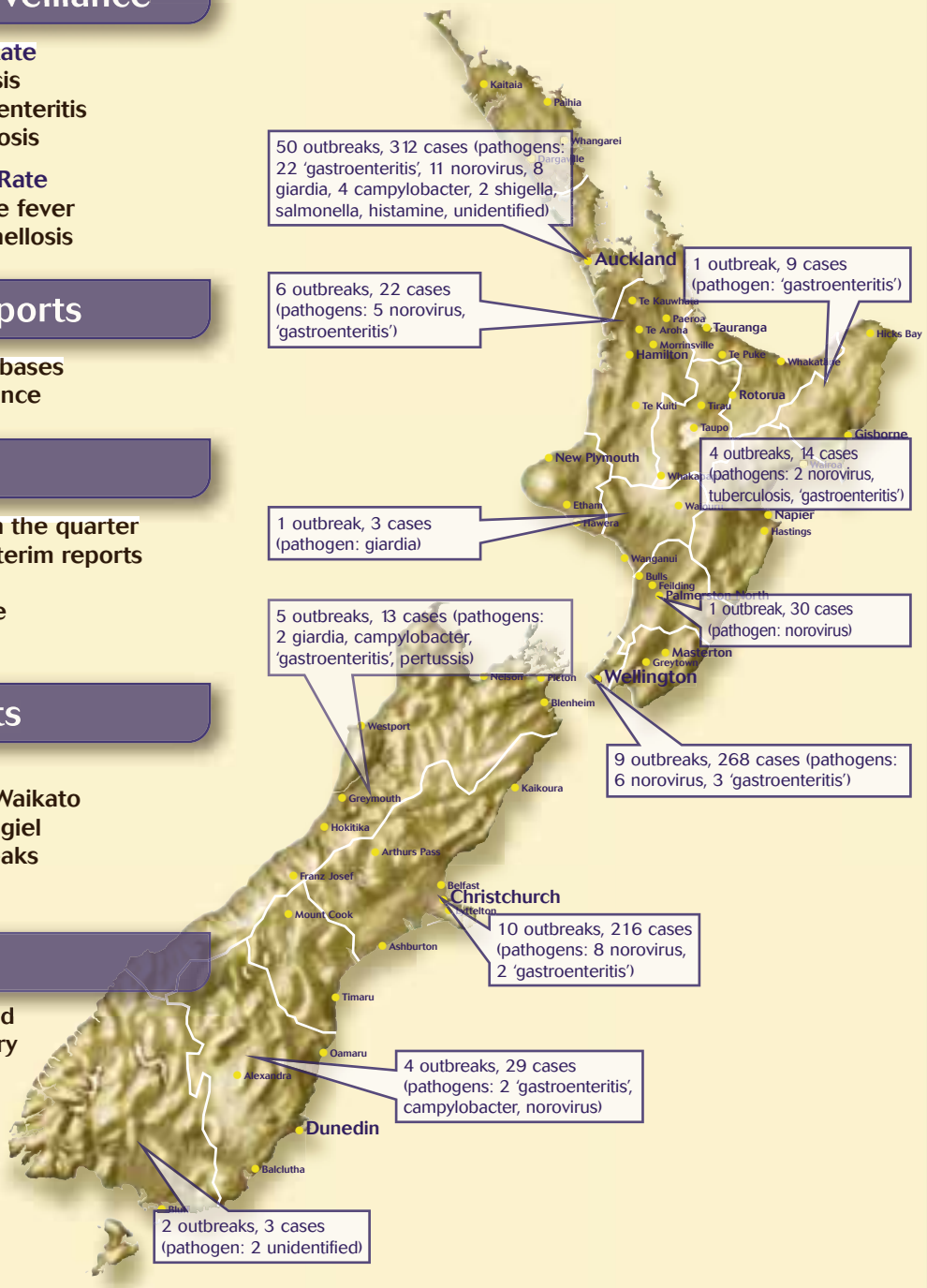
New Zealand Public Health Surveillance Report

September 2004

Contents & Highlights

This Quarter's Outbreaks

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



ONLINE: New Zealand Antimicrobial Resistance Surveillance Data

http://www.surv.esr.cri.nz/antimicrobial/antimicrobial_resistance.php

1. Editorial

The Emerging Problem of Norovirus in New Zealand

It has been a busy year for norovirus surveillance: the Norovirus Reference Laboratory at ESR has received to the end of June over 500 specimens for norovirus testing (http://www.surv.esr.cri.nz/surveillance/annual_outbreak.php). Internationally and in New Zealand, the number of norovirus infections is increasing.

Increased recognition and reporting had a major impact during the recent outbreak in the greater Wellington region, but there may be several other reasons why greater attention is being paid to what may be considered by some to be merely a brief inconvenient period of gastroenteritis.

The first of these might be termed the "pandemic effect". The outbreak of SARS in Asia and Toronto has reminded public health professionals that we need to be able to recognise and react quickly to extended or large outbreaks of communicable disease. Prior to SARS, New Zealand held a pandemic influenza 'planning exercise' called "Operation Virex", which illustrated important limitations in the ability of our health sector to communicate effectively during a pandemic situation. Consequently, health professionals have recently learnt a few lessons about disease surveillance, communication and action. Increased reporting and recognition of norovirus may reflect our recently heightened awareness.

