

Frequently Asked Questions

These questions and answers have been taken from material published in the Ministry of Health's Environmental Health Circular Letters from July 2012-July 2013.

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What is the Hazardous Substances Disease and Injury Reporting Tool (HSDIRT)?

The Hazardous Substances Disease and Injury Reporting Tool (HSDIRT) is a general practitioner (GP) notification system for hazardous substances disease and injury, as required under section 143 of the Hazardous Substances and New Organisms (HSNO) Act 1996.¹ It also includes lead absorption $\geq 0.48 \mu\text{mol/L}$ and poisoning arising from chemical contamination of the environment under the Health Act 1956.

Massey University's Centre for Public Health Research (CPHR) has developed the HSDIRT in conjunction with *bestpractice* Decision Support (BPAC), which develops forms and decisions support tools which are linked to a GP's patient management system.

What is the HSDIRT used for?

The Centre for Public Health Research undertakes hazardous substances surveillance for the Ministry of Health. Until now this has been based on data sources such as hospitalisations, coronial records, attendances at some Emergency Departments and calls to the National Poisons Centre. The HSDIRT is an additional data source and will provide information about presentations to primary care as a result of exposure to hazardous substances.

Why BPAC?

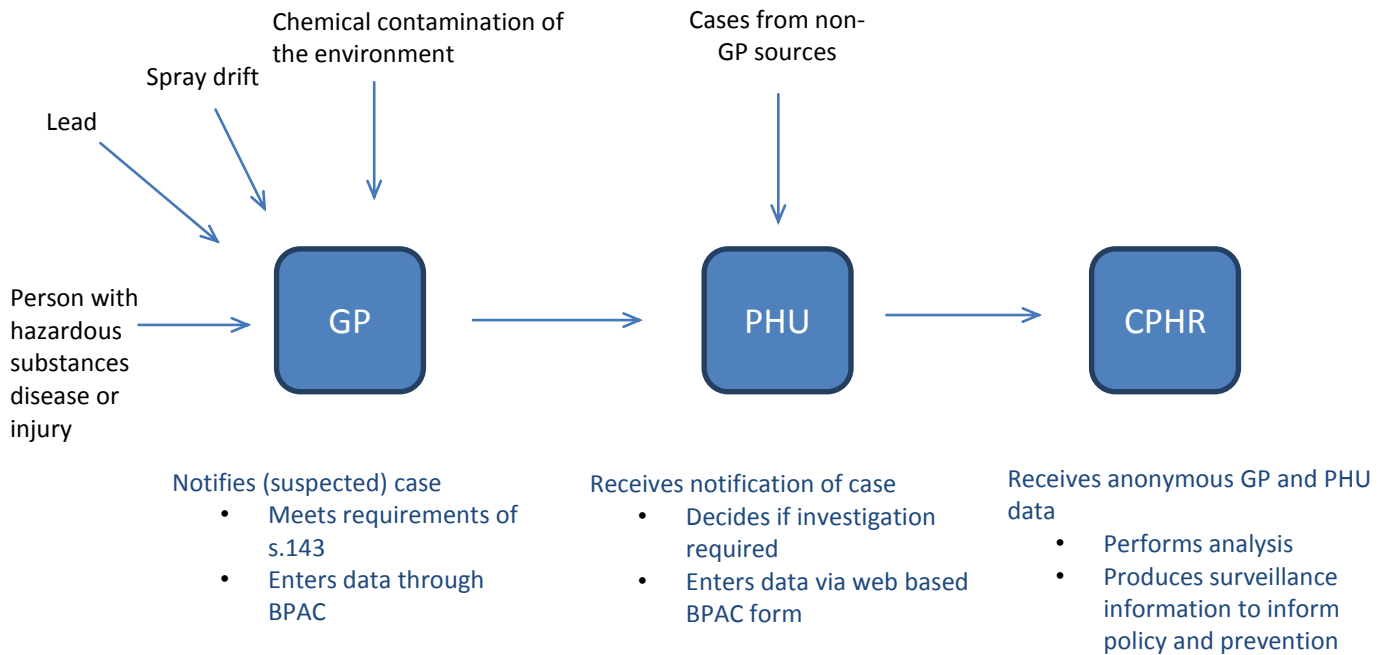
BPAC (or *bestpractice* Decision Support) is a web-based system for decision support that is designed for general practice. Their modules are commonly used by GPs for screening, risk assessment, management and referral and are commonly and widely used around the country. The development and addition of the Centre for Adverse Reactions Monitoring form for reporting adverse drug reactions led the Ministry of Health to adopt the BPAC system for the development and implementation of the HSDIRT.

