# Chemical Injury and Agrichemical Spraydrift Surveillance

**2nd Quarterly Report:**

**Mid October 2003 to mid January 2004**

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## 1. Purpose of Report

This is the second 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

Comments received from the MoH pertaining to the draft CISS report titled "A Comprehensive Chemical Injury Surveillance System for New Zealand: Outcome of a Pilot Study and Proposal for National Implementation" were addressed and the final report completed in early December. Hardcopies of the report were circulated to the Ministry of Health (MoH), Minister of Health's Office, Coronial Services Office (CSO), National Poisons Centre (NPC), ERMA, and interested Public Health Services (PHS). An electronic version of the report is to be made available on the ESR Public Health Surveillance website (**http://www.surv.esr.cri.nz/**).

Data extracts were received on schedule in early November from NZHIS and the CSO. Next quarterly downloads are expected in early February. CSO results for the period 1 January 2001 to 30 September 2003 and NZHIS results for 2003 up until 30 September are presented in sections 2.2 and 2.3 of this report respectively.

Hawkes Bay, West Coast and Northland Public Health Services, in addition to Auckland Regional Public Health Service were approached regarding incorporation of their local notification data into the comprehensive surveillance system. As a result of a meeting in early January 2004, Hawkes Bay data are now being received. Further detail is contained in section 2.4

The issue surrounding the cost of obtaining NPC data has still not been resolved. As we understand it, at present the MoH is to discuss funding arrangements with the NPC. ESR provided NPC with analysed CSO data pertaining to morphine, methadone and dextropropoxyphene for use in the collaborative writing of a paper for publication. See section 2.5 for further details.

## 2.2. CSO Data

The latest quarterly data received in November from the CSO is current as of 31 October 2003. The next download is to be received in early February 2004.

The number of deaths attributable to chemical injuries in New Zealand for 2001 and 2002 is 226 and 210 respectively. The number of deaths for 2003 up till 30 September is 60 (remembering that it may take up to 2 years for records of deaths to be filed at the CSO). The corresponding rate for 2001 is 6.0 deaths per 100 000 population and for 2002, 5.6 per 100 000 population.

For 2001, rates by DHB ranged from 2.1 per 100 000 (Lakes, 2 deaths) to 13.2 per 100 000 (West Coast, 4 deaths). In 2002, the rates ranged from 0.0 per 100 000 (Wairarapa) to 19.8 per 100 000 (West Coast, 6 deaths). 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 (72% in 2001, 74% in 2002 and 83% for 2003 to date).

For 2001 and 2002, the greatest number of cases and highest age specific rates (by nearly a factor of 2) occurred in the 25-44 year age group (120 deaths, 10.8 per 100 000 in 2001 and 110 deaths, 9.9 per 100 000 in 2002). Preliminary data for 2003 show that this age group has the highest number of deaths (26) but the rate is similar to that for 45-64 year olds.

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

Ethnicity trends differ between 2001 and 2002. In 2001, the Maori and Pacific Peoples rates were similar (4.2 and 4.0 per 100 000 respectively), both being below that for Europeans (6.2 per 100 000). Only 37% of the deaths classed as Maori and Pacific Peoples were deemed intentional compared to 70% of the European deaths. In 2002, the Maori rate was closer to the European rate (5.1 and 5.6 per 100 000 respectively). This was accompanied by an increase in the percentage of Maori deaths which were deemed intentional (44%). The 2003 data to date appears to be following the trend of 2002.

Forty-five different primary cause chemical substances were associated with the 2001 deaths, 42 with the 2002 deaths and 20 with the 2003 deaths to date. Carbon monoxide was the most common substance primarily responsible for the deaths in all years, accounting for nearly 50% of the total 496 deaths. 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 14 deaths respectively), morphine (11 and 6 deaths respectively) and ethanol (10 and 5 deaths respectively). These three substances also feature in the 2003 unintentional deaths.

## 2.3. NZHIS Data

The latest quarterly data received in November from NZHIS is current as of 31 October 2003. The next download is to be received in early February 2004.

For the nine-month period of January to September 2003, there were 5422 poisoning cases admitted to hospitals and recorded by NZHIS nationally, giving an estimated annual rate of 193.4 per 100 000 population.

DHB's with the highest rates were Canterbury and West Coast; those with the lowest rates were Capital & Coast and Midcentral.

Sixty-four percent of the hospitalisations were coded as intentional, 33% as unintentional and 3% as indeterminate intent (quite similar to the CSO data in this regard).

The 15-24 year age group had the highest total and intentional rate but the 25-44 year age group had the highest number of actual hospitalisations (total and intentional). The highest number of cases and rate for unintentional cases was in the 0-4 year age group.