A second possible reason for the increased attention is the pressure on hospitals to maintain elective surgery and other services in spite of the reduced numbers of available beds. Although norovirus is generally a mild disease, it can be most unpleasant for someone who is immobile and cannot get to the toilet in time. Management of the recent norovirus outbreak, which affected over 200 people at Wellington and Kenepuru hospitals, was largely focussed on minimising the impact on elective and urgent surgery (see Outbreak Case Report section, this issue).

A third reason for paying attention to norovirus outbreaks is that staff illness can become more of an issue than resident or patient illness. Early in an outbreak staff become sick mainly after contact with affected patients. They should be excluded from work for 72 hours, which of course leads to rostering difficulties. As the outbreak continues, as with SARS, the staff tearooms and toilets can become centres of disease transmission with even greater impact on staffing. Later, the children of staff may become infected if the disease becomes epidemic in the community. This has the greatest impact of all on staff, because they need to take time off work to look after their children, and then take time off themselves if they become sick.

Consequently, the need to diagnose and report norovirus is driven by attempting to minimise the impact of norovirus in neighbouring institutions. This good neighbourliness is of course driven by the desire to have beds to transfer patients to, particularly in long term care facilities (rest homes). During the greater Wellington outbreak there was excellent communication, enhanced by a DHB-funded community infection control officer. There are strong ties between the hospitals' infection control teams and Regional Public Health and this is critical to assessing what is happening in the community and other institutions.

Norovirus needs to be taken seriously, because when bed occupancy sits at well over 90% and staff rosters are tight, a norovirus outbreak has the ability to cause significant disruption and cost to institutions and the health system at large.

2. Notifiable Disease Surveillance

The following is a summary of disease notifications for the April-June quarter of 2004 and cumulative notifications and rates calculated for a 12-month period (July 2003-June 2004). For comparative purposes notification numbers and rates are presented in brackets for the same periods in the previous year. A robust method of constructing 95% confidence intervals is used to determine 'statistically significant differences' throughout this report unless otherwise stated [see Newcombe, R. G. and D. G. Altman. Proportions and their differences. In: *Statistics with Confidence*. 2000. BMJ Books. Bristol]. **Data contained within this report are based on information recorded on EpiSurv by public health service staff up to 7 July 2004.** The number of notifications reported for this quarter is provisional and subject to change, as cases may be entered at a later date or retracted upon further investigation.

The National Surveillance data tables summarised in this report are available from www.surv.esr.cri.nz

VACCINE PREVENTABLE DISEASE

Measles

- *Notifications:* 9 notifications in the quarter (2003, 16); 65 notifications over the last 12-months (2003, 37) giving a rate of 1.7 cases per 100,000 population (2003, 1.0), a statistically significant increase
- *Comments:* only 3 notifications were laboratory confirmed

Pertussis

- *Notifications:* 379 notifications in the quarter (2003, 107); 1,033 notifications over the last 12-months (2003, 833) giving a rate of 27.6 cases per 100,000 population (2003, 22.3), a statistically significant increase
- *Comments:* this is the first statistically significant 12-month rate increase since the last epidemic, which peaked in November 2000. This follows a statistically significant quarterly rate increase noted in the previous issue of NZPHSR, which may be signalling the beginning of the next epidemic.

INFECTIOUS RESPIRATORY DISEASES

Meningococcal Disease

- *Notifications:* 83 notifications in the quarter (2003, 123); 463 notifications over the last 12-months (2003, 552) giving a rate of 12.4 cases per 100,000 population (2003, 14.8), a statistically significant decrease
- *Comments:* notifications were distributed by age as follows, 16 under 1 years of age; 19 (1-4 years); 6 (5-9 years); 8 (10-14 years); 16 (15-19 years); and, 18 in the 20 and over category

Acute Rheumatic Fever

- *Notifications:* 10 notifications in the quarter (2003, 27); 125 notifications over the last 12-months (2003, 96) giving a rate of 3.3 cases per 100,000 population (2003, 2.6), not a statistically significant increase

- *Comments:* there is a statistically significant decrease in notifications compared with the same quarter last year; 9 cases were under 15 years of age this quarter, 1 case was in the 20-29-age range and no cases of rheumatic fever recurrence were notified

ENTERIC INFECTIONS

Campylobacteriosis

- *Notifications:* 2,187 notifications in the quarter (2003, 2,228); 14,282 notifications over the last 12-months (2003, 13,253) giving a rate of 382.2 cases per 100,000 population (2003, 354.6), a statistically significant increase

Salmonellosis

- *Notifications:* 243 notifications in the quarter (2003, 316); 1,210 notifications over the last 12-months (2003, 1,498) giving a rate of 32.4 cases per 100,000 population (2003, 40.1), a statistically significant decrease

VTEC/STEC Infection

- *Notifications:* 14 notifications in the quarter (2003, 41); 91 notifications over the last 12-months (2003, 94) giving a rate of 2.4 cases per 100,000 population (2003, 2.5), not a statistically significant decrease
- *Comments:* note that there were statistically significant quarterly decreases from the previous quarter and the same quarter last year

Gastroenteritis

- *Notifications:* 417 notifications in the quarter (2003, 307); 1,203 notifications over the last 12-months (2003, 1,081) giving a rate of 32.2 cases per 100,000 population (2003, 28.9), a statistically significant increase
- *Comments:* note that this is not a 'notifiable disease' [per se], but the term 'gastroenteritis' provides a catch-all notifiable category for enteric diseases that may not be notifiable and for syndromic reports that come through public health units, including direct reports from the public

Norovirus

- *Comments:* This is not a notifiable disease and many of the Gastroenteritis notifications are norovirus infections. In this issue our editorial and case reports focus on the norovirus problem in New Zealand, of which several outbreaks have been highlighted in the media during the last quarter.

