Chemical Injury and Agrichemical Spraydrift Surveillance

3rd Quarterly Report:

Mid January 2004 to Late March 2004

Prepared for the New Zealand Ministry of Health

March 2004

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Client Report
FW 0415

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ACKNOWLEDGEMENTS

The author wishes to thank the following for providing data for inclusion in this report: Jeff Chuter (Coronial Services Office), Chris Lewis (NZHIS) and Vern Newcombe (West Coast Public Health Unit).

Thanks must also be given to Jeff Fowles and Carol Kliem (ESR) for their ongoing contributions to the Chemical Injuries and DriftNet projects.

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1. Purpose of Report

This is the third quarterly report for the financial year 2003-2004 on two projects (Chemical Injury Surveillance and Agrichemical Spraydrift) contained in the MoH/ESR Environmental Health Surveillance Service Description. The quarterly reports are intended to provide an update on the progress of each project in relation to agreed milestones, and to highlight potential problems, proposed or necessary shifts in approach, or any other issue that may affect the composition of or timeline for deliverables. The reports also contain updates on key statistics relating to chemical injury, culminating in a final report on all statistics being submitted in June.

2. Chemical Injury Surveillance

2.1. General Overview

The quarterly environmental health service description meeting with the Ministry of Health was held on 27 January 2004. Issues discussed included attainment of NPC data and the future direction of DriftNet. See sections 2.5 and 3 of this report respectively for more details.

A meeting with ERMA was held on 5 February 2004. ERMA, MoH and ESR staff were represented. The main agenda item was the utilisation of CISS data by ERMA to monitor the effectiveness of the HSNO Act. An agreement is currently being drawn up for provision of CISS data to ERMA.

Hardcopies of the previous quarterly report and annual report were sent to all PHS Managers in late January. An article on CISS was published in the "Other Surveillance Reports" section of the summer edition of the New Zealand Public Health Surveillance Report (NZPHSR). CISS reports are now also available on the ESR Public Health Surveillance website (**http://www.surv.esr.cri.nz/**). As a result of this exposure it is hoped that additional PHUs, hospital and GP's will contribute data to the CISS.

Data extracts were received on schedule in February from NZHIS and the CSO. Next quarterly downloads are expected in May. CSO results for the period 1 January 2001 to 31 December 2003 and NZHIS results for 2003 are summarised in sections 2.2 and 2.3 of this report respectively.

Poisoning notification data for 2003 from West Coast Public Health Unit was received in February. Several other Public Health Units indicated that data was available. Further detail is presented in section 2.4

The following table presents the number of cases by DHB during 2003 captured by the various data agencies:

Table 1: CSO, NZHIS and PHU notification data by DHB (2003)

DHB	CSO (deaths to date)	NZHIS (admitted patients)	PHU Notifications
Northland	13	270	
Waitemata	10	914	Approximately 1450, almost all from Auckland City Hospital
Auckland	9	818	
Counties Manukau	8	717	
Waikato	11	617	
Lakes	0	168	
Bay of Plenty	10	272	
Tairawhiti	3	78	
Taranaki	4	165	
Hawke's Bay	0	183	313
Whanganui	3	106	
Midcentral	7	179	
Hutt	4	252	
Capital and Coast	6	225	
Wairarapa	1	69	
Nelson Marlborough	1	232	
West Coast	1	98	47
Canterbury	6	1256	
South Canterbury	2	76	
Otago	9	351	
Southland	4	124	
Area outside DHB	0	40	N/A
TOTAL	**112**	**7210**	**N/A**

2.2. Poisoning Mortality (CSO Data)

The latest quarterly data received in February from the CSO is current as of 31 January 2004. The next download is to be received in early May 2004.

The number of deaths attributable to chemical injuries in New Zealand for 2001 and 2002 was 233 and 225 respectively. The number of deaths for 2003 was 112 (remembering that it may take up to 2 years for records of deaths to be filed at the CSO). The corresponding rate for 2001 was 6.2 deaths per 100 000 population and for 2002, 6.0 per 100 000 population.

