

**National Notification, Investigation
and Surveillance Systems
for Chemical Exposures**

Bi-annual Report

Prepared for the New Zealand Ministry of Health

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Rebecca McDowell

Population and Environmental Health
Institute of Environmental Science and Research Limited
Kenepuru Science Centre, Porirua

**National Notification, Investigation
and Surveillance Systems
for Chemical Exposures**

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Graham MacBride-Stewart
Programme Leader
Population and Environmental Health

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1. Purpose of Report

This is the bi-annual report for the financial year 2005-2006 on two projects (Chemical Injury Surveillance and Agrichemical Spraydrift) contained in the MoH/ESR Environmental Health Surveillance Service Description. This report is 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.

This report also contains updates on key statistics relating to chemical injury for the period January to June 2005, culminating in a final report on all statistics being submitted in June 2006. In addition, retrospective data are presented from Southland (2002-2004), Hutt (2004), and Wairarapa (2004) District Health Boards (DHBs).

2. Other Reports

The annual report for the 2004/2005 financial year was finalised in July of this year. This report addressed progress on the surveillance of chemical injury and spraydrift events and presented data for the 2004 calendar year. Updated fatal poisoning data were also included for the years 2002 and 2003.

The report was distributed to Public Health Units (PHUs) with the Ministry of Health August circular newsletter. It was also made available on the ESR Public Health Surveillance website (<http://www.surv.esr.cri.nz/>).

A paper entitled 'Deaths from Poisoning in New Zealand: 2001-2002' was published in the New Zealand Medical Journal in November 2005. The journal also published an accompanying editorial. A copy of the paper and editorial are to be distributed to PHUs with the next Ministry of Health circular letter.

3. Present Data Sources and Medium Term Strategy

National data continues to be received on a quarterly basis from the New Zealand Health Information Service (NZHIS) for inpatient poisoning hospitalisations and from the Coronial Service Office (CSO) for fatal poisoning cases.

Local poisoning notifications from Auckland Regional Public Health Service (ARPHS) and West Coast Public Health Unit (WCPHU) also continue to be received on a regular basis. In addition, the surveillance system now includes local notification data from Southland Public Health Unit (SOPHU) and Regional Public Health representing the following DHBs: Capital and Coast, Hutt and Wairarapa.

Earlier in the year, communication was entered into with Dr John Fountain from the National Poisons Centre regarding a medium term strategy for CISS. Consensus was readily reached that for a notification system to work there would need to be changes to appropriate legislation to a) make it a mandatory requirement for medical practitioners in addition to hospitals to notify and b) to make it mandatory for **all** poisonings events to be notified

(including poisonings arising from substances not covered by the HSNO Act such as medicines in finished dose form or alcohol when classified as food).

In December 2005, an amendment to the HSNO Act was made that now requires all diagnosing medical practitioners, in addition to hospitals, to report injuries caused by hazardous substances to the Medical Officer of Health. However the notification, by either hospitals or medical practitioners, of poisonings by substances not classified as hazardous substances is still not mandated. This would require changes legislation outside of HSNO e.g. the Health Act.

Once supporting legislation is in place, the TOXINZ software and the revamped EpiSurv should prove to be useful data collection tools if the necessary funding were available to link into the various patient management system used by hospitals and general practitioners around the country.

4. Summary of Data Analysis

4.1. CSO (2001-2005)

- National CSO data continues to be collected on a quarterly basis.
- Data for years 2001-2003 estimated to be 99% completed, an average of 236 deaths per year.
- 2004 data estimated to be 80-85% complete – 191 deaths to date compared to 193 for 2003 at the equivalent time.
- 2005 data estimated to be only 25-35% complete - 59 deaths to date compared to 52 for 2004 at the equivalent time.

4.2. NZHIS (January to June 2005)

- National NZHIS data continues to be collected on a quarterly basis.
- 3546 inpatient hospitalisations classified as poisonings for the first six months of 2005 - comparable with the first six months of the previous three years.
- Just over a third (34.7%) were categorised as unintentional, 58.9% as intentional and 6.5% were of indeterminate intent.
- Overall, regardless of intent, DHBs with the highest rate were West Coast, Canterbury and Otago. Capital and Coast and Hawkes Bay DHBs had the lowest annualised rates.

- Canterbury and West Coast also had the highest rates for intentional cases and West Coast had the highest rate for unintentional cases.
- The 0-4 year old age group had by far the greatest rate for unintentional cases while the highest rate for intentional cases was amongst persons aged 15-24 years.
- Overall, nearly two thirds of cases (63.7%) were female, amongst intentional cases there were 2.5 female cases to every male case.
- Maori and Europeans had similar rates for intentional cases although the Maori rate for unintentional cases was higher than that for Europeans.

4.3. Auckland City Hospital Notifications (January to June 2005)

- 677 notifications for the first half of 2005 compared to 660 and 697 for the equivalent period in 2004 and 2003.
- Amongst intentional cases, the age specific rate for those aged 15-24 years was over twice as high as the next highest rate (24-44 year olds).
- Overall more notifications were male (54.2%) although more of the intentional notifications were female (53.6%).
- Ethnicity specific rates for intentional cases were highest for Europeans, followed by Maori.
- Leading chemicals/drugs of abuse included ethanol (393 occurrences), benzylpiperazine (BZP) (41), methamphetamine or amphetamine (39), marijuana (23), and spiked drink (21).
- Leading therapeutic substances included paracetamol (53 occurrences), zopiclone (30), ibuprofen (20), clonazepam (19) and citalopram (16).

