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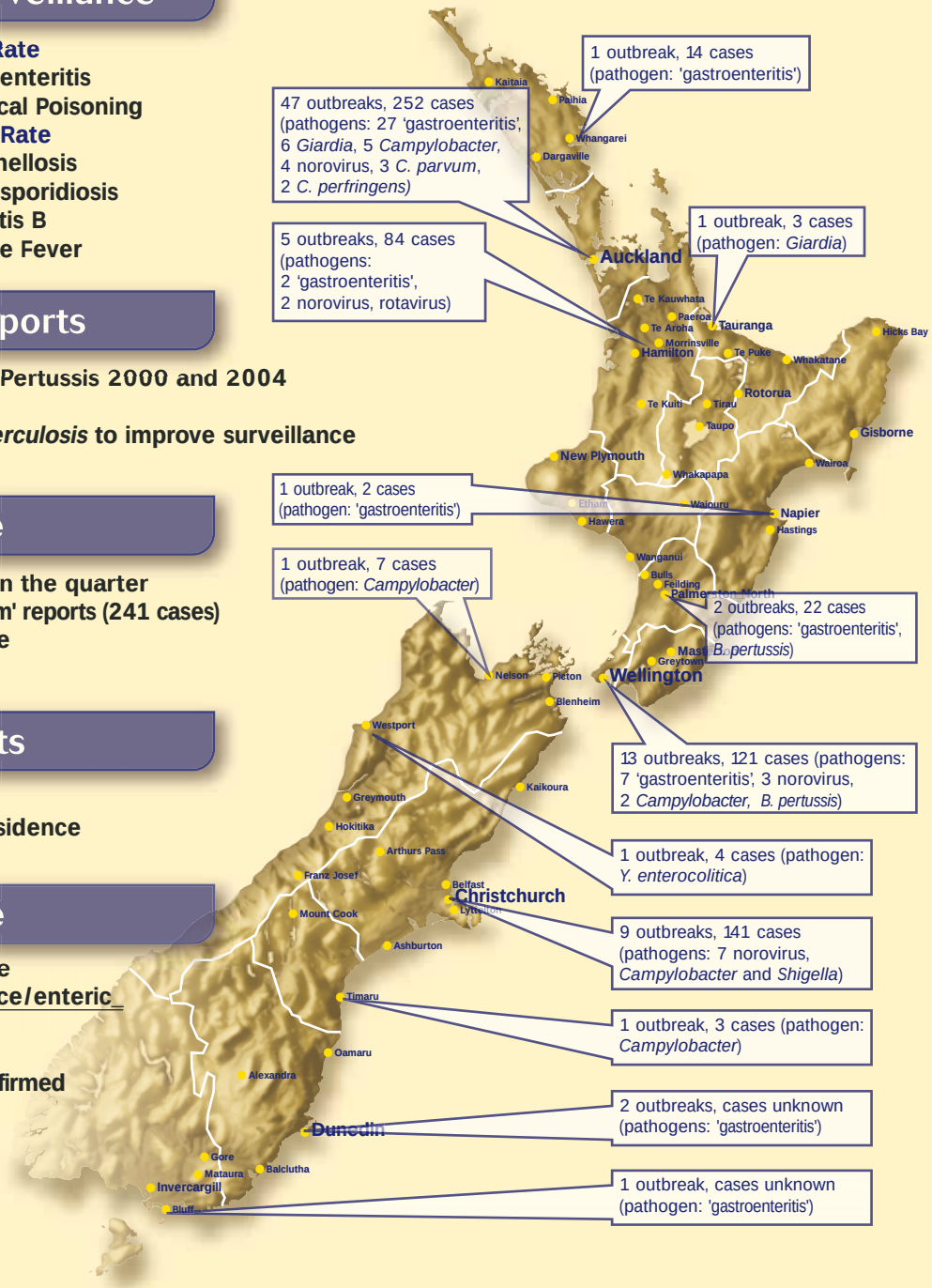
New Zealand Public Health Surveillance Report

March 2005

Contents & Highlights

This Quarter's Outbreaks

Notification and outbreak data in this issue are drawn from the October-December quarter of 2004. The outbreak map on this page consists of all outbreak information, final and interim. The total number of outbreaks and cases by region and outbreaks by pathogen are reported, as notified by 18 January 2005.



READER SURVEY – a quick 1-minute survey online

(http://www.surv.esr.cri.nz/surveillance/NZPHSR.php) to provide us with some much-needed reader feedback.

1 Editorial

Health concerns following tsunamis

We are all aware of the tragic events that occurred following the earthquake on 26 December 2004. Compounding the initial loss of life and injuries caused by the tsunami are a number of health concerns both short and long term that arise from such disasters. Some of the immediate health concerns are clean drinking water, food, shelter, and medical care for the injured[1]. Floodwaters can destroy water supply infrastructure and/or contaminate water and food supplies especially if sanitation systems are breached. Loss of shelter leaves people vulnerable to insect exposure, heat, and other environmental hazards. The above health concerns can exacerbate illnesses that may already exist in the affected region. However, decaying bodies create very little risk of major disease outbreaks, the people most at risk are those who handle the bodies or prepare them for burial[1].