How does the HSDIRT work?

When a patient presents to primary care with an injury or disease related to exposure to a hazardous substance (HSNO Act); or lead or chemical contamination of the environment (including spray drift) (Health Act), the GP is able to electronically notify the Medical Officer of Health (MOH) via a BPAC form. The MOH is sent an email (containing no identifiable data) alerting them that a notification has been sent, and they are able to log on to the BPAC secure system to access the notification.

The Public Health Unit (PHU) enters data into the form and submits it electronically to CPHR via BPAC. BPAC removes identifiable data before making the data available to CPHR for analysis for surveillance purposes.

¹ The HSNO Act uses the term "injury". This has been defined to include disease as well as injury.



Wouldn't it be better to collect cases directly from the electronic ACC form?

Accident Compensation Corporation (ACC) data has been considered previously and decided against as a single source for primary care information. While case ascertainment would be high, the quality of the data in ACC forms is less fit for the purpose of hazardous substances disease and injury surveillance, and would result in lower quality surveillance information.

What is a case?

The HSDIRT requires PHUs to assign a case status of definite, probable, possible, not a case or insufficient information to assign case status. Guidance is provided for assigning case status in the *User's Guide for PHUs*. The process is based on the US National Institute of Occupational Safety and Health model and combines the exposure history, the health effects and the evidence supporting a causal relationship.

There may be situations where a GP's diagnosis (or ACC assessment) will be different to the case status assigned by the PHU. This reflects the different classification systems.

How do we know we have a notification?

The email addresses you have supplied will be used to inform PHUs that new notifications have been sent by GPs. Public Health Units will need to ensure that these email addresses will be checked routinely, including during periods of annual leave where individuals' rather than generic email addresses have been supplied.

Please notify us if you wish to change the email address.

What notifications are investigated?

The MOH will decide whether an investigation is required. Please refer to the *User's Guide for PHUs* for guidance. It is anticipated that most HSNO Act notifications will not require follow up but may lead to national or local investigation based on trend data.

What is the security and privacy surrounding notifications?

BPAC have provided the following information on security and privacy of health information via their system.

Secure, requiring user authentication and authorisation

All BPAC products need a user name and password to be able to access the programmes. We run server side SSL certificates and use uuencoded documents and bit level encryption to secure the data in transmission.

Able to meet all relevant aspects of the Health Information Privacy Code 1994 relating to the collection, management and disclosure of health information.

The security for the *bestpractice* servers and application meets or exceeds current New Zealand health standards and includes:

- Health provider access to *bestpractice* is confirmed with username, password server side digital certificate
- Servers are additionally protected from the outside world with industry grade firewalls, intrusion detection, server hardening and security vulnerability patching
- BPAC servers housed in a secure data hosting facility that provides both electronic and physical security along with natural disaster and fire protection
- Storage of data and personal information complies with the Health Information Privacy Code 1994 and the Privacy Act
- The data base is security controlled and access is restricted. All authorised access to the data base is logged and activity recorded.
- All staff with access to any hardware or data files have signed confidentiality agreements as part of their employment contract

What happens to notifications arising from occupational exposures?

“Section 143 of the HSNO Act 1996 does not differentiate between non-occupational and occupational exposures. Therefore, notifications are required for both modes of exposure.

Complaints received by the medical officer of health with respect to workplace-related injuries must be referred to the Department of Labour. The medical officer of health must inform the person (and the employer if the person agrees) of this obligation. It should be noted that identifiable information from an occupational-injury notification cannot be passed on to the Department of Labour by the medical officer of health without the individual's consent.

If the case does not give consent, medical officers of health may not pass on any information to the Department of Labour that may identify the case, unless they can satisfy themselves that the disclosure is necessary to prevent or lessen a serious and imminent threat to public health or public

safety, or to the life or health of the individual concerned or another individual (Rule 11(2)(d) of the Health Information Privacy Code 1994)".

From: Ministry of Health. 2009. *The Investigation and Surveillance of Poisoning and Hazardous-substance Injuries: Guidelines for Public Health Units*. Wellington: Ministry of Health p.49

When notifications are received by PHUs through the HSDIRT, the same requirements for consent for referral will apply. Judgement based on factors such as injury or disease severity, circumstances of the exposure and what is known about the effects of the substance will need to be applied to determine what occupational cases are followed up to obtain consent for referral.