4.4. Grey Hospital Notifications (January to June 2005)

- 17 notifications for the first half of 2005, compared to eight and 22 for the equivalent period in 2004 and 2003.
- Four cases were aged less than five years.
- 11 of the 17 cases were female and 10/17 were of European ethnicity.

- The most common substances were ethanol and paracetamol. The substances associated with the poisonings in children aged less than five years were fluoxetine, paracetamol, tea tree oil and unknown medications.

4.5. Invercargill Hospital Notifications (2002-2004 and January to June 2005)

- 95 notifications for the period January to June 2005.
- 219 poisoning notifications in 2002, 188 in 2003 and 185 in 2004.
- 131 intentional poisonings in 2002 (59.8%), 122 in 2003 (64.9%) and 131 in 2004 (70.8%).
- The highest age specific rate for intentional poisonings occurred in the 15-24 year age group.
- Nearly two and a half more female intentional poisonings than male.
- The most common substances associated with intentional poisonings were paracetamol (100 occurrences), codeine (34), zopiclone (26), paroxetine (25), citalopram (24), alcohol (22) and amitriptyline (21).
- 85 unintentional poisonings in 2002, 65 in 2003 and 53 in 2004.
- Age specific rates for unintentional poisonings were by far the highest for the 0-4 year age group.
- There was less differentiation by sex for unintentional poisonings than for the intentional cases.
- The most common substances associated with unintentional poisonings were paracetamol (29 instances) and smoke (20 instances).

4.6. Masterton Hospital Notifications (2004 and January to June 2005)

- 26 notifications for the period January to June 2005.
- 43 notifications for 2004.
- In 2004, 14 notifications (all unintentional) were in children aged less than five years.
- In 2004, the top substances were zopiclone (4 instances) and paracetamol (3 instances). Of the poisonings in children aged less than five years, two were

associated with chlorpheniramine-phenylpropanolamine, while no other substance occurred more than once.

4.7. Hutt Hospital Notifications (2004 and January to June 2005)

- 128 notifications for the period January to June 2005.
- 165 notifications for 2004 - fewer than expected cases in first four months of the year possibly due to data collection changes.
- In 2004, 46 cases (all unintentional) were aged less than five years.
- In 2004, while 46.3% of the substances associated with the notifications were unknown, the most common substances were paracetamol (19 instances) and ethanol (9 instances).
- In 2004, amongst children aged less than five years, substances occurring more than once included paracetamol (8 instances), nail polish remover (4), codeine (3), garden fungi (3), and rat poison (2).

4.8. Wellington and Kenepuru Hospital Notifications (January to June 2005)

- 272 notifications for the period January to June 2005.

5. Detailed Data Analysis

5.1. National Overview

Descriptive analysis of coronial, NZHIS and PHU data are presented in sections 4.2 to 4.4 of this report. All rates are expressed per 100 000 population and calculated using 2001 Census data. Any rates corresponding to data for the first six months of 2005 have been annualised.

The following table presents poisoning data from the CSO, NZHIS and local PHUs by DHB for the first six months of 2005. All cases, regardless of intent are presented.

PHU data is only received at ESR for six of the 21 DHBs.

Table 1: Poisoning cases of all intents by DHB from the CSO, NZHIS and PHUs (January-June 2005)

| DHB | CSO (deaths to date) | NZHIS (admitted patients) | | PHU Notifications | |
|--------------------|----------------------|---------------------------|-------------------|-------------------|-------------------|
| | No. ¹ | No. | Rate ² | No. | Rate ² |
| Northland | 3 | 139 | 198.4 | | |
| Waitemata | 7 | 454 | 211.3 | | |
| Auckland | 1 | 343 | 186.5 | 677* | 368.2* |
| Counties Manukau | 3 | 377 | 200.8 | | |
| Waikato | 5 | 342 | 215.3 | | |
| Lakes | 0 | 92 | 191.7 | | |
| Bay of Plenty | 7 | 149 | 167.3 | | |
| Tairāwhiti | 1 | 36 | 163.8 | | |
| Taranaki | 3 | 65 | 126.2 | | |
| Hawke's Bay | 2 | 57 | 79.4 | | |
| Whanganui | 5 | 43 | 135.2 | | |
| Midcentral | 4 | 164 | 211.6 | | |
| Hutt | 0 | 75 | 113.8 | 128 | 194.2 |
| Capital and Coast | 4 | 86 | 70.0 | 272 | 221.3 |
| Wairarapa | 1 | 39 | 204.2 | 26 | 136.1 |
| Nelson Marlborough | 4 | 120 | 196.0 | | |
| West Coast | 0 | 45 | 297.4 | 17 | 112.3 |
| Canterbury | 0 | 562 | 263.2 | | |
| South Canterbury | 0 | 51 | 193.2 | | |
| Otago | 4 | 199 | 233.1 | | |
| Southland | 2 | 90 | 174.2 | 95 | 183.9 |
| Area outside DHB | 0 | 18 | - | | |
| Unknown | 3 | | | | |
| TOTAL | 59 | 3546 | 189.8 | N/A | N/A |

1 As it may be some time (i.e. years) after a death that the coroners report is filed at the CSO, these figures are not fully indicative of the true number of deaths for each DHB. Please also note that the frequency of reports filed at the CSO is dependant the coroner and thus caution should be adhered when comparing between DHBs.

2 **Annualised** rate expressed per 100 000 population and calculated using 2001 Census data.

* Result excludes cases aged less than 14 years (see page 7 for explanation). Thus the true rate would be higher.