ENVIRONMENTAL EXPOSURES AND INFECTIONS

Cryptosporidiosis

- *Notifications:* 40 notifications in the quarter (2003, 108); 671 notifications over the last 12-months (2003, 1029) giving a rate of 18.0 cases per 100,000 population (2003, 27.5), a statistically significant decrease

Giardiasis

- *Notifications:* 371 notifications in the quarter (2003, 393); 1587 notifications over the last 12-months (2003, 1495) giving a rate of 42.5 cases per 100,000 population (2003, 40.0), not a statistically significant increase
- *Comments:* there has been a statistically significant drop in notifications compared with the previous quarter

Hepatitis C

- *Notifications:* 4 notifications in the quarter (2003, 9); 42 notifications over the last 12-months (2003, 41) giving a rate of 1.1 cases per 100,000 population (2003, 1.1), no change
- *Comments:* there has been a statistically significant drop in notifications compared with the previous quarter

Legionellosis

- *Notifications:* 21 notifications in the quarter (2003, 22); 85 notifications over the last 12-months (2003, 58) giving a rate of 2.3 cases per 100,000 population (2003, 1.6), a statistically significant increase

Yersiniosis

- *Notifications:* 115 notifications in the quarter (2003, 57); 504 notifications over the last 12-months (2003, 411) giving a rate of 13.5 cases per 100,000 population (2003, 11.0), a statistically significant increase

NEW, EXOTIC AND IMPORTED INFECTIONS

Dengue Fever

- *Notifications:* 2 notifications in the quarter (2003, 28); 13 notifications over the last 12 months (2003, 81) giving a rate of 0.3 cases per 100,000 population (2003, 2.2), a statistically significant decrease

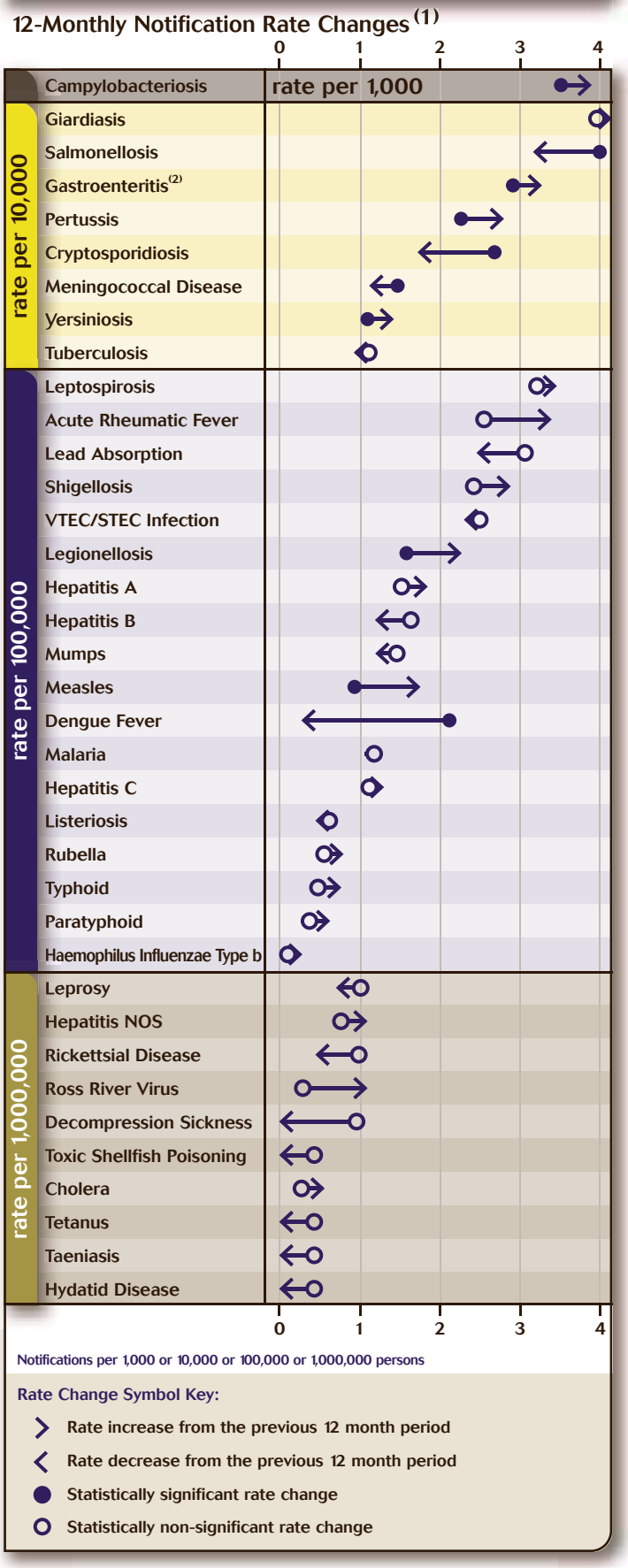
ONLINE: New Zealand Antimicrobial Resistance Surveillance Data