DHBs with the greatest number of deaths for 2001 were Canterbury (28) and Waitemata (24) but the highest rate was from the West Coast (13.2 per 100 000 population, 4 deaths). 2002 trends were similar; again West Coast had the highest rate (19.8 per 100 000, 6 deaths) and Canterbury the highest number of cases (along with Auckland DHB, 24 deaths apiece). However care must be taken when interpreting all of these rates due to the small numerators.

Where intent was known, the majority of deaths, nationally, were intentional (70% in 2001, 71% in 2002 and 81% for 2003).

For 2001 and 2002, by far the greatest number of cases and highest age specific rates occurred in the 25-44 year age group (123 deaths, 11.1 per 100 000 in 2001 and 115 deaths,

10.4 per 100 000 in 2002). Preliminary data for 2003 show that this age group also has the highest number of deaths (52) and rate (4.7 per 100 000 population) but the difference in magnitude from the other age groups is not as considerable as for 2001 and 2002.

Over two thirds of the deaths in 2001 and 2002 were male. This trend is continuing with the 2003 data to date.

The ethnicity-specific rate for Europeans in 2001 (6.3 per 100 000 population) was above that of the national average. The rates for Maori and Pacific Peoples were 4.8 and 4.0 per 100 000 respectively. Less than half of the deaths for Maori and Pacific Peoples were deemed intentional compared to over 70% for deaths of European ethnicity. In 2002, the rate for Maori was the greatest (6.1 per 100 000 population compared to 5.9 for Europeans and 2.5 for Pacific Peoples). The drop in the Pacific Peoples rate compared to 2001 was accompanied by a decrease in the number of intentional deaths. In contrast to the previous quarterly report, the ratio of intentional to unintentional deaths for Maori was similar between the two years. For Europeans there was a greater proportion of intentional deaths in 2002 compared to 2001. Ethnicity-specific rates for 2003 to date are similar between European and Maori, but with a higher proportion of intentional deaths than for the previous two years.

Forty-five different primary cause chemical substances were associated with the 2001 deaths, 42 with the 2002 deaths and 26 with the 2003 deaths to date. Carbon monoxide was the most common substance primarily responsible for the deaths in all years, accounting for 46% of the total deaths (262/570). In particular, it was attributed to two thirds of the intentional deaths. The leading primary substances for unintentional deaths in both 2001 and 2002 were methadone (13 and 15 deaths respectively), morphine or heroin (13 and 10 deaths respectively) and ethanol (12 and 9 deaths respectively). These three substances also feature prominently in the 2003 unintentional deaths.

2.3. Poisoning Hospitalisations (NZHIS Data)

The latest quarterly data received in February from the NZHIS is current as of 30 January 2004. The next download is to be received in early May 2004. The following is a summary of the NZHIS data for 2003. Please note that the data are provisional and subject to change. The annual report (due in June) will report on the more complete data set once the May extract has been received.

Provisional figures for 2003 show that there were 7210 poisoning cases admitted to hospitals and recorded by NZHIS nationally, giving an annual rate of 192.9 per 100 000 population. Sixty-four percent of the hospitalisations were intentional, 34% unintentional and the remainder of indeterminate intent.

DHB's with the highest rates were West Coast (323.8 per 100 000 population) and Canterbury (294.1); those with the lowest rates were Capital & Coast (91.5) and MidCentral (115.5). These regional patterns for hospitalisations are also reflected in the mortality statistics.

The 15-24 years age group again had the highest total and intentional rates (349.9 and 272.6 per 100 000 population respectively) but the 25-44 years age group had the highest number of

actual hospitalisations (2841 total and 2207 intentional). The highest number of cases (691) and rate (255.2 per 100 000 population) across the country for unintentional cases was in the 0-4 years age group.