The Department of Labour has now been integrated into the Ministry of Business, Innovation and Employment (MBIE) but remains responsible for the administration and enforcement of provisions under the Health and Safety in Employment Act 1992. It may investigate incidents under the provisions of this act, or the HSNO Act 1996.

CPHR will collate and analyse the occupational notifications as well as the non-occupational notifications. This information will be provided to MBIE.

What happens with occupational lead absorption notifications?

Schedule 2 of the Health Act 1956 was amended in 2012 to remove any implication that MOsH have a statutory role in occupational health. Section B of Schedule 2 continues to list lead absorption, allowing the notification of non-occupational cases. For notifications under Section B, the obligations of MOsH are unchanged, ie. public health action such as investigations and follow up will occur as and when appropriate.

Lead absorption is also covered by the HSNO Act. Notifications by medical practitioners of hazardous substances disease and injury will therefore include workplace exposures.

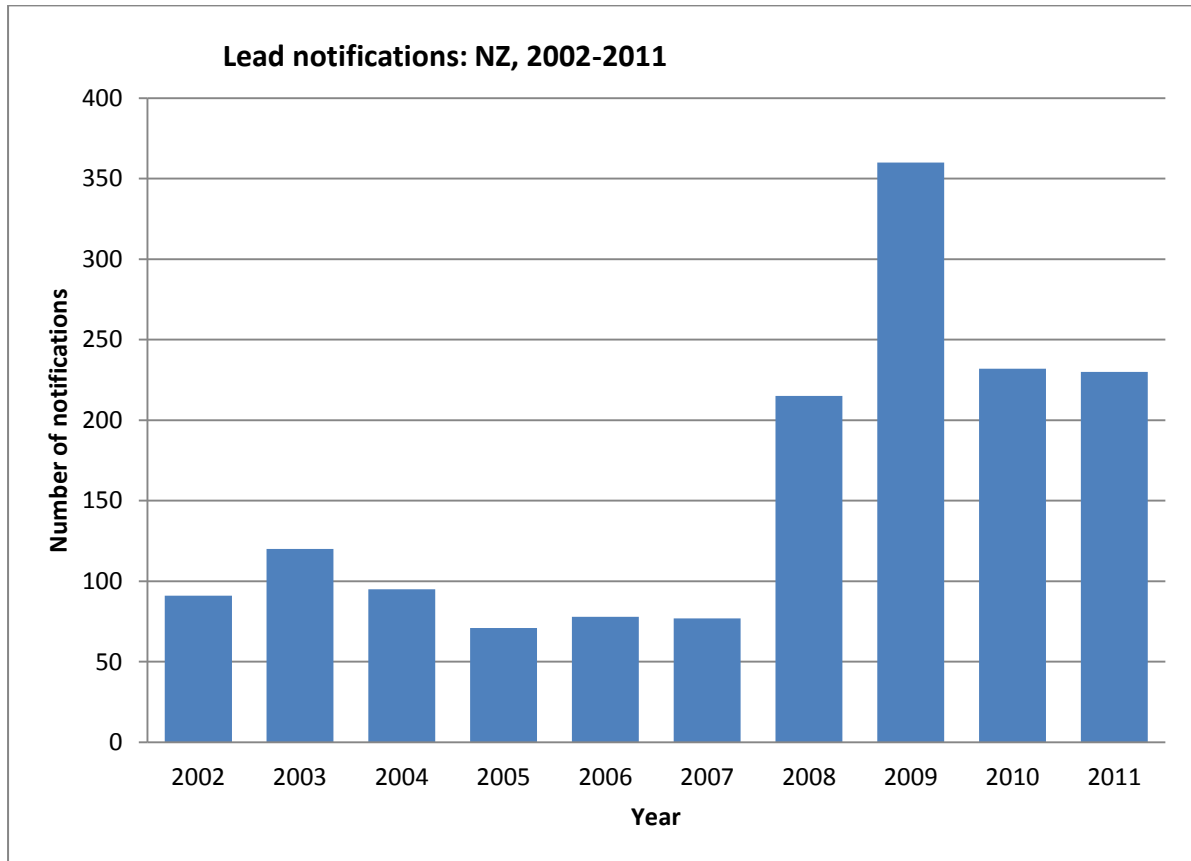
In practice, MOsH will receive notifications both from medical practitioners regarding workplace and non-workplace exposure and from direct laboratory notification (DLN) which have little or no exposure information. If the workplace is identified as a source of exposure MOsH may still choose to follow up cases, particularly if the blood lead level is high enough for para-occupational exposures to potentially be of concern (eg. where a painter may take home work clothing exposing children to lead or transport children in a work vehicle), or where additional exposure sources are involved (eg. hobbies or ayurvedic medicines).