The lack of safe water, poor sanitation/hygiene, and unsafe conditions in which to prepare food may lead to diseases including diarrhoea, dysentery, cholera, salmonellosis, shigellosis, amoebiasis and a number of other protozoal and viral infections, typhoid and paratyphoid fevers, hepatitis A and E, impetigo, trachoma, intestinal helminth infections (including ascariasis, trichuriasis and hookworm infection), and leptospirosis[1,2]. Standing bodies of water caused by the flooding may also increase the level of schistosomiasis, and vector-borne diseases such as dengue, malaria, Japanese encephalitis, yellow fever, and lymphatic filariasis in the communities. These diseases are of particular concern for children under five, pregnant women and the elderly.

The lack of access to the basics such as water, sanitation, hygiene and health care is still a problem in the province of Aceh in Indonesia[2]. As of 24 January, shigellosis has been diagnosed in 10 patients in Aceh[3]. Improved water and sanitation have been provided in the area most affected, and no further bloody diarrhoea has been reported since 19 Jan 2005. Bloody diarrhoea has also been reported from other areas of the province, and there have been sporadic cases of measles reported[3]. In southern India, Sri Lanka and Thailand, the focus has now moved more to planning for rehabilitation and reconstruction. Disease surveillance continues to be strengthened across the region in order to identify potential outbreaks rapidly.

Although infectious diseases pose the greatest health risks, in some cases toxic chemicals may have entered water supplies[2]. In addition, wound-associated infections from injuries caused by the tsunami may result in tetanus. As of 24 January more than 90 cases have been reported in Banda Aceh, Meulaboh and Sigli[2,3]. All seem to be the result of injuries sustained on the day of the tsunami. New cases are on the decline.

However, we must not forget the short to long term mental health impacts on the community from the shock of the disaster and loss of loved ones, homes and livelihoods. Concerns are also had for those Relief Workers and Planners on the ground responding to the disaster, as well as the general public around the world, especially children, who are exposed to the tragedy through the media[1]. WHO reports that many people in the affected areas clearly need psychosocial care[2].

It is important that health practitioners are aware of the diseases and health concerns for travellers going to or returning from the affected areas. The following websites contain useful information and guidelines for responding to health concerns caused by natural disasters. Links to sites covering this particular tsunami disaster are also to be found.

[1]www.bt.cdc.gov/disasters/tsunamis/
[2]www.who.int/hac/crises/international/asia_tsunami/en/
[3]Dr Tony Stewart, Medical Epidemiologist, Centre for International Health, Burnet Institute for Medical Research and Public Health, Australia. ProMED Digest 2005(35). www.promedmail.org
www.moh.govt.nz/moh.nsf

2. Notifiable Disease Surveillance

The following is a summary of disease notifications for the October-December quarter of 2004 and cumulative notifications and rates calculated for a 12-month period (January - December 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 in EpiSurv by public health service staff up to 18 January 2005. As this information may be updated over time, these data should be regarded as provisional.

The National Surveillance data tables are available online (www.surv.esr.cri.nz).

VACCINE PREVENTABLE DISEASE

Measles

- *Notifications:* 14 notifications in the quarter (2003, 25); 34 notifications over the last 12-months (2003, 67) giving a rate of 0.9 cases per 100,000 population (2003, 1.8); statistically significant decrease
- *Comments:* 3 laboratory confirmed cases, 8 probable cases, 2 cases under investigation and 1 unknown case

Pertussis

- *Notifications:* 1,723 notifications in the quarter (2003, 185); 3,492 notifications over the last 12-months (2003, 584) giving a rate of 93.4 cases per 100,000 population (2003, 15.6); statistically significant increase
- *Comments:* this quarter had the highest number of pertussis notifications recorded in any one-quarter period with 650 confirmed, 862 probable, 107 suspect, 50 under investigation, 48 missing and 6 unknown cases. 2004 pertussis notifications are only 648 notifications less than the last pertussis epidemic in 2000 (notifications total of 4,140)

Meningococcal Disease

- *Notifications:* 83 notifications in the quarter (2003, 112); 346 notifications over the last 12-months (2003, 542) giving a rate of 9.3 cases per 100,000 population (2003, 14.5); statistically significant decrease
- *Comments:* 2 deaths were recorded in the quarter

INFECTIOUS RESPIRATORY DISEASES

Acute Rheumatic Fever

- *Notifications:* 17 notifications in the quarter (2003, 28); 74 notifications over the last 12-months (2003, 151) giving a rate of 2.0 cases per 100,000 population (2003, 4.0); statistically significant decrease
- *Comments:* 14 cases were in the 5-14 year age range and 3 cases were in the 15-30 year range

ENTERIC INFECTIONS

Campylobacteriosis

- *Notifications:* 3,606 notifications in the quarter (2003, 4,467); 12,235 notifications over the last 12-months (2003, 14,790) giving a rate of 327.4 cases per 100,000 population (2003, 395.7); statistically significant decrease

Salmonellosis

- *Notifications:* 271 notifications in the quarter (2003, 327); 1,095 notifications over the last 12-months (2003, 1,401) giving a rate of 29.3 cases per 100,000 population (2003, 37.5); statistically significant decrease

Shigellosis

- *Notifications:* 39 notifications in the quarter (2003, 23); 140 notifications over the last 12-months (2003, 87) giving a rate of 3.7 cases per 100,000 population (2003, 2.3); statistically significant increase

Gastroenteritis

- *Notifications:* 323 notifications in the quarter (2003, 282); 1,358 notifications over the last 12-months (2003, 1,026) giving a rate of 36.3 cases per 100,000 population (2003, 27.5); statistically significant increase
- *Comments:* note that this is not a notifiable disease *per se* except in persons with a suspected common source or with a high risk occupation, and the term 'gastroenteritis' provides a catch-all category for enteric diseases that are not notifiable and for syndromic reports that come through public health units, including direct reports from the public