PHU notifications should include both admitted patients and those seen at emergency departments, hence the number should be greater than the corresponding number of NZHIS hospitalisations as this data only includes admitted patients. This is the case for Auckland, Hutt, and Capital and Coast DHBs, where the number of PHU notifications is between 1.7 and 3.2 times the number of NZHIS hospitalisations.

However, the number of cases for Southland DHB are similar between the two data sets while for Wairarapa and West Coast the number of NZHIS hospitalisations is greater than the number of PHU notifications.

This variation may be due to different coding practices and data collection protocols with the various hospitals but it is interesting to note the relationship with size, i.e. where PHU notifications exceed NZHIS hospitalisations the DHB is large, while where the opposite occurs the DHB is small, and case numbers are very similar for the medium sized DHB.

If more hospitals were to supply notification data to PHUs for inclusion in CISS, further investigation of this relationship could be explored.

5.2. Poisoning Mortality (CSO Data)

Data on fatal poisoning cases dates back to 1 January 2001. The latest update includes all deaths received at the CSO as of 30 September 2005. Due to the scientific and legal complexities involved in each death, it may take many months, even years for coroners reports to be filed at the CSO (Table 2).

Table 2: Number of poisoning deaths by year and estimated percentage of completion as of 30 September 2005.

| Year | 2001 | 2002 | 2003 | 2004 | 2005 |
|------------------------|------|------|------|--------|--------|
| Number | 240 | 244 | 225 | 191 | 59 |
| Estimated % completion | 99% | 99% | 99% | 80-85% | 25-35% |

At the equivalent time last year, there were 52 deaths filed at the CSO for 2004 and 193 deaths for 2003.

The following table presents data by DHB for the years 2001-2003 (as data for these years are estimated to be 99% complete).

Table 3: CSO poisoning deaths by DHB, 2001-2003 and annualised rates

| DHB | 2001 | 2002 | 2003 | Total | Annualised rate¹ |
|-------------------------|-------------|-------------|-------------|--------------|------------------------------------|
| Northland | 9 | 5 | 16 | 30 | 7.1 |
| Waitemata | 24 | 25 | 22 | 71 | 5.5 |
| Auckland | 20 | 26 | 22 | 68 | 6.2 |
| Counties Manukau | 19 | 21 | 21 | 61 | 5.4 |
| Waikato | 19 | 17 | 17 | 53 | 5.6 |
| Lakes | 3 | 5 | 5 | 13 | 4.5 |
| Bay of Plenty | 16 | 14 | 15 | 45 | 8.4 |
| Tairāwhiti | 1 | 3 | 3 | 7 | 5.3 |
| Taranaki | 11 | 2 | 4 | 17 | 5.5 |
| Hawke's Bay | 11 | 8 | 2 | 21 | 4.9 |
| Whanganui | 6 | 7 | 6 | 19 | 10.0 |
| MidCentral | 15 | 16 | 8 | 39 | 8.4 |
| Hutt | 10 | 11 | 12 | 33 | 8.3 |
| Capital and Coast | 17 | 10 | 14 | 41 | 5.6 |
| Wairarapa | 1 | 0 | 2 | 3 | 2.6 |
| Nelson-Marlborough | 11 | 10 | 2 | 23 | 6.3 |
| West Coast | 4 | 6 | 1 | 11 | 12.1 |
| Canterbury | 31 | 30 | 33 | 94 | 7.3 |
| South Canterbury | 3 | 3 | 2 | 8 | 5.1 |
| Otago | 4 | 16 | 9 | 29 | 5.7 |
| Southland | 5 | 8 | 7 | 20 | 6.5 |
| Unknown | 0 | 1 | 2 | 3 | N/A |
| Total | 240 | 244 | 225 | 709 | 6.3 |
| Rate¹ | 6.4 | 6.5 | 6.0 | 6.3 | |

¹ Rates expressed per 100 000 population and calculated using 2001 Census data.

Due to the incomplete nature of the CSO dataset, further analysis for the most recent years will be reported in the June 2006 CISS annual report.

5.3. Poisoning: Inpatient Hospitalisations (NZHIS Data)

The chemical injury surveillance system presently contains data on inpatient poisoning cases from 1 January 2001 to 30 September 2005.

As of 31 October 2005, there were 3546 inpatient hospitalisations classified as poisonings for the first six months of 2005. This is comparable with the first six months of previous years (3441 in 2004, 3601 in 2003 and 3586 in 2002).

The 3546 cases represent an annualised rate of 189.8 per 100 000 population. Annual rates for the previous three years were 186.2 per 100 000 population in 2004, 194.1 in 2003 and 191.8 in 2002.

Just over a third (34.7%) were categorised as unintentional, 58.9% as intentional and 6.5% were of indeterminate intent. The respective annualised unintentional rate was 65.8 per 100 000 population and the intentional rate was 111.7 per 100 000 population.

Overall, regardless of intent, DHBs with the highest annualised rate were West Coast (297.4 per 100 000 population, 45 cases), Canterbury (263.2 per 100 000 population, 562 cases), and Otago (233.1 per 100 000 population, 199 cases). Canterbury DHB had the highest number of cases (562) followed by Waitemata (454). Capital and Coast and Hawkes Bay DHBs had the lowest annualised rates (70.0 per 100 000 population, 86 cases, and 79.4 per 100 000 population, 57 cases respectively). All these results follow trends seen in previous years.

Canterbury and West Coast also had the highest annualised rates for intentional cases (175.1 per 100 000 population, 374 cases and 165.2 per 100 000 population, 25 cases respectively). Otago was ranked fourth (153.5 per 100 000 population, 131 cases), behind MidCentral (157.4 per 100 000 population, 122 cases).