Occupational lead absorption cases should be entered into the HSDIRT.

What happens with direct laboratory notifications (DLNs) of lead absorption?

Hazardous substances and poisoning arising from chemical contamination of the environment notifications are uncommon and processes vary considerably between regions. Conversely lead absorption notifications are more common and have had a well-established system in place through EpiSurv. Developing a system to incorporate all three types of notification has required a balancing of the differing requirements.

Lead notifications have changed considerably over the last five years following the introduction of DLNs and the lowering of the non-occupational blood level to 0.48 $\mu\text{mol/L}$. As seen below, there has been a large increase in the number of notifications. The total number of notifications in 2011 was 230.



Direct laboratory notifications have limited information: the test result, case name, case address, case date of birth, ordering medical practitioner and in some cases, NHI. Further information is usually gained by phoning the practice of the ordering medical practitioner and entered manually into the case report form.

With the increase in DLNs, there has been a reduction in the number notified directly from medical practitioners to virtually nil in some areas.

There is not currently a mechanism for DLNs to automatically be transferred to the HSDIRT as currently exists for transferring into an EpiSurv case report form. As the number of DLNs is relatively small the Ministry of Health has decided that PHU staff are to transfer DLNs of lead from EpiSurv into the HSDIRT. This will require manual data entry of the data (approximately six fields), but allow a complete dataset for analysis. Based on the 2011 numbers, this will be approximately 10 notifications per month for Auckland Regional Public Health Service, two per month for Regional Public Health, Community and Public Health, and Health Waikato, and less frequently for other PHUs.

It is suggested that the PHU call the general practice after a DLN has been received and encourage them to complete the HSDIRT. This gives the PHU vital clinical information, does not require data to be manually transferred from the back end of EpiSurv (the GP can attach the blood result to the HSDIRT) and familiarises the GP with the notification form for future notifications.

What happens with serial blood lead results?

It is the PHU's role to arrange repeat blood lead testing of the index lead absorption case and other household residents as required, as described in the Ministry of Health's lead guidelines. In most cases, a slow but steady fall is expected with a case's blood lead level remaining over 0.48 $\mu\text{mol/L}$ for a prolonged period in some instances. A levelling out or a rebound of the blood lead level, would be a cause for concern and likely prompt re-evaluation.

Serial blood lead results can be attached to the original notification.

Second and subsequent blood lead levels should not be entered into the HSDIRT unless further investigation of a level of $\geq 0.48 \mu\text{mol/L}$ is performed, in which case a new notification should be completed.

What are the PHU workload implications?

It is difficult to predict how many cases will be notified by GPs during the first 12 months. We expect 'a trickle rather than a flood'. The last Chemical Injury Surveillance report had eight cases reported nationally for 2008. As things are expected to develop slowly, we expect that capacity will be able to develop gradually with one year's cases for a PHU informing the amount of resource required in the next year.

Is there a loss of functionality in moving from the EpiSurv case report forms to the HSDIRT?

Yes. The HSDIRT has been developed with the principles of simplicity and acceptability foremost. Questions on the previous case report forms for hazardous substances injury and lead absorption have been rationalised and questions and functions kept to a minimum. Many of the reporting functions of EpiSurv will not be possible, but simple reports and raw data will be supplied to PHUs regularly (quarterly or six monthly depending on the number of cases). PHUs will also be able to make ad hoc requests including GIS coding of cases, where appropriate, to CPHR.

Other locally developed tools or systems which are based on EpiSurv may or may not be able to be adapted to the BPAC system. This will need to be addressed at the local level.

Are GPs going to use the HSDIRT?

We acknowledge that this notification system will require the co-operation of GPs, and will develop slowly over time. We expect that with education about the benefits of notification, feedback on cases that they do notify and a reminder of the legislation underpinning the notification that most GPs will eventually notify cases.