ENVIRONMENTAL EXPOSURES AND INFECTIONS

Cryptosporidiosis

- *Notifications:* 291 notifications in the quarter (2003, 317); 611 notifications over the last 12-months (2003, 818) giving a rate of 16.3 cases per 100,000 population (2003, 21.9); statistically significant decrease

Hepatitis B

- *Notifications:* 6 notifications in the quarter (2003, 11); 39 notifications over the last 12-months (2003, 61) giving a rate of 1.0 cases per 100,000 population (2003, 1.6); statistically significant decrease

Legionellosis

- *Notifications:* 14 notifications in the quarter (2003, 29); 63 notifications over the last 12-months (2003, 77) giving a rate of 1.7 cases per 100,000 population (2003, 2.1); not a statistically significant decrease
- *Comments:* there has been a statistically significant quarterly decrease from the same quarter last year

Yersiniosis

- *Notifications:* 78 notifications in the quarter (2003, 124); 422 notifications over the last 12-months (2003, 439) giving a rate of 11.3 cases per 100,000 population (2003, 11.7); not a statistically significant decrease
- *Comments:* there has been a statistically significant quarterly decrease from the same quarter last year

Chemical Poisoning

- *Notifications:* no notifications in the quarter (2003, 0); 7 notifications over the last 12-months (2003, 1) giving a rate of 0.2 cases per 100,000 population (2003, 0); statistically significant increase

NEW, EXOTIC AND IMPORTED INFECTIONS

Dengue Fever

- *Notifications:* no notifications in the quarter (2003, 1); 8 notifications over the last 12-months (2003, 55) giving a rate of 0.2 cases per 100,000 population (2003, 1.5); statistically significant decrease

Brucellosis

- *Notifications:* 1 notification in the quarter (2003, 0); 2 notifications over the last 12-months (2003, 0) giving a rate of 0.05 cases per 100,000 population (2003, 0); not a statistically significant increase
- *Comments:* the case (confirmed by isolation of the organism) was an adult male who had worked in an abattoir in the late 1960's to mid 1980's before New Zealand became *Brucella*-free

Barmah Forest Virus Infection

- *Notifications:* 1 notification in the quarter (2003, 0); 1 notification over the last 12-months (2003, 0) giving a rate of 0.03 cases per 100,000 population (2003, 0); not a statistically significant increase
- *Comments:* the confirmed case was a young female with a travel history to Queensland, Australia

Hydatid Disease

- *Notifications:* 1 notification in the quarter (2003, 0); 1 notification over the last 12-months (2003, 0) giving a rate of 0.03 cases per 100,000 population (2003, 0); not a statistically significant increase
- *Comments:* the laboratory confirmed case was an adult female farmer who had contact with dogs

Ross River Virus Infection

- *Notifications:* 1 notification in the quarter (2003, 0); 5 notifications over the last 12-months (2003, 1) giving a rate of 0.13 cases per 100,000 population (2003, 0.03); not a statistically significant increase
- *Comments:* the case had been living and working in the Northern Territory of Australia for more than one year and had recently returned to New Zealand

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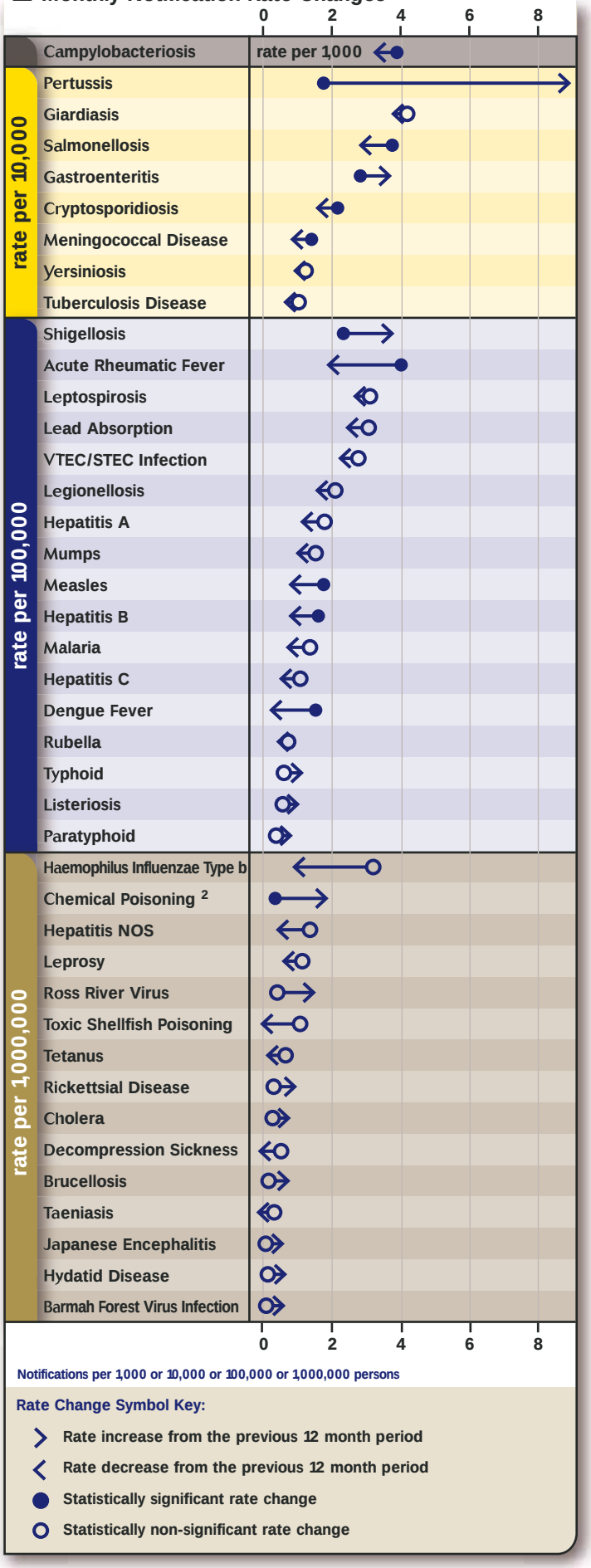
National Surveillance Data