Antimicrobial resistance surveillance data are now available on the ESR surveillance website: http://www.surv.esr.cri.nz/antimicrobial/antimicrobial_resistance.php

The data being routinely added include:

- the weekly *MRSA Report &* annual reports on MRSA
- annual reports on resistance among invasive *Streptococcus pneumoniae, Neisseria meningitidis* and *Haemophilus influenzae*
- annual reports on confirmed ESBL-producing organisms
- annual reports on confirmed VRE
- annual reports on resistance among *Salmonella*
- 6-monthly reports on antituberculosis-drug resistance
- annual reports on the general susceptibility data collected from diagnostic labs throughout the country
- 2-yearly reports on trends in antimicrobial resistance
- reports on the regular (usually annual) point-prevalence surveys of antimicrobial resistance among a particular species

National Surveillance Data



(1) Rates are calculated for the 12-month period to the end of this quarter.

(2) Gastroenteritis notifications are syndromic reports for the most part – derived from a variety of sources – this is a 'Catch all' category.

3. Other Surveillance Reports

New Zealand Microbial Typing Databases

Under the auspices of the Enteric Zoonotic Disease Research Steering Committee, and with funding support from MoH, NZFSA and Dairy Insight, ESR is establishing the New Zealand Microbial Typing Databases (NZMTDs). With an initial focus on *Campylobacter, Salmonella*, shiga-toxin producing *E. coli* (STEC) and *Listeria*, the key aspects of this project are to standardise microbial analysis methods to ensure compatibility between laboratories (both within NZ and internationally), and to establish national electronic databases of strain data.

The first microbial analysis method to be addressed is Pulsed-Field Gel Electrophoresis (PFGE). PFGE was selected by PulseNet USA as the best typing technique for inter-laboratory comparisons, and almost a 100,000 isolates have been submitted to their databases. These databases have proved invaluable in the identification and tracing of food and waterborne outbreaks, and in identifying changes in strain distributions and the emergence of new strains. The New Zealand Microbial Typing Databases will be compatible with the PulseNet USA methodology, databases and BioNumerics software.

PFGE involves purifying intact genomic DNA from isolated bacterial colonies, which are then digested with "rare cutting" restriction enzymes, generating relatively few genomic fragments of a comparatively large size (20,000 to a million base pairs each). Separation of such large fragments requires a special electrophoretic method, PFGE. The NZMTDs will allow comparison of these PFGE fingerprints between laboratories in New Zealand, and internationally, and will also allow databases of thousands of PFGE isolate patterns to be built up from a range of laboratories in New Zealand and overseas. This will help answer questions such as, has this type of bacteria been seen before in NZ or overseas; where and when has it been found; how common is this type? Further comparison with human and other environmental isolates will assist in addressing questions such as, which strains cause disease and can transmission routes be identified or eliminated?

Key developments over 2004-2005 will include transferring the PFGE methodology to laboratories throughout New Zealand through the delivery of a training course and distributing standard protocols and strains to each laboratory. We will also distribute the BioNumerics database templates that have been developed enabling the standardisation of the information collected, and rapid merging of information into National databases. Finally, we will convene a meeting of all stakeholders to formulate a Memorandum of Understanding governing the use, access and confidentiality of the databases.

This project enhances our participation in the PulseNet Asia-Pacific network that currently also includes Australia, Bangladesh, Hong Kong, India, Japan, Korea, Malaysia, the People's Republic of China, The Philippines, Taiwan, Thailand, and Vietnam. The NZMTDs will act as a prototype for a range of databases addressing a number of organisms and techniques. The national server has the capacity to host any number of databases.

Reported by Brent Gilpin, Water Group, Institute of Environmental Science & Research
Brent.gilpin@esr.cri.nz

2003 Antituberculosis-Drug Resistance

The national surveillance of antituberculosis-drug resistance is based on the results of susceptibility testing of isolates in the Mycobacteriology Reference Laboratories at Auckland, Wellington and Waikato Hospitals. Susceptibility to five antituberculosis drugs (isoniazid, rifampicin, ethambutol, pyrazinamide and streptomycin) is routinely tested.