The annualised rate for unintentional cases from West Coast DHB was the highest nationally (105.7 per 100 000 population, 16 cases). Unintentional rates for Canterbury and Otago were below the top three (West Coast, Nelson Marlborough and Bay of Plenty).

The 0-4 year old age group had by far the greatest annualised rate for unintentional cases (243.7 per 100 000 population, 330 cases). Annualised rates for all the remaining age groups (unintentional cases) were less than 88 per 100 000 population. There were no intentional cases aged less than five years. The highest annualised rate for intentional cases was amongst persons aged 15-24 years (243.5 per 100 000 population, 615 cases) while the greatest number of cases (958) were aged 25-44 years.

Overall, nearly two thirds of cases (63.7%) were female. This was influenced by intentional cases where there were 2.5 female cases to every male case. The proportion by sex for unintentional cases was even.

Results by ethnicity show that 132 cases were assigned to the “Other” ethnicity category, giving this group very high rates for overall cases and by each intent. Aside from this category, Maori had the highest annualised rate for unintentional cases (80.6 per 100 000 population, 212 cases). Maori and Europeans had similar rates for intentional cases (110.6 per 100 000 population, 291 cases and 118.8 per 100 000 population, 1550 cases respectively).

5.4. Poisoning: Notifications (PHS Data from Local Hospitals)

5.4.1. Auckland City Hospital Notifications (Auckland Central DHB)

Auckland Regional Public Health Service (ARPHS) received 677 notifications from Auckland City Hospital for the first six months of 2005. This is very consistent with the number of notifications received in the first six months of 2004 (660) and 2003 (697).

The annualised rate for 2005 is 368.2 per 100 000 population (compared to 360.0 per 100 000 population in 2004 and 365.5 per 100 000 population in 2003). As in previous years, these notifications are not representative of children aged less than 14 years, as these cases would be seen predominately at Starship Hospital. Thus the true rate for Auckland DHB would be higher.

Due to the exclusion of children, only 4.3% or 29 of the ARPHS notifications for the first half of 2005 were classed as unintentional poisonings. Whilst, 57.9% were deemed intentional and a further 37.8% as indeterminate or unknown. ARPHS staff determine intent.

Amongst intentional cases, the age specific rate (annualised) for those aged 15-24 years (526.6 per 100 000 population, 148 cases) was over twice as high as the next highest rate (246.4 per 100 000 population, 153 cases, amongst 24-44 year olds). Fourteen of the 29 unintentional cases (48.3%) were aged 24-44 years.

Overall more notifications were male (54.2%) although more of the intentional notifications were female (53.6%).

Ethnicity specific rates (annualised) for intentional cases were highest for Europeans, followed by Maori (251.9 per 100 000 population, 260 cases, and 205.9 per 100 000 population, 30 cases respectively). The annualised rate for intentional Asian cases was 167.6 per 100 000 population (53 cases) while that for Pacific Peoples was 82.5 per 100 000 population (18 cases). Where ethnicity was known amongst the unintentional cases, all but two cases were of European ethnicity (21 cases). The other two were classed as Pacific Peoples and Asian.

There were 1033 substances associated with the 677 ARPHS notifications for January to June 2005. More than one substance was associated with 33.7% of the notifications. Where substance class was known (all but two substances) 58.3% were classed as chemicals/drugs of abuse, the predominant substance being ethanol (393 occurrences). Other contributing chemicals/drugs of abuse included benzylpiperazine (BZP) (41), methamphetamine or amphetamine (39), marijuana (23), spiked drink (21), MDMA (ecstasy) (19) and gamma-hydroxybutyrate (GHB) (19).

Over a third (36.2%) of the substances were classed as therapeutic substances, with paracetamol the most frequent (53 instances). Other leading therapeutic substances included zopiclone (30), ibuprofen (20), clonazepam (19) and citalopram (16).

5.4.2. Grey Hospital Notifications (West Coast DHB)

In the first six months of 2005, there were 17 poisoning notifications reported to West Coast Public Health Unit from Grey Hospital, an annualised rate of 112.3 per 100 000 population. In 2003, 22 notifications were received for the same six-month period, and in the first half of 2004, there were eight notifications.

Of the January to June 2005 West Coast notifications, just over three quarters (76.5%, 13 cases) were classed as overdoses, the remainder as ingestion. Intent details are not available for the West Coast notifications.

While 41.2% of the West Coast notifications received in the first half of 2005 were aged 25 to 44 years (7 cases), 23.5% or four cases were aged less than five years. In comparison, for the complete 2004 year, there were only two notifications in this age group. However, in 2003, there were eight notifications in this age group over the full year.

As in 2003 and 2004, the majority of the West Coast notifications for the first half of 2005 were female (64.7%, 11 cases).

Ten of the 17 West Coast notifications for the first six months of 2005 were of European ethnicity. The ethnicity for the remainder was unknown.

There were 24 substances associated with the 17 West Coast notifications for January to June 2005. Where substance class was known, just over three quarters (78.3%) were classed as therapeutic substances. The most common substances were ethanol and paracetamol (each cited three times). This is consistent with previous years. The substances associated with the poisonings in children aged less than five years were fluoxetine, paracetamol, tea tree oil and unknown medications.

5.4.3. Invercargill Hospital Notifications (Southland DHB)

Southland Public Health Unit (SOPHU) received 95 poisoning notifications for the period 1st January to 30 June 2005. The corresponding annualised rate of 183.9 per 100 000 population is similar to that for the years 2002-2004.

Data from SOPHU for the years 2002-2004 was received just as the June annual report was being completed. As it was not included in that report, it is presented in some detail here.