12-Monthly Notification Rate Changes [1]



Notifications per 1,000 or 10,000 or 100,000 or 1,000,000 persons

Rate Change Symbol Key:

- Rate increase from the previous 12 month period
- Rate decrease from the previous 12 month period
- Statistically significant rate change
- Statistically non-significant rate change

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

[2] from the Environment

3. Other Surveillance Reports

Changing Outbreak Demographics: Pertussis 2000 and 2004

The pertussis outbreak that started in 2004 is likely to continue through 2005 if previous epidemic patterns are repeated (Figure 1).

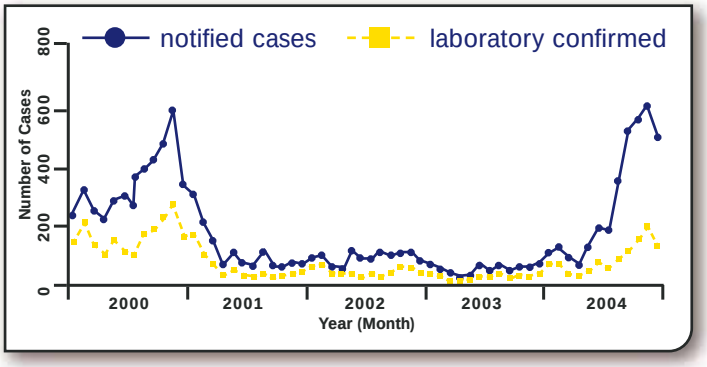


Figure 1 Number of pertussis cases by month January 2000 – December 2004.

Though early, it is interesting, and possibly instructive to note that there are some demographic differences emerging between this and the previous outbreak, particularly the change in age distribution of cases (Table 1 and Figure 2). Assuming that there have been no major changes in population between 2000 and 2004, we have used case numbers to examine the demographic differences.

Table 1 Comparison of the number of cases for the pertussis outbreaks of 2000 and 2004.

	2000 Cases	2000 %	2004 Cases	2004 %*	2000-2004 change %
Total cases	4140		3492		
Cases 0-19 years	3230	78	2071	59	-19
Males	1561	38	992	28	-10
Females	1669	40	1061	30	-10
Cases 20+ years	857	22	1421	41	+19
Males	254	6	486	14	+8
Females	603	15	921	26	+11
Cases sex unknown	49	1	37	1	
Cases age unknown	4		2		

*Some totals do not add up to 100% because of rounding and the small percentage of cases for which either age or sex was unknown.

There is an increase of 19% in the number of cases occurring in those aged 20+ years and a decrease in the younger age groups. The high incidence in adults has already been referred to in Vol 2 Iss 4 of the NZPHSR. This is a difficult problem to deal with in terms of prevention. It is important for the public and clinicians alike to be aware of this increased pool of infection.

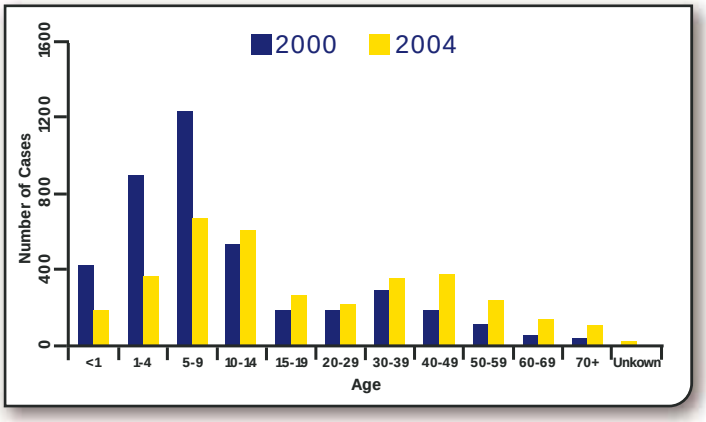


Figure 2. Comparison of number of cases by age group for the pertussis outbreaks of 2000 and 2004.

In both 2000 (15%) and 2004 (26%) the percentage of cases in female patients aged 20+ years was higher than that in males (6% and 14% respectively). The increase between 2000 and 2004 for females was 11% and that for males was 8%.

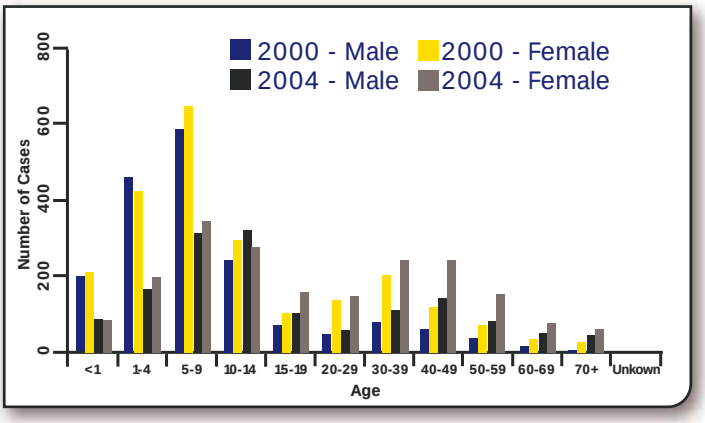


Fig 3. Number of cases by age group and sex for pertussis outbreaks of 2000 and 2004.