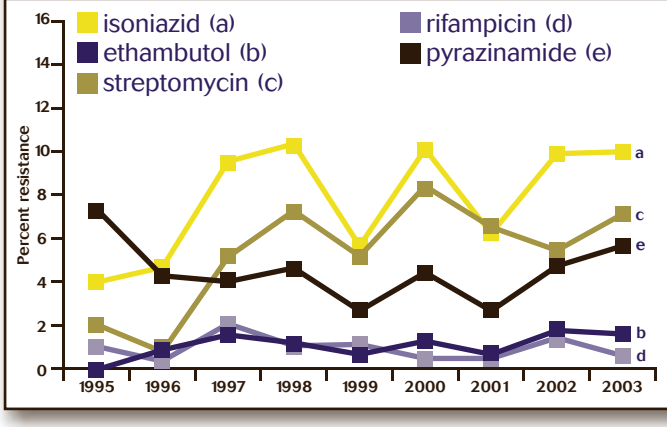
In 2003, 424 cases of tuberculosis were notified, 322 (75.9%) of which were reported by the Mycobacteriology Reference Laboratories as culture positive. The 322 isolates from the culture-positive cases included 316 *Mycobacterium tuberculosis* and six *M. bovis* isolates. Isoniazid resistance was most common (9.9%), followed by resistance to streptomycin (7.1%), pyrazinamide (5.6%), ethambutol (1.6%) and rifampicin (0.6%). Compared with New Zealand-born cases, cases born overseas were more resistant to each of the antimicrobials except pyrazinamide, although the difference was only significant ($p \leq 0.05$) for isoniazid.

Since 1995, there has been a trend of increasing isoniazid ($p=0.0230$) and streptomycin ($p=0.0075$) resistance. However, these trends were only significant among cases born overseas. Pyrazinamide resistance has fluctuated from year to year, with no apparent trend. Rifampicin and ethambutol resistance has remained at ≤2%.

The majority (81.1%) of the isolates in 2003 were susceptible to all five antimicrobials tested. Two isolates (0.6%) were multidrug-resistant (MDR-TB, resistant to at least isoniazid and rifampicin). Both of these 2003 MDR-TB cases were patients who had arrived in New Zealand within 15 months of their tuberculosis being diagnosed. MDR-TB is rare in New Zealand, with an average annual incidence of 0.7% and a total of 16 cases recorded in the nine years since national surveillance of antituberculosis-drug resistance began in 1995. All but one of the 16 MDR-TB cases recorded since 1995 have been people born overseas and assumed to have acquired their MDR-TB overseas.

The full report on antituberculosis-drug resistance in 2003 is available at:
http://www.surv.esr.cri.nz/antimicrobial/tuberculosis.php

Antituberculosis-drug Resistance 1995-2003



Reported by Helen Heffernan, Communicable Disease Programme, ESR, on behalf of the Mycobacteriology Reference Laboratories

4. Outbreak Surveillance

The following information is a summary of the outbreak surveillance for New Zealand, from data collected this quarter (April-June 2004). Comparisons are made to the previous quarter (January-March 2004), and to the same quarter in the previous year (April-June 2003). Note that the outbreak data in this section are notified to ESR by the Public Health Services.

General

- 93 outbreaks notified in this quarter (919 cases)
- 67 are 'final' reports (708 cases); 26 are 'interim' reports (121 cases) that have yet to be finalised and closed. All further comments are from data obtained from 'final' reports
- 10.6 cases on average per outbreak, compared with 6.7 cases per outbreak for finalised reports in the previous quarter
- 14 hospitalisations (all norovirus) and no deaths this quarter
- Comment: 2 norovirus outbreaks in Canterbury accounted for 14 hospitalisations (April) in two acute care hospitals (3 cases and 10 cases) and the other hospitalisation occurred in Auckland (May)

Pathogens

- 2 'pathogen unidentified' outbreaks (5 cases) during this quarter
- 27 norovirus outbreaks (624 cases)
- 21 gastroenteritis outbreaks (124)
- 9 giardiasis outbreaks (27 cases)
- 4 campylobacteriosis outbreaks (9 cases)
- 2 shigellosis outbreaks (5 cases)
- 1 outbreak each of histamine poisoning (2 cases) and pertussis (2 cases)

Modes of Transmission

Note that reporting allows for multiple modes of transmission to be selected and in some instances no modes of transmission were selected for outbreaks notified to ESR through EpiSurv. Consequently, numbers may not add to the total number of outbreaks reported.

- 33 person-to-person outbreaks, from (non-sexual) contact with an infected person (including droplets): 18 norovirus (367 cases), 6 each of giardiasis (13 cases) and gastroenteritis' (12 cases), 2 shigellosis (5 cases), and 1 pertussis (2 cases)
- 20 food borne outbreaks, from consumption of contaminated food or drink (excluding water): 12 'gastroenteritis' (37 cases), 4 norovirus (8 cases), 2 campylobacteriosis (5 cases), 1 of each histamine poisoning (2 cases) and 'pathogen unidentified' (2 cases)
- 12 'mode of transmission unknown' outbreaks: 6 norovirus (40 cases), 3 'gastroenteritis' (11 cases), 2 campylobacteriosis (4 cases), and 1 giardiasis (5 cases)
- 8 environmental outbreaks, from contact with an environmental source (eg swimming): 4 norovirus (100 cases), 2 (4 cases) and 1 each of 'gastroenteritis' (3 cases) and 'pathogen unidentified' (no cases reported)
- 2 waterborne outbreaks, from consumption of contaminated drinking water: 2 giardiasis (6 cases)

Circumstances of Exposure/Transmission

Common 'settings' where exposure/transmission occurred or contaminated food/beverage was prepared for consumption are identified below, but note that reporting through EpiSurv allows multiple settings to be selected and in some instances no settings were selected in outbreaks notified to ESR.