The split by sex for unintentional hospitalisations was fairly even, but for intentional hospitalisations, there was just under two and a half times more females admitted to hospitals than males.

For hospitalisations of all intents, the rate for Europeans and Maori was the same (200.1 per 100 000). Europeans had the highest intentional rate (132.8 per 100 000 population), Pacific Peoples the highest unintentional rate (82.9), followed closely by Maori (81.3).

Average length of stay for all hospitalisations was 2.4 days with one third of patients staying for less than one day.

The most common intentional ICD-10 "e-code" assigned was X61 (antiepileptic, sedative-hypnotic, antiparkinsonsim and psychotropic drugs, not elsewhere classified) (2272 instances – note that each hospitalisation record can have up to 10 e-codes assigned). The most common unintentional e-code assigned was X44 (other and unspecified drugs, medicaments and biological substances) (576 instances), followed by X41 (antiepileptic, sedative-hypnotic, antiparkinsonsim and psychotropic drugs, not elsewhere classified) (432 instances).

2.4. Hospital Presentation for Poisoning (PHS Data)

At ESR's request, the MoH forwarded ESR copies of the annual HSNO reports filed by PHUs. Several of these contained hazardous substance notification data so subsequently ESR approached the relevant PHUs. As a result, West Coast has provided ESR with 2003 notification data for incorporation into CISS and several other PHUs including Wairarapa, Gisborne and Southland have indicated that they should be able to provide data.

Hawkes Bay data for 2003 was summarised in the last quarterly report and more detail will be included in the annual report. Data for the first quarter of 2004 ending 31 March is expected after the due date of this report.

Auckland Regional Public Health Service have indicated that their data for 2003 will be available in time for the June annual report. At present they have been able to indicate that approximately 1450 notifications were received for 2003, almost all of which were from Auckland City Hospital.

The West Coast data is summarised below and more detail will be included in the annual report. There were 47 poisoning notifications received in 2003 by West Coast Public Health Unit from Grey Hospital, a rate of 155.3 per 100 000 population.

Age specific rates were highest in the 0-4 years age group (412.8 per 100 000 population) followed by the 15-24 years age group (322.7). There were over two and a half times more female notifications than male. Where ethnicity was known, all but one case was of European ethnicity. The remaining case was of "Other" ethnicity.

The top five substances in the West Coast dataset, excluding unknown medications were paracetamol (8), carbamazepine (4), ethanol (4), bezafibrate (3) and paroxetine (3).

2.5. NPC Data

The MoH came to an arrangement for the provision of the 2003 NPC data to ESR in March. Preliminary analysis shows that there were 18784 human poisoning/exposure type calls to the NPC during 2003. Further results will be available in the annual report.

2.6. Website

A section on CISS and the CISS reports to date were made available on the ESR Public Health Surveillance website (**http://www.surv.esr.cri.nz/**) in early March.

3. Agrichemical Spraydrift

The draft of the annual agrichemical spraydrift report was forwarded to the MoH on schedule in late March. In summary, the number of complaints reported by PHSs for 2003 reached an all time low; four compared with 9 in 2001, and 28 in 2002. As the number of complaints reported through *DriftNet* since its implementation in 1998 has never been high, averaging 14 per annum, such small numbers warrant a review of the value of maintenance and support of the *DriftNet* software in each PHS, and the production of a specific annual report. It was therefore proposed that the purpose/scope of *DriftNet* be re-evaluated and that this year's report be the last standalone annual spraydrift report.

4. Next Steps for Upcoming Quarter

- Analysis of 2003 NPC data.
- Receipt and analysis of ARPHS data for 2003.
- Follow up with Wairarapa, Gisborne and Southland PHUs regarding provision of local data.
- Analysis of CSO and NZHIS data which is to be received in early May 2004.
- Finalise annual driftnet report due 30 April 2004.
- Submit draft annual CISS report to MoH, due 1 June 2004.