Adult females often have greater contact with young children, who usually have a higher incidence of the disease, but in 2004 there has been an increase in cases in the adult female population in spite of the decrease in pertussis cases in small children. The difference also persists into the older age groups.

In most DHBs, the number of cases in 2004 is less than, or almost the same as, 2000. This is probably because the new outbreak is still ongoing. The most notable exception is Southland where the increase has been very large indeed. In Southland, the 2000 outbreak actually started much earlier, in August 1999. Even when this is allowed for they have almost double the number of cases from 341 (1999 + 2000) to 613 for 2004.

As stated above, the outbreak is not yet over, but the changing demography may indicate a need to consider changes in practice.

Reported by Dr Graham MacBride-Stewart, Population & Environmental Health Programme, Institute of Environmental Science and Research

GeoHealth 2004

23-25 November 2004, Wellington, New Zealand

GeoHealth2004 was the second Geographic Information System (GIS) in Public Health conference to be run in New Zealand (GeoHealth2002, 6-9 December 2002, Wellington) and it again attracted a host of public health practitioners from the region and abroad. GeoHealth – the application of geographic technologies in the health sector – had three themes underlying the original call for papers - surveillance, intervention and policy. These were translated into three more or less similar streams of presentations: surveillance, infrastructure and planning & policy.

Presentations in the surveillance stream once again demonstrated the power of GIS to integrate diverse sources of data. This is as important as ever and more timely than the presenters could have imagined with the Boxing Day tsunami disaster sweeping across the Indian Ocean only a month after the conference. More poignant than any presentation at a conference could be, this disaster again demonstrated the importance of having timely integrated information from numerous sources: meteorological, health system, transportation, topographic, population, infrastructure to name but a few. Without this information being already compiled and maintained, effective disaster relief is more difficult. Surveillance professionals are in a similar position in that there is no time to compile regional information when an outbreak is occurring – SARS and avian influenza being two recent examples.

It was no great surprise that the second largest grouping of papers at GeoHealth2004 should be centred on the topic of 'infrastructure'. Building capacity, human, data and information technology, is an enduring issue and the need for GeoHealth capacity is greater than ever. Many presentations looked at the issue of poor resourcing and the lack of training as an opportunity to exploit the potential of very simple web deployed GIS both within organisations and through the Internet. This has been a developing technology for several years with many commercial products and programming tools now available. In a notable departure from other GIS in Health conferences, there were several presentations looking at the role of GIS in disease transmission modelling – a promising marriage that may provide useful information tools for public health professionals.

The Planning & Policy stream rounded out the conference with a variety of papers that took the audience through the evidential process of policy development. Additionally, planning for large scale vaccination campaigns and other health service delivery now routinely appears to examine a host of spatially distributed risk factors particularly area-based socio-economic deprivation measures and population structure. In New Zealand, while most of the capacity building effort has been at the public health unit level, the technology and skills appear, in many regions, to have moved from 'coal-face' into the District Health Board's planning offices.

GeoHealth2004 was an essential continuation of capacity building efforts in New Zealand and the 85 participants provided an energetic assembly demonstrating that GeoHealth is alive and continuing to grow within the health sector. Supplemented by a number of speakers and participants from Canada, USA, UK, Hong Kong, Australia, Fiji, Malaysia and Spain – the conference provided an opportunity to exchange information and progress with colleagues who are primarily practitioners and/or researchers contributing to the application of GeoHealth. The conference proceedings can be downloaded in PDF form from the conference web site, www.geohealth2004.org.

Reported by Chris Skelly, Population & Environmental Health Group, Institute of Environmental Science and Research, Kenepuru Science Centre

Genotyping of *Mycobacterium tuberculosis* to improve surveillance

Since 1988, between 300 and 500 cases of tuberculosis (TB) have been notified annually, and there is evidence of a gradual increase in incidence. Control of TB relies on a range of strategies, including surveillance. Molecular typing of *M. tuberculosis* is now considered an essential component of outbreak surveillance. The technique currently used worldwide to type *M. tuberculosis* is a standardised restriction fragment length polymorphism (RFLP) method based on the variable integration of IS*6110* in the TB genome. Molecular typing in New Zealand has been used in the past to confirm epidemiological data suggesting the likely source of TB infection. The molecular typing of *M. tuberculosis* enables clinicians and public professionals to:

- distinguish between relapse and exogenous reinfection among persons who have recurrent TB after treatment
- focus outbreak investigation activities by excluding persons with coincidental TB with a strain distinct from the outbreak strain
- detect clusters of cases without previously suspected epidemiological links, thereby enabling detection of unsuspected venues or routes of transmission
- evaluate the effectiveness of routine contact investigation and management
- characterise the burden of disease associated with endemic transmission, as distinguished from imported cases, thereby informing TB control policy
- identify persons with false-positive cultures due to cross-contamination in the laboratory or in specimen collection, thereby preventing unnecessary treatment and public health follow-up

continued...