- 10 home outbreaks: 6 giardiasis (15 cases), 2 shigellosis (5 cases), 1 each of norovirus (4 cases) and pertussis (2 cases)
- 9 café outbreaks: 7 'gastroenteritis' (21 cases) and 2 norovirus (3 cases)
- 16 rest home (or continued care hospital) outbreaks: 14 norovirus (361 cases) and 2 'gastroenteritis' (no cases reported)

5. Outbreak Case Reports: Focus on Norovirus

Outbreaks in Rest Homes: Waikato

During April and May 2004, the Waikato Public Health Unit (PHU) was notified of six outbreaks of probable viral gastrointestinal disease (GI) associated with rest homes for the elderly. The main symptoms of those affected were diarrhoea and vomiting. It was noted that in two outbreaks, cases appeared to follow an incident of vomiting in a large commercial area such as a dining room. The duration of symptoms was approximately 48 hours, with outbreaks lasting about 10 days.

The PHU investigated each outbreak in an attempt to establish their origin, particularly with regard to potential food or water sources. Stool specimens were collected from those residents with symptoms and sent for laboratory analysis.

Information and advice was provided to the homes, including the recently disseminated norvirus outbreak guidelines[1], locally developed infection control advice, viral gastro-enteritis fact sheets and log sheets for the collection of epidemiological precautionary intervention included closing the rest homes for all but essential movements of residents. Most homes erected signs to inform visitors of the outbreak and to reduce, if possible, the number of visitors. Furthermore, the hospital duty manager was informed of each outbreak to ensure appropriate control measures were put in place for residents requiring acute hospital care.

The GI outbreaks in the rest homes were characterised by a rapid spread through both residents and staff, consistent with norovirus outbreaks. Norovirus was detected in stools of symptomatic residents from four of the outbreaks. No other pathogens were identified. The overall attack rate was 70-80%, involving 186 cases.

In light of these outbreaks, the PHU is attempting to raise awareness by providing outbreak specific information via the PHU's monthly bulletin to health professionals.General community awareness was heightened through media coverage that coincided with outbreaks at hospitals in the Wellington Region.

[1]Guidelines for the Management of Norovirus Outbreaks in Hospitals and Elderly Care Institutions Auckland Regional Public Health Services

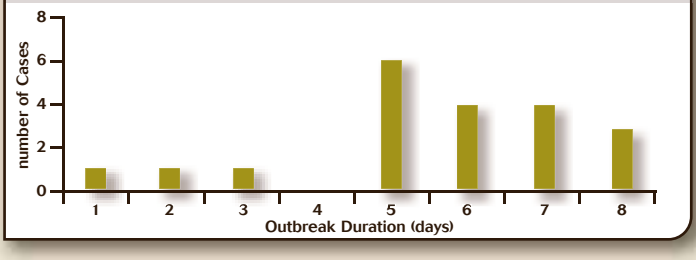
Reported by Anita Bell, Public Health Unit, Waikato District Health Board

Long Stay Hospital Outbreak: Mosgiel

An outbreak of norovirus occurred at a long stay hospital in Mosgiel during May 2004. Public Health South (PHS) became involved when the manager of the hospital phoned to report that seven patients and two staff members were ill with symptoms including vomiting and diarrhoea.

The last case became ill seven days after the first case(a staff member). One new case occurred per day for the first three days followed by six cases on day five. There were four new cases over days 6 and 7 that included two staff members and one visitor.

Case Onset: 20-27 May 2004



It was difficult to collect specific information regarding duration of illness across all cases because some patients were unable to communicate easily with staff. However, medical notes were used for all cases that were patients at the hospital to ascertain onset of illness. A median duration of illness of 2 days was estimated, based on cases where confirmationof illness duration was possible. The incubation period could not be calculated, as the date of exposure for each case could not be documented.

The delay in reporting the outbreak to PHS was influenced by a number of factors including the slow increase in cases over the first four days and the fact that these occurred over the weekend making identification of the outbreak difficult. The manager of the hospital was on leave on day 5 of the outbreak and returned on day 6, when she reported the outbreak.

Isolation procedures had been initiated at the hospital before PHS was contacted. Sick patients were relocated to rooms away from well patients and staff were specifically allocated to one or other of these areas. However, a lack of staff numbers during the night shift, especially after staff became ill, meant that this particular isolation procedure broke down at night. Sick staff were asked not to return to work until they were symptom free for at least 48 hours, despite the pressure on staffing. PHS staff offered advice on control options and the Infection Control Coordinator for Otago District Health Board provided advice on control procedures.

New admissions to the hospital were stopped and visitors were actively discouraged until the outbreak had ended. Finally, all food left in the kitchen that had been used over the previous 10 days (e.g. margarine, fresh vegetables, pastry) was discarded.

In summary, 12 of 24 patients (50%), 6 of 47 staff (13%), 1 visitor, and 1 close contact of a sick staff member met the case definition. Four of these cases were laboratory confirmed. No new cases were reported after 27 May, and all patients were moved back into the general population of the hospital by 1 June.