SOPHU received 219 poisoning notifications in 2002, 188 in 2003 and 185 in 2004. The respective rates were 211.9 per 100 000 population, 181.9 per 100 000 population and 179.0 per 100 000 population.

The majority of these notifications, for all years, were classed as overdoses (an average of 65.0%). For the purpose of this report all notifications classed as overdoses have been categorized as intentional poisonings, and all other injury types, e.g. accidental overdose, ingestion, inhalation etc have been categorized as unintentional poisonings.

Intentional Poisonings

There were 131 intentional poisonings in 2002 (59.8%), 122 in 2003 (64.9%) and 131 in 2004 (70.8%). The respective rates were 126.8 per 100 000 population, 119.0 per 100 000 population and 126.8 per 100 000 population.

Intentional Poisonings by Age Group

For all three years, the highest age specific rate for intentional poisonings occurred in the 15-24 year age group, ranging from 269.4 per 100 000 in 2003 (35 cases) to 400.3 per 100 000 population in 2002 (52 cases) (Table 4, Figure 1).

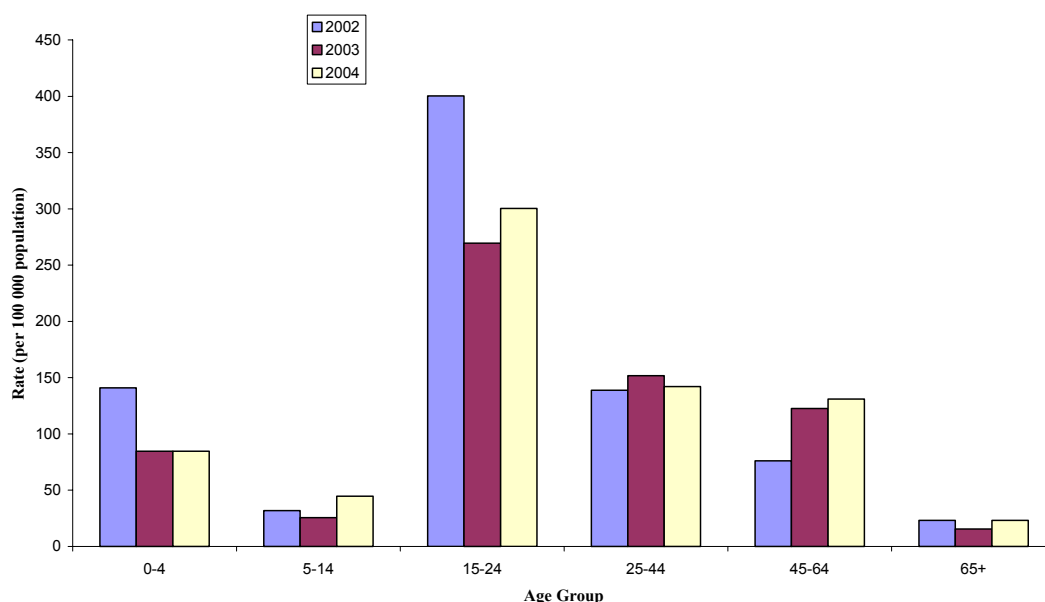
Table 4: Southland Intentional Poisoning Notifications by Age Group, 2002-2004

| Age Group | 2002 | | 2003 | | 2004 | |
|--------------|------------|--------------|------------|--------------|------------|--------------|
| | No. | Rate | No. | Rate | No. | Rate |
| 0-4 | 10 | 140.9 | 6 | 84.6 | 6 | 84.6 |
| 5-14 | 5 | 31.9 | 4 | 25.5 | 7 | 44.6 |
| 15-24 | 52 | 400.3 | 35 | 269.4 | 39 | 300.2 |
| 25-44 | 43 | 138.8 | 47 | 151.7 | 44 | 142.0 |
| 45-64 | 18 | 76.1 | 29 | 122.6 | 31 | 131.1 |
| 65+ | 3 | 23.2 | 2 | 15.5 | 3 | 23.2 |
| Unknown | 0 | - | 0 | - | 1 | - |
| TOTAL | 131 | 126.8 | 123 | 119.0 | 131 | 126.8 |

Rate calculated using 2001 Census data and expressed per 100 000 population.

Figure 1

Southland Intentional Poisoning Notification Rates by Age Group, 2002-2004



Across the three years, the 45-64 years and the 25-44 years age groups had the highest proportion of total cases for those cases classed as intentional poisonings (84.8% and 84.3% respectively), while the 0-4 year age group had the lowest. However, in this youngest age group there were 22 intentional cases across the three years (18.5% of all notifications for this age group). These cases may have been inadvertently classed as overdoses rather than unintentional cases given the much lower figures in this age group from other hospitals. Over the three years, only eight intentional poisoning cases were aged over 65 years.

Intentional Poisonings by Sex

There were nearly two and a half more female intentional poisonings than male across the three years (274 versus 111). The difference between female and male intentional cases was significant in 2002 and 2004. Rates for females ranged from 148.1 per 100 000 population in 2003 (77 cases) to 192.3 per 100 000 population in 2004 (100 cases). Rates for males were as low as 60.4 per 100 000 population in 2004 (31 cases) and peaked at 89.6 per 100 000 population in 2003 (46 cases) (Table 5, Figure 2).