Between 1 July 2002 and 26 May 2004, 548 of 1,904 specimens sent to LabPlus were strain-typed using the IS*6110* RFLP method. Isolates were not generally typed in the same month as they were received due to the requirement for growing the bacilli and purifying the genomic DNA. The results indicated the presence of 54 possible clusters involving 192 cases. There were between 1 and 20 cases in each of the identified clusters.

Nationally, 35% of all cases were in the identified clusters. Three Territorial Local Authorities had higher proportions of cluster related cases: Waitakere 53%, Napier 78% and in Franklin 100% of cases were associated with identified clusters. Auckland had a significantly lower proportion of cluster related cases (25%) than found nationally.

There was no significant difference between the gender of cases that were part of clusters when compared with cases that were not within the RFLP clusters. However, the age distributions of cases were significantly different between cases belonging to an RFLP identified cluster and those having a sporadic RFLP type (Kolmogorov-Smirnov test statistic = 0.18). The mean age of a case with a sporadic RFLP type was 30 years, compared to 16 years in an RFLP cluster.

International studies suggest that at least two years of typing data are required in order to make a reasonably accurate assessment as to whether cases are endemic or imported. In New Zealand this may take longer, as we have low case numbers and a high proportion of overseas-acquired disease. However, integration of molecular and epidemiological data is required, as a database of strain types alone is of limited use until this is implemented. This project has demonstrated the potential utility of molecular typing in the epidemiological investigation of mycobacterial infection in New Zealand.

Reported by Naomi Boxall, Population & Environmental Health Group, Institute of Environmental Science and Research, Kenepuru Science Centre

5. Outbreak Case Reports

Waterborne *Shigella* outbreak

On 17 November 2004, Community and Public Health were notified of a case of shigellosis in a 49 year old male who had a recent history of overseas travel. However investigation of what on the surface looked like an overseas travel acquired infection, identified a substantial waterborne outbreak.

The outbreak occurred at a meditation retreat on Banks Peninsula and resulted in five laboratory confirmed and 18 probable cases of shigellosis.

The retreat provided long-term accommodation for approximately 12 residents and also catered for a number of shorter term (mainly British) visitors. Even though many of the residents and visitors were very ill with diarrhoeal illnesses for one to two weeks few sought medical attention and only one was diagnosed with shigellosis. Those at the retreat underestimated the severity and extent of the outbreak and they had not considered advising anyone of the illness. It was six weeks after the start of this outbreak that the local public health unit became aware of it.

Two travellers suffering from a diarrhoeal illness acquired one month previously in India, stayed overnight on 28 September 2004. ESR Public Health Laboratory subsequently identified one confirmed shigellosis case on 24 November, approximately three months after being infected. Four days after their visit (1

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4. Outbreak Surveillance

The following information is a summary of the outbreak trends for New Zealand, from data collected in the October–December 2004 quarter. Comparisons are made to the previous quarter (July - September 2004), and to the same quarter in the previous year (October–December 2003). Note that the outbreak data in this section are notified to ESR by the Public Health Services.

General

- 85 outbreaks notified in this quarter (653 cases)
- 30 are 'final' reports (412 cases); 55 are 'interim' reports (241 cases) that have yet to be finalised and closed
- 13.7 cases on average per outbreak, compared with 13.6 cases per outbreak in the previous quarter (9.2 cases per outbreak in the same quarter of last year)
- no deaths, but 10 hospitalisations this quarter (hospitalisations: norovirus, 10 cases)

Pathogens

- 10 norovirus outbreaks (284 cases) during this quarter
- 6 'gastroenteritis' outbreaks (44 cases)
- 4 campylobacteriosis outbreaks (17 cases)
- 3 cryptosporidiosis outbreaks (9 cases)
- 2 outbreaks each of *Bordetella pertussis* (8 cases), *Clostridium perfringens* (40 cases) and giardiasis (6 cases) and 1 yersiniosis outbreak (4 cases)

Modes of Transmission

Note that reporting allows for multiple modes of transmission to be selected. In many instances no mode of transmission is selected for outbreaks notified to ESR, consequently, numbers may not add up to the total number of outbreaks reported.

- 16 person-to-person, from (non-sexual) contact with an infected person (including droplets): 8 norovirus (275 cases), 2 gastroenteritis (32 cases), 2 *B. pertussis* (8 cases) and 1 outbreak each of *C. jejuni* (5 cases), *Y. enterocolitica* (4 cases), *C. parvum* (4 cases) and *Giardia* (3 cases)
- 11 food borne, from consumption of contaminated food or drink (excluding water): 5 gastroenteritis (23 cases), 2 outbreaks each of *C. perfringens* (40 cases) and *Campylobacter* (10 cases) and 1 outbreak each of norovirus (107 cases) and *Y. enterocolitica* (4 cases)
- 4 mode of transmission unknown: 2 norovirus (9 cases) and 1 outbreak each of *C. parvum* (2 cases) and *Campylobacter* (2 cases)
- 1 environmental, from contact with an environmental source (e.g. swimming): norovirus (61 cases)
- 2 waterborne, from consumption of contaminated drinking water: 1 outbreak each of *Y. enterocolitica* (4 cases) and *Giardia* (3 cases)
- 3 zoonotic, from contact with an infected animal: 1 outbreak each of *Y. enterocolitica* (4 cases), *Giardia* (3 cases) and *C. parvum* (3 cases)