The split by sex for unintentional hospitalisations was fairly even, but for intentional hospitalisations, there were over 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 (estimated annual rate of 201 per 100 000). However while Europeans had the highest intentional rate, Maori had the highest unintentional rate.

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 ICD 10 e-code assigned to the intentional hospitalisations was X61 (antiepileptic, sedative-hypnotic, antiparkinsonsim and psychotropic drugs, not elsewhere classified) (2178 instances – note that each hospitalisation record can have up to 10 e-codes assigned). The most common e-code assigned to unintentional hospitalisations was X44 (other and unspecified drugs, medicaments and biological substances) (550 instances), followed by X41 (antiepileptic, sedative-hypnotic, antiparkinsonsim and psychotropic drugs, not elsewhere classified) (413 instances).

## 2.4. PHS Data

As expressed in previous reports, acquisition of PHS data is expected to be gradual and resource intensive. Auckland Regional Public Health Service (ARPHS) provided notification data for the pilot of the comprehensive surveillance system. It is anticipated that this data will continue to be provided. However, there has been a delay in receipt of the 2003 data at ESR due to a data entry hitch at ARPHS. It is hoped that the data will be received by March 2004.

Hawkes Bay PHS was approached in late 2003 regarding the provision of their local data for inclusion in the CISS. The PHS had been sending notification data directly to the

Environmental Heath team at the MoH to comply with Section 143 of the HSNO Act. A meeting held in early January 2004 with very accommodating PHS and Hastings hospital personnel was very successful and Hawkes Bay are to provide ESR with routine data once a memorandum of understanding has been written. The majority of the information obtained by Hawkes Bay PHS is received directly from the local hospital (printouts for ED patients and electronic summaries for admitted patients), with data for a couple of fields obtained by electronically accessing the hospital records. As the hospital is upgrading its patient management system for ED patients, in the future virtually all of the data will be obtained electronically.

Hawkes Bay data, including both ED patients and admitted patients for the 2003 calendar year has already been provided to ESR. There were 313 such hospitalisations, a rate of 218 per 100 000 population.

The greatest number of patients were aged 25-44 (97) but the highest rate was for 0-4 year olds (608.7 per 100 000 population). There were nearly twice as many female as male hospitalisations. This difference by sex is most pronounced in the 25-44 year age group where females outnumber males 3:1. The rate for Europeans (239.8 per 100 000) was the highest followed by Maori (197.2 per 100 000).

Substances (excluding unknowns) which were involved in more than 10 hospitalisations were: multiple drugs (unspecified) (28), total paracetamol (26), antidepressants (unspecified) (21), alcohol (18), smoke (16), and benzodiazepines (unspecified) (15).

For 0-14 year olds, substances (excluding unknowns) which were involved in 4 or more hospitalisations were: smoke (8), paracetamol (7), alcohol (4 – all aged 14 yrs), and dishwashing liquid/powder (4).

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

**Table 1: Number of cases for Hawkes Bay (2003) from three different sources.**

| CSO* (to date) | NZHIS* (admitted patients) | HB PHS (ED and admitted patients) |
|---|---|---|
| 0 | 138 | 313 |

* Jan – Sept 2003

West Coast and Northland PHSs were also contacted via email about provision of local data for incorporation into the national surveillance system. To date no response has been received. It is not known whether data is currently collected by these PHSs or if a system would need to be developed.

## 2.5. NPC Data

We are still not collecting NPC data due to costs of obtaining the data. This is an issue that is being worked on and clarified through the contractual arrangement between the MoH and the NPC. This has not changed since the last quarterly report.

However ESR is providing the NPC with analysed data for the co-writing of research papers.

## 2.6. Website

Dissemination of CISS reports and data is to be via the ESR Public Health Surveillance website (**http://www.surv.esr.cri.nz/**). This website went live in November 2003. Specifications for the incorporation of CISS related reports and data tables into this website are being written. It is expected that PDF reports will be added first, followed by data tables.

# 3. Agrichemical Spraydrift

Earlier this month PHSs were asked to send to ESR any data collected through the DriftNet software for agrichemical spraydrift incidents during the 2003 calendar year. Later this month we will also be approaching Regional Councils and the NPC for any applicable data they have collected during the past year. This data will be compiled and analysed for the draft annual driftnet report due 30 March 2004.

# 4. Next Steps for Upcoming Quarter

- Finalise memorandum of understanding with Hawkes Bay PHS for provision of local poisoning data to ESR.
- Receipt and analysis of ARPHS data for 2003.
- Follow up with West Coast and Northland PHS regarding local data.
- MoH to finalise arrangements with NPC so that data pertaining to calls received in 2003 can be acquired and analysed by ESR.
- Analysis of CSO and NZHIS data which is to be received in early February 2004.
- CISS reports to be made available on website.
- Preparation of the draft annual driftnet report due 30 March 2004.