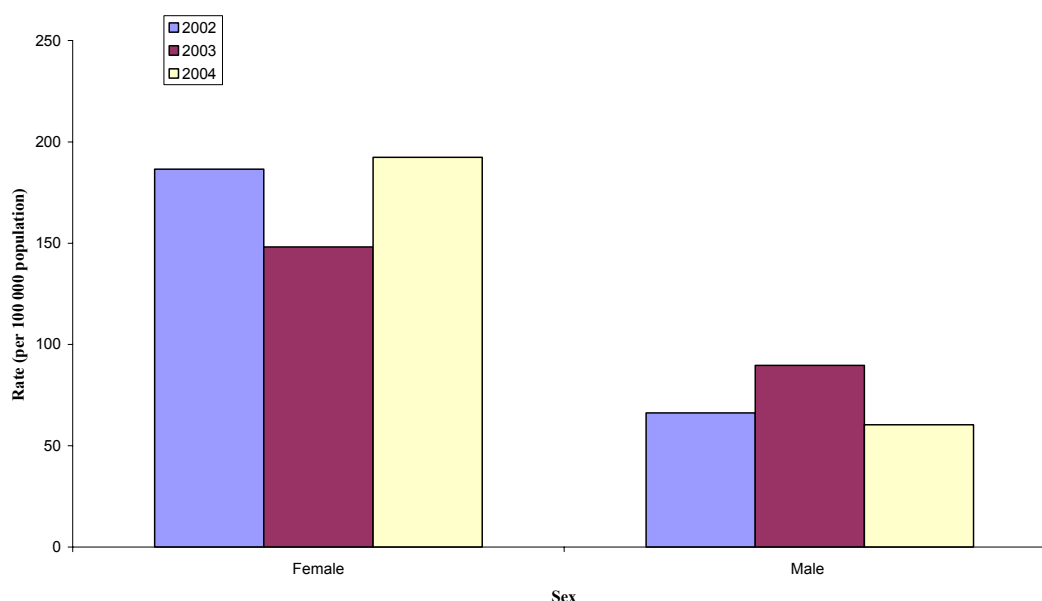
Table 5: Southland Intentional Poisoning Notifications by Sex, 2002-2004

| Sex | 2002 | | 2003 | | 2004 | |
|--------------|------------|--------------|------------|--------------|------------|--------------|
| | No. | Rate | No. | Rate | No. | Rate |
| Female | 97 | 186.6 | 77 | 148.1 | 100 | 192.3 |
| Male | 34 | 66.2 | 46 | 89.6 | 31 | 60.4 |
| Unknown | 0 | - | 0 | - | 0 | - |
| TOTAL | 131 | 126.8 | 123 | 119.0 | 131 | 126.8 |

Rate calculated using 2001 Census data and expressed per 100 000 population.

Figure 2

Southland Intentional Poisoning Notification Rates by Sex, 2002-2004



Across the three years, nearly three quarters (74.3%) of all females poisoning notifications were classed as intentional compared to exactly half the male notifications.

Intentional Poisonings by Occupation

Just over a quarter (25.5%, 98 cases) of the intentional notifications across the three years were beneficiaries. A further 18.2% (70 cases) were students and cases identifying as housewife/homemaker/mother accounted for a further 10.4% (40 cases).

Intentional Poisonings by Substance

More than one substance was involved in 41.8% of the intentional poisonings. Therapeutic agents accounted for 90.1% of the substances associated with the intentional poisonings. Paracetamol was the most common substance for all years. Across the three years, it was involved in a total of 100 of the intentional notifications (Table 6). Other substances involved in greater than 20 notifications across the three years were codeine (34), zopiclone (26), paroxetine (25), citalopram (24), alcohol (22) and amitriptyline (21).

Table 6: Top 16 Substances Associated with Southland Poisoning Notifications by Intent, 2002-2004 combined

| Intentional Poisonings | | Unintentional Poisonings | |
|--------------------------------|-----|--------------------------------|-----|
| Substance | No. | Substance | No. |
| Paracetamol | 100 | Paracetamol | 29 |
| Codeine | 34 | Smoke | 20 |
| Zopiclone | 26 | Carbon Monoxide | 8 |
| Paroxetine | 25 | Fumes | 7 |
| Citalopram | 24 | Codeine | 5 |
| Alcohol | 22 | Alcohol | 5 |
| Amitriptyline | 21 | Petrol | 5 |
| Fluoxetine | 19 | Naproxen | 4 |
| Temazepam | 19 | Dextropropoxyphene/paracetamol | 3 |
| Dextropropoxyphene/paracetamol | 17 | Lorazepam | 3 |
| Sodium valproate | 17 | Unknown medication | 3 |
| Clonazepam | 16 | Marijuana | 3 |
| Diclofenac | 14 | Ammonia | 3 |
| Diazepam | 14 | Chlorine | 3 |
| Doxepin | 13 | Poisonous Berries | 3 |
| Ibuprofen | 13 | Toxic Mushrooms | 3 |

Unintentional Poisonings

Just over a third of the poisoning notifications received by Southland PHU were classed as unintentional. The rate for 2002 was 82.3 per 100 000 population (85 cases), the 2003 rate was 62.9 per 100 000 population (65 cases) and the rate for 2004 was 51.3 per 100 000 population (53 cases).

Unintentional Poisonings by Age Group

The 0-4 year age group and the 5-14 year age groups had the highest proportion of unintentional poisonings (81.5% and 61.0% respectively). The age specific rates were by far the highest in this youngest age group ranging from 324.2 per 100 000 in 2004 (23 cases) to 577.9 per 100 000 in 2002 (41 cases). Rates for all other ages were noticeably lower and comparable with each other. The highest was for 15-24 year olds in 2004 (107.8 per 100 000 population, 14 cases) (Table 7, Figure 3).