We ask PHUs to assist by including messages regarding hazardous substances disease and injury notifications in discussions or communications with primary care and to promote the HSDIRT through other locally appropriate means. Some material is available from CPHR for adaption for local use. Examples of local activities to date include articles in newsletters, fast faxes/mail-outs, and presentation at a GP Continuing Medical Education session on poisoning. National promotion will be occurring over the next year through the BPAC Journal and professional media eg. NZ Doctor.

In the medium term, we hope to develop tools such as the 'patient prompt' where GPs are reminded to notify by an alert linked to particular diagnosis codes and laboratory requests.

Can emergency departments and secondary care access the HSDIRT?

Notifications from emergency departments are not yet able to be incorporated as electronic notifications due to the large number of different IT systems that are currently operating throughout New Zealand – this may be possible in the future when emergency department systems are aligned. However, we encourage PHUs who currently have arrangements with their local emergency departments to include these cases by manually entering the data where possible.

If a medical practitioner with no access to a practice management system is keen to notify electronically a user name and password can be arranged for that medical practitioner to access the HSDIRT via the web. Please contact us to arrange this.

When does the HSDIRT roll out nationally?

The HSDIRT commenced on 1 February 2013 with a pilot period at Regional Public Health.

A revised version which incorporated feedback from the pilot commenced on 6 June 2013.

6 June 2013: Taranaki and Waikato

24 June 2013: Nelson-Marlborough, MidCentral and Tairāwhiti

1 July 2013: Public Health South, Community and Public Health, and Hawke's Bay

15 July 2013: Toi Te Ora

1 November 2013: Auckland Regional Public Health Service

To be confirmed: Northland

What changes have been made to HSDIRT as a result of feedback?

As a result of feedback from the pilot with Regional Public Health and discussion with other users the notification system has been updated with functions including:

- The ability for practice nurses to complete a form on behalf of a notifying GP
- A reorganisation of the lead absorption fields to improve the data entry for DLNs
- A function to allow PHUs to attach documents to the notification form eg. case investigation notes.

The HSDIRT will present some challenges for both PHUs and primary care. Over time other functions may be added eg. direct laboratory notification into the HSDIRT and refinements made as we continue to develop and improve the surveillance system.

If you have suggestions for improvements please contact us.

How can the data inform preventive action?

In 2005 dishwasher powders were recognised as an area of concern with large numbers of children ingesting caustic dishwashing powder and requiring medical attention. Between January 2003 and January 2005 there were 610 calls to the National Poisons Centre (NPC) and 11 admissions to Starship Hospital including five to intensive care. No information was available about primary care cases.

These data were used to inform public health action. A Safekids awareness campaign was initiated and in 2007 ERMA New Zealand (now the Environmental Protection Authority) made changes to the corrosive cleaning products group standard prohibiting the sale of dishwashing powders with a pH of greater than 12.5. Group standards are a regulatory mechanism under part 6A of the HSNO Act 1996 which provide an approval and control regime for specific groups of hazardous substances. As a result of these actions the number of children referred for medical attention following a call to the NPC for dishwashing powder ingestion has decreased considerably.

The HSDIRT, as part of the overall hazardous substances surveillance system aims to identify strategies that might reduce future morbidity and mortality resulting from exposure to hazardous substances. Primary care and PHU data obtained through the reporting tool will be a useful new source of information to achieve this aim.

Key points

- Surveillance is done to inform public health action
- Dishwashing powder is a useful example of how changes can be made to improve health outcomes
- Primary care and PHU data is important for both immediate control measures and longer term preventive action.

Refs: Bertinelli, A et al. Serious injuries from dishwasher powder ingestions in small children. *Journal of Paediatrics and Child Health* **42** (2006) 129-133.

Environmental Risk Management Authority New Zealand. Monitoring Report 2011. Available at <http://www.epa.govt.nz/Publications/Monitoring%20Report%202011.pdf>

Safekids New Zealand. Children ingesting dishwashing powder: Update 2007. Available at <http://www.safekids.org.nz/Downloads/Safekids%20Position%20Papers/Safekids%20position%20paper%20Children%20ingesting%20dishwashing%20powder%20-%20Update%202007.pdf>

What is the extent of morbidity from exposure to hazardous substances?

This information comes from a dataset compiled by CPHR for the Ministry of Health. It includes hospitalisations from hazardous substances. Poisonings due to medicines and alcohol (excluding industrial alcohol) are not included as these substances are not covered under the HSNO Act 1996.