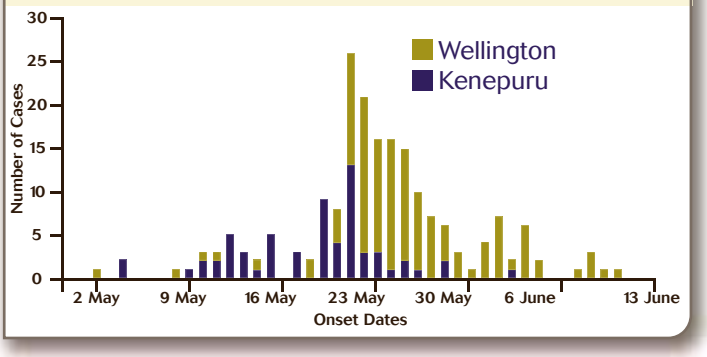
Reported by John Dennis and Rebecca O'Connell, Public Health South

Institutional and Community Outbreaks: Greater Wellington Region

Norovirus outbreaks occurred in Wellington and Kenepuru Hospitals in May and June 2004. At least 208 people were affected with gastrointestinal symptoms at that time, with a significant impact on hospital services. Outbreaks were also reported in rest homes, a community group, and Early Childhood Centres in the Wellington region.

Hospital outbreaks: the epidemic curve in the two hospitals between 2 May and 13 June 2004 illustrates two peaks, the first mainly comprised of cases at Kenepuru and the second mainly comprised of cases at Wellington.

Hospital Outbreaks



The first hospital outbreak started at Kenepuru on 9 May. A staff member developed symptoms. The next day visitors reported symptoms while visiting Ward "A". Over the next six days, 17 patients and staff on Ward "A" became ill.

Another outbreak occurred on Ward "B" in Kenepuru Hospital. The initial cases were an elderly couple admitted with symptoms on 17 May. The outbreak became evident on 19 May when two staff and six more patients became unwell. A total of twenty-eight cases occurred in eight days. From selected testing of faeces, the Kenepuru outbreaks were confirmed to be norovirus.

The outbreak grew rapidly at Wellington Hospital following the transfer on 18 May of a patient from Ward "B", Kenepuru Hospital (before the Kenpuru outbreak was recognised). There were a number of cases of diarrhoea in other parts of Wellington hospital, and although not all samples have been tested, it is now clear that some were due to other causes. These included *C. difficile, Campylobacter*, and post surgical bowel dysfunction.

The affected wards at Kenepuru were closed to new admissions, which resulted in rapid control in that hospital. The situation in Wellington hospital was more complicated with regard to ward movements and new cases of diarrhoea continued to occur for longer. Intensive infection control efforts lead to the end of the outbreak by 5 June.

Almost two thirds of all cases were staff (see table), but faecal samples were not received in the laboratory to confirm norovirus infection.

Hospital	Staff (%)	Patients (%)	Other (%)	Total
Kenepuru	37 (59%)	24 (36%)	2 (3%)	63
Wellington	94 (65.8%)	50 (34.5%)	1 (0.7%)	145
Total	**131 (63.0%)**	**74 (35.6%)**	**3 (1.4%)**	**208**

Rest home and Community outbreaks: in addition to four recorded rest home outbreaks and one community based outbreak (table below), there were also two gastroenteritis outbreaks reported in Early Childhood Centres (not laboratory confirmed, but consistent in symptomology and attack rate) and an additional two rest homes reported single cases of gastroenteritis linked with known norovirus outbreaks. In these two rest homes, implementation of strict isolation protocols may have prevented further cases.

CCDHB and HVDHB May-June 2004

Setting	Onset Dates	TLA	No. affected (Attack rate)	Comment
Catered meal	1 May	Kapiti	20/41 (49%)	Common source[1]
Rest home	26 May	Wgtn	3 (unknown)	Person to person
Rest home	12 May	Kapiti	69/200 (34.5%)	Person to person
Rest home	31 May	L. Hutt	25/114 (22.0%)	Person to person
Rest home	2 June	L. Hutt	96/255 (37.6%)	Person to person

[1]Caterer had contact with sick child

School survey: strong media coverage of the hospital outbreaks raised public awareness of norovirus. Subsequent anecdotal reports indicated a high level of gastroenteritis in the community. It is difficult to assess community incidence from routine surveillance, so a survey was sent to all schools in the Hutt/Wellington region on May 26. There were 81 replies (38% response rate) in which 26 schools (32%) noted "some" increase in diarrhoea and vomiting over the previous month, and 8 schools (10%) noted a marked increase.

Summary: norovirus is responsible for a high proportion of gastroenteritis in the community and often occurs in outbreaks. In 2003, norovirus caused more outbreaks in New Zealand than any other identified pathogen, with an average of 18.7 cases per outbreak[1]. While it is difficult to determine the community prevalence, the impact of norovirus on the community in the greater Wellington region appears to have increased over the past two months.

In 2003, Regional Public Health investigated eight norovirus outbreaks: three in rest homes, three in training institutions, one in a restaurant and one caused by a home-prepared meal. These resulted in 214 cases compared to more than 400 confirmed or probable cases associated with outbreaks over the past two months.

The experience of the past two months demonstrates the need to strengthen infection control awareness among all health care workers, rest home managers, and food handlers. Norovirus is an exceptionally infectious organism, and once illness becomes established in an institution, control requires resource- and time-intensive efforts. Clinical suspicion and early appropriate infection control precautions may avert the development of an outbreak.