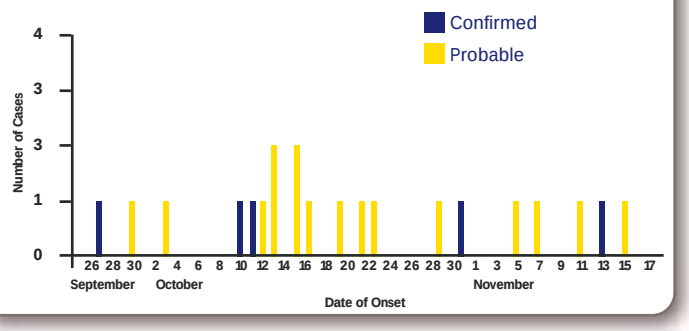
Circumstances of Exposure/ Transmission

Common 'settings' where exposure/ transmission occurred or contaminated food/beverage was prepared for consumption are identified below. Note that multiple settings can be selected and in many instances no settings are selected in outbreaks notified to ESR.

- 5 rest home: 4 norovirus (195 cases) and 1 gastroenteritis (21 cases)
- 3 café: gastroenteritis (10 cases)
- 3 caterers: 2 *C. perfringens* (40 cases) and 1 norovirus (7 cases)
- 2 hospital (acute care): norovirus (30 cases)
- 2 farm: 1 *Y. enterocolitica* (4 cases) and 1 *C. parvum* (3 cases)
- 1 hostel: norovirus (49 cases)
- 1 supermarket: gastroenteritis (2 cases)
- 1 childcare: *Campylobacter* (5 cases)
- 1 school: *B. pertussis* (6 cases)

October 2004) the first case of gastrointestinal illness occurred in a long term resident at the retreat. Onset in additional cases occurred through to 15 November 2004, with case numbers peaking (eight cases) between 12-16 October 2004.

***Shigella* Outbreak Epicurve**



The residents suspected the possibility of a contaminated water supply and a water sample taken on 14 October 2004 was positive for *E. coli*. One of the visitors, a plumber, assessed the spring-fed water supply and the sewage system. A break in the effluent line, from the septic tank, was discharging sewage directly above the water supply intake. The breakage was repaired and the water supply source changed to a well on a neighbouring farm.

Initial cases were most likely waterborne, but as case numbers increased person-to-person spread was likely due to the sharing of bathroom, toilet and accommodation facilities by some residents and visitors.

Further evidence supporting a waterborne outbreak included three breast fed babies, aged 5 and 6 months, not becoming infected, and a Lyttelton resident who visited the centre for approximately one hour and refilled a water bottle, became ill the following day.

Community and Public Health and ESR are currently working with the facility management on a Public Health Risk Management Plan for a small community water supply.

Dianne Morrison and Debbie Smith, Health Protection Officers, Community and Public Health, Canterbury District Health Board

Norovirus outbreak at a student residence

On 6 December 2004, the Waikato DHB Public Health Unit received a self-notification of a single case of gastrointestinal (GI) disease. On questioning, the case had, for the two days prior to being ill, attended a national secondary school sports championship being held in Hamilton. At around the same time the PHU was also notified, by a local accident and medical clinic, of five cases of diarrhoea and vomiting that had presented over the last 12 hours. They had all attended the games. Anecdotal information suggested that there were many more people who had also attended the event who were ill with similar symptoms.

Using an adapted trawling GI disease questionnaire, it was discovered that all five had been officials at the games and had eaten sandwiches provided. The sandwiches were in separate cellophane packs. Information was also gathered from other sources including the games organisers and other self notifiers.

No fault was found with the caterer's processes; for example, there were separate areas for raw and cooked food preparation, adequate hand washing facilities were available and the mayonnaise used was shop bought. No food samples or swabs were taken as the PHU was advised that all left over food from the weekend had been discarded.

The PHU was able to interview approximately 18 cases on 6 December 2004. The information gathered suggested that the only factor linking all those interviewed was that they had all eaten sandwiches (different fillings) provided by the games on the Saturday afternoon. Over the next day, from further information gathered, it appeared that possibly 300 cases of GI disease were associated with the games.

It appears that the vehicle of transmission was the sandwiches served on Saturday and that from the incubation period and symptoms described it was most likely to be *Salmonella*, *Campylobacter* or norovirus.

On 7 December 2004, the public health unit was notified by a GP that a group of students (about 15) staying at the University in Hamilton, had symptoms of GI disease. These cases and another group (also ill) staying in another block of the same halls were interviewed. Faecal specimens were collected from two cases. The groups did not mix and had eaten different foods, and the canteen preparing their food was not the same caterer at the recent sports event. There was no obvious risk factor identified except they were staying in halls that had recently been used for the games. After deliberation, it was decided that this was probably secondary transmission due to contamination of the halls of residence and the most likely organism was norovirus. It was recommended that the halls should have increased cleaning of all surfaces with a bleach solution and steam cleaning of all carpets. Norovirus was identified in faecal specimens taken from both groups.

In summary, this was a large outbreak of GI disease associated with norovirus; the most likely vehicle of transmission initially was sandwiches followed by a large group of secondary cases after contamination of university halls.

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

6. Pathogen Surveillance

Unless otherwise reported, pathogen surveillance covers the October-December quarter.

ENTERIC PATHOGENS

The Enteric Reference Laboratory (ERL) is responsible for the confirmation of the following notifiable diseases *Salmonellae*, *Shigellae*, *Vibrio cholerae* O1 and VTEC.