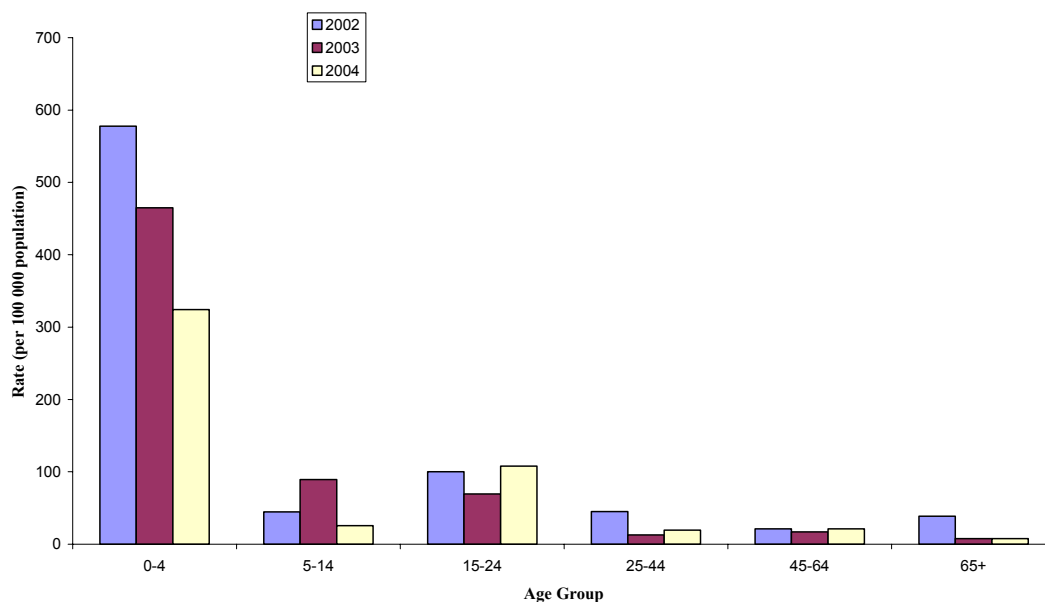
Table 7: Southland Unintentional Poisoning Notifications by Age Group, 2002-2004

| Age Group | 2002 | | 2003 | | 2004 | |
|--------------|-----------|-------------|-----------|-------------|-----------|-------------|
| | No. | Rate | No. | Rate | No. | Rate |
| 0-4 | 41 | 577.9 | 33 | 465.1 | 23 | 324.2 |
| 5-14 | 7 | 44.6 | 14 | 89.2 | 4 | 25.5 |
| 15-24 | 13 | 100.1 | 9 | 69.3 | 14 | 107.8 |
| 25-44 | 14 | 45.2 | 4 | 12.9 | 6 | 19.4 |
| 45-64 | 5 | 21.1 | 4 | 16.9 | 5 | 21.1 |
| 65+ | 5 | 38.7 | 1 | 7.7 | 1 | 7.7 |
| Unknown | 0 | - | 0 | - | 0 | - |
| TOTAL | 85 | 82.3 | 65 | 62.9 | 53 | 51.3 |

Rate calculated using 2001 Census data and expressed per 100 000 population.

Figure 3

Southland Unintentional Poisoning Notification Rates by Age Group, 2002-2004



Unintentional Poisonings by Sex

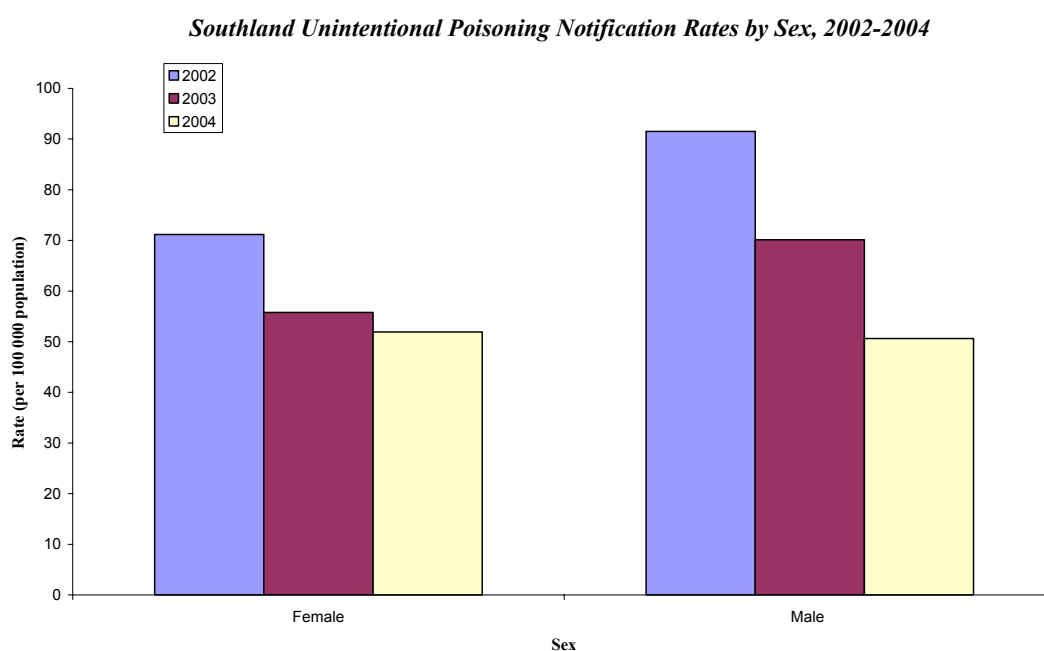
In 2002 and 2003, males outnumbered females for unintentional poisonings. The rate for males was 91.5 per 100 000 population in 2002 (47 cases) and 70.1 per 100 000 population in 2003 (36 cases) while the rate for females in 2002 was 71.2 per 100 000 population (37 cases) and in 2003 was 55.8 per 100 000 population (29 cases) (Table 8, Figure 4). In 2004 there was one more female notification than male (27 versus 26) and thus the rates were virtually the same (around 50 per 100 000 population).