[1]Notifiable and other diseases in New Zealand. Annual Report 2003. ESR 2004.

Reported by Margot McLean, Medical Officer of Health, Hutt Valley DHB and Viv McEnnis, Infection Control Officer, Capital and Coast DHB.

6. Pathogen Surveillance

Unless otherwise reported, pathogen surveillance April-June quarter, 2004.

ENTERIC PATHOGENS

Salmonella

The data for human and non-human Salmonella isolates are available at: www.surv.esr.cri.nz

- 283 human and 294 non-human isolates were submitted to the Enteric Reference Lab (2003; 350, 288 respectively)
- no significant outbreaks reported
- 2 isolates of DT4, an uncommon *S.* Typhimurium phage type in New Zealand, were confirmed in Taranaki

continued...

VTEC/STEC

- 14 laboratory-confirmed cases of E. coli O157 (2003, 22)
- 1 laboratory-confirmed non-O157 case, O125: HNM, a recognised atypical EPEC strain which may cause sporadic diarrhoea in infants in developing countries, confirmed in a 7 month old refugee

Vibrio/Aeromonas spp.

- 2 isolates of *Vibrio cholerae* O1 biotype El Tor subtype Ogawa were confirmed
- both patients, one from Auckland and one from Rotorua, had recently travelled in India

Norovirus

- 64 outbreaks were reported to the ESR Norovirus Reference Laboratory
- 40 outbreaks occurred in rest homes (27) and hospitals (13) around New Zealand
- the common global strain, GII/1,4,8 was the predominant genotype and was identified in all rest home and hospital outbreaks
- the strain of GII/1,4,8 circulating through many of the rest homes and hospitals is 97% similar to the Farmington Hills strain that was predominant across North America in 2002-3 and was responsible for many international cruise ship outbreaks
- a further 23 outbreaks occurred in catering or home settings, but foodborne transmission was not confirmed in these outbreaks
- 1 outbreak associated with consumption of imported oysters
- other genotypes identified were GI/2 Southampton virus, GII/3 Mexico virus, and GII/2 Melksham virus

LEGIONELLOSIS AND ENVIRONMENTAL LEGIONELLA

- 17 legionellosis cases were laboratory-confirmed as cases by the Legionella Reference Laboratory at ESR
- no cases were associated with outbreaks
- 13 fitted the confirmed case definition and four fitted the probable case definition
- 14 of these 17 cases have been notified
- a further 5 notified cases could not be laboratory-confirmed
- all confirmed cases demonstrated either antibody titres >512 on two or more occasions, or at least a four-fold rise in antibody titre by the legionella IFAT
- no deaths due to legionellosis have been reported this quarter
- *L. pneumophila* strains were identified as the causative agent in 5 cases, *L. longbeachae* strains in 4 cases and *L. hackeliae* in 2 cases
- single infections of *L. dumofii, L. gormanii, L. jordanis* and *L. micdadei* were isolated
- for two cases a single legionella agent could not be identified serologically

RESPIRATORY VIRUSES

Influenza Virus

- 10 isolations of influenza virus were reported (2003, 184)
- 9 were typed as influenza A and one as influenza B
- 7 of the 9 type A were sub-typed as A/Fujian/411/2002 (H3N2)-like viruses
- the influenza vaccine should provide good protection against the current circulating influenza strains

Respiratory Syncytial Virus & Rhinovirus

- 110 cases of respiratory syncytial viruses were reported (2003, 53)
- 23 isolations of rhinoviruses were reported (2003, 14)

Parainfluenza Virus

- 15 parainfluenza viruses were typed as parainfluenza type 1 (12), type 2 (1) and type 3 (2)

ADENOVIRUSES & ENTEROVIRUSES

Adenoviruses

- 57 adenoviruses were reported (2003, 45)
- Adenovirus type 4 was the predominant serotype
- 29 adenoviruses were serotyped as adenovirus type 1 (4), type 2 (4), type 3 (4), type 4 (6), type 5 (1), type 8 (1), type 10 (2), type 13 (1), type 14 (1), type 17 (2), type 19 (2), type 26 (1)

Enteroviruses

- 42 enteroviruses were reported (2003, 21)
- 5 isolations of enterovirus type 71 were reported from Auckland (Virology weekly report, Week 18, 2004, http:/www.surv.esr.cri.nz/virology/virology/php)
- 21 enteroviruses were serotyped as Coxsackie B4 (3), Coxsackie B5 (2), Coxsackie A9 (2), Coxsackie A10 (1), Coxsackie A24 (1), Echovirus 9 (1), Echovirus 11 (4), Echovirus 24 (1) and Echovirus 30 (6)

SPECIAL BACTERIOLOGY

Listeria monocytogenes

- 5 isolates of *L. monocytogenes* from human cases were referred (for table of human *L. monocytogenes* giving more details see www.surv.esr.cri.nz)
- all cases were in adults who had an underlying illness and/or were elderly

Corynebacterium diphtheriae

- 1 cutaneous isolate of *Corynebacterium diphtheriae* var. *mitis* was received for toxigenicity testing, typing and surveillance purposes
- the patient was M12y and came from Auckland
- the isolate was non-toxigenic by PCR examination for the toxin gene

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MINISTRY OF HEALTH
MANATŪ HAUORA

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

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