Salmonella (ERL)

Human and non-human Salmonella isolate data are available at www.surv.esr.cri.nz/enteric_reference/enteric_reference.php

- 301 human and 278 non-human isolates were submitted to the Enteric Reference Lab (2003: 406, 161 respectively)
- increased isolations of *S.* Brandenburg from endemic areas of the South Island (Canterbury, Southland, Otago, n = 30, 2003, n = 7)
- corresponding increase in sheep abortions in Southland and Otago
- *S.* Typhimurium phage type 160 predominant human isolate
- 3 new serotypes confirmed from human cases, *S.* Altona, *S.* Okatie, *S.* Wangata
- PFGE analysis of a selection of human and non-human isolates of *S.* Brandenburg and *S.* Typhimurium phage type 160 demonstrated the same clonal strains as seen in previous years are responsible for current infections

VTEC/STEC (ERL)

- 15 laboratory confirmed human cases of *E. coli* O157:H7 (2003: 27 cases)
- 1 laboratory confirmed non-O157:H7 case, O177:HNM

continued...

Norovirus (Norovirus Reference Laboratory)

- 54 outbreaks were reported
- 32 (59.2%) outbreaks occurred in rest homes and hospitals
- 7 outbreaks occurred in catered settings
- a further 7 outbreaks occurred in catered or home settings but foodborne transmission was not confirmed for these outbreaks
- 1 outbreak was associated with consumption of oysters and raw fish; no norovirus was detected in the oysters
- 2 children were infected after visiting a popular Dunedin beach where a public health warning was in place
- genotype GII/1,4,8 continued to be the predominant strain and was identified in 42 (77.8%) outbreaks, including 27 rest home and hospital outbreaks
- a variant GII/1,4,8 strain has circulated through New Zealand during 2004 and was responsible for 19 outbreaks during this quarter
- other genotypes identified were GI/2 Southampton virus, GI/4, GII/2 Melksham virus and one strain belonging to a newly characterised genotype, GII/m

LEGIONELLOSIS AND ENVIRONMENTAL LEGIONELLA

- 21 legionellosis cases were laboratory-confirmed by the Legionella Reference Laboratory at ESR
- all cases were sporadic
- 10 cases fitted the confirmed case definition and 11 cases fitted the probable case definition
- only 13 of the 21 cases have been notified to date
- no deaths due to legionellosis have been reported this quarter
- confirmed legionellosis cases demonstrated either antibody titres >512 on two or more occasions (5 cases), or at least a four-fold rise in antibody titre (4 cases), or legionella bacteria were isolated (1 case)
- 9 probable cases were serologically demonstrated with either a single antibody titre >512 or with stable or rising antibody titres to 512
- 2 further probable cases were identified as *L. pneumophila* infections; one using the urinary antigen test and the other using PCR & DNA sequencing
- *L. pneumophila* serogroup 1 was the causative agent in 4 cases, 1 of which serologically showed a mixed infection with *L. pneumophila* serogroup 15
- *L. pneumophila* serogroup 4 was identified in 1 case
- *L. longbeachae* was identified in 10 of the 21 cases, all associated with exposure to compost or potting mix
- *L. bozemanii, L. gormanii* and *L. hackeliae* infections were identified by serology in a further 3 cases
- legionella species were not identified in a further 2 cases

RESPIRATORY VIRUSES

The figures given in this section refer to the period July-December 2004

Influenza Virus

- 844 isolations of influenza virus were reported (2003, 891)
- 771 were typed as influenza A and 73 as influenza B
- 331 of the type A were sub-typed as A/Fujian/411/2002 (H3N2)-like viruses and 313 as A/Wellington/1/2004 (H3N2)–like viruses
- recommendations for the 2005 influenza vaccine composition are A(H1N1) an A/New Caledonia/20/99-like strain, A(H3N2) an A/Wellington/1/2004-like strain and B a B/Shanghai/361/2002-like strain

Respiratory Syncytial Virus & Rhinovirus

- 500 cases of respiratory syncytial viruses were reported (2003, 741)
- 72 isolations of rhinoviruses were reported (2003, 43)

Parainfluenza Virus

- 100 parainfluenza viruses were reported, parainfluenza type 1 (44), type 2 (5) and type 3 (51)

ADENOVIRUSES AND ENTEROVIRUSES

Adenoviruses

- 191 adenoviruses were reported (2003, 111)
- Adenovirus type 3 was the predominant serotype
- 136 adenoviruses were serotyped as adenovirus type 1 (11), type 2 (22), type 3 (42), type 4 (3), type 5 (5), type 8 (8), type 10 (19), type 11 (2), type 13 (1), type 14 (3), type 15 (3), type 19 (8), type 23 (1), type 25 (1), type 26 (1), type 29 (3), type 41 (3)

Enteroviruses

- 153 enteroviruses were reported (2003, 49)
- 75 enteroviruses were serotyped as Coxsackie B1 (6), Coxsackie B4 (3), Coxsackie B5 (13), Coxsackie B6 (1), Coxsackie A6 (1), Coxsackie A8 (2), Coxsackie A9 (2), Coxsackie A16 (1), Echovirus 5 (10), Echovirus 9 (1), Echovirus 11 (6), Echovirus 20 (1) and Echovirus 30 (28)

SPECIAL BACTERIOLOGY

Listeria monocytogenes

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

Corynebacterium diphtheriae

- 2 cutaneous isolates of *Corynebacterium diphtheriae* (var. *mitis* and var. *gravis*) were received for toxigenicity testing, typing and surveillance purposes
- the patients were aged 21 and 37 years from Auckland
- the isolates were non-toxigenic by PCR examination for the toxin gene

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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