Table 8: Southland Unintentional Poisoning Notifications by Sex, 2002-2004

| Sex | 2002 | | 2003 | | 2004 | |
|--------------|-----------|-------------|-----------|-------------|-----------|-------------|
| | No. | Rate | No. | Rate | No. | Rate |
| Female | 37 | 71.2 | 29 | 55.8 | 27 | 51.9 |
| Male | 47 | 91.5 | 36 | 70.1 | 26 | 50.6 |
| Unknown | 1 | - | 0 | - | 0 | - |
| TOTAL | 85 | 82.3 | 65 | 62.9 | 53 | 51.3 |

Rate calculated using 2001 Census data and expressed per 100 000 population.

Figure 4



Unintentional Poisonings by Occupation

Across the three years, infants and children accounted for just over half (52.2%) of the unintentional poisonings. Of these, 34.0% (69 cases) were infants. Students accounted for another 13.8% (28 cases).

Unintentional Poisonings by Substance

In contrast to the intentional poisonings, nearly all of the unintentional poisonings involved only one substance per case (91.1%).

Across the three years, 39.9% of the substances involved in the unintentional notifications were classed as therapeutic agents and another 36.9% as household/domestic chemicals. The top individual substances were paracetamol (29 instances) and smoke (20 instances) (Table 6).

5.4.4. Masterton Hospital Notifications (Wairarapa DHB)

For the period January to June 2005, Regional Public Health received 26 poisoning notifications for Wairarapa DHB. This number equates to an annualised rate of 136.1 per 100 000 population. The data were not received in time to be analysed comprehensively for this report but data for 2004, which were received just as the June annual report was being completed is presented below.

Forty-three poisoning notifications were received for Wairarapa for 2004, a rate of 112.6 per 100 000 population. Over half (53.5%) were classed as unintentional, 30.2% as intentional and 16.3% as indeterminate or unknown intent. Fourteen notifications (all unintentional) were in children aged less than five years, a rate of 522.6 per 100 000 population. Sixty-three

percent of total notifications were female (138.1 per 100 000 population). Only 15.4% of the intentional cases were male, while unintentional notifications were more evenly distributed by sex. Amongst Europeans, there were only four intentional cases versus 14 unintentional cases. The total number of cases for the remaining ethnicities was less than 10. About two thirds (67.7%) of the substances were classed as therapeutics, the top individual substance being zopiclone (4 instances) and paracetamol (3 instances). Of the poisonings in children aged less than five years, two were associated with chlorpheniramine-phenylpropanolamine, while no other substance occurred more than once.

5.4.5. Hutt Hospital Notifications (Hutt DHB)

For the period January to June 2005, Regional Public Health received 128 poisoning notifications for Hutt DHB. This number equates to an annualised rate of 194.2 per 100 000 population. As with Wairarapa, the data were not received in time to be analysed comprehensively for this report but data for 2004, which were received just as the June annual report was being completed is presented below.

Regional Public Health received 165 poisoning notifications for Hutt DHB in 2004. However, for the first four months of the year, the average number of cases was 5.5 while for the next eight months, the average was 17.9. This may be due to the data collection process rather than a true reflection of monthly fluctuations. Fifty-seven percent of the notifications were classed as intentional, 40.6% as unintentional and only 2.4% were of indeterminate or unknown intent. Forty-six cases (all unintentional) were aged less than five years, a rate of 449.9 per 100 000 population. The highest rate for intentional cases was amongst persons aged 45-64 years (127.1 per 100 000 population) followed by those aged 15-24 years (104.1 per 100 000 population). Of the intentional notifications, 86.7% were female compared to 41.9% of the unintentional notifications. Amongst the unintentional notifications, the ethnicity specific rates were similar for Europeans and Maori (26.0% per 100 000 population and 25.5% per 100 000 population respectively). There were no unintentional notifications for persons identifying as Pacific Peoples or Asian. Amongst intentional notifications, the rate for Europeans was 61.8 per 100 000 population compared to 35.7 per 100 000 population for Maori. While 46.3% of the substances associated with the notifications were unknown, the most common substances were paracetamol (19 instances) and ethanol (9 instances). Paracetamol was the most common of the known substances for both the unintentional and intentional notifications. Amongst children aged less than five years, substances occurring more than once included paracetamol (8 instances), nail polish remover (4), codeine (3), garden fungi (3), and rat poison (2). In addition there were nine unknown substances.

5.4.6. Wellington and Kenepuru Hospital Notifications (Capital and Coast DHB)

For the period January to June 2005, Regional Public Health received 272 poisoning notifications for Capital and Coast DHB. This number equates to an annualised rate of 221.3 per 100 000 population. As with Wairarapa and Hutt, the data were not received in time to be analysed comprehensively for this report.

2004 data for Capital and Coast DHB is only available for the months October to December (110 notifications).

5.5. NPC Data

The NPC ceased supplying data to the chemical injury surveillance system in 2004.

5.6. Agrichemical Spraydrift Data

Spraydrift data is collated nationally in January/February each year and will be reported on in the annual report (June 2006).

Project personnel have been contacted for toxicological advice relating to some spraydrift incidents.