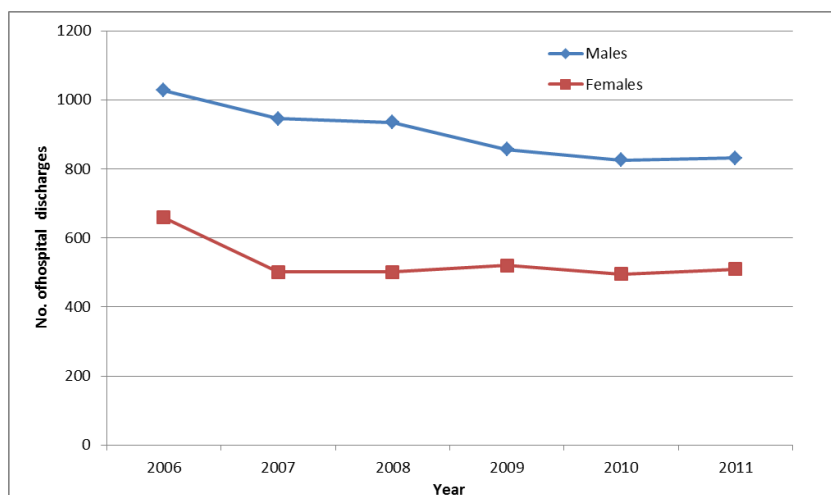


Figure 1: Number of hospital discharges due to hazardous substance exposure, 2006-2011

From 2006-2011 there has been a decline in the overall number of admissions for both males and females. Looking at the 2011 data alone, there were 1342 hospitalisations, with 62% for males. Over half were for unintentional poisoning (52%), 24% intentional and another 24% were undetermined. The three most common diagnosis groups were solvents, hydrocarbons and corrosive substances (T520-T549), carbon monoxide (T58) and gases, fumes and vapours (T590-T599). Figure 2 shows the age groups affected in 2011. Under five year-olds and working age adults are important affected groups.

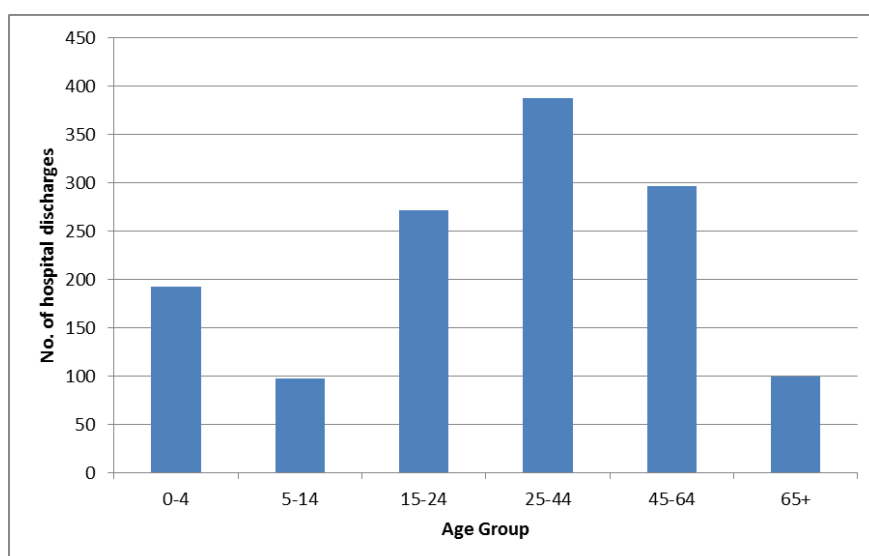


Figure 2: Number of hospital discharges due to hazardous substance exposure, by age group, 2011

Hospital discharges from poisoning are only the 'tip of the iceberg' in terms of injury and disease resulting from hazardous substances, but describe part of an important problem in New Zealand. Current surveillance also incorporates mortality data and National Poisons Centre calls.

Where can I find useful resources about hazardous substances?

Lists of resources for PHUs (refer to Appendix 2 *User's Guide for PHUs*) and for GPs are available under the Resources tab of the HSDIRT. The resources may be useful in the investigation of a notification, or in deciding whether a notification needs to occur. There are some health education resources that would be useful for patients.

If you have suggestions of additional resources which may be useful to PHU staff or GPs please let us know and these can be added to the list.

Who do I contact?

If you have any data enquiries or suggestions for modifications to the HSDIRT or additional resources please contact Helene Marsters, or alternatively Barry Borman.

Helene Marsters Research Assistant E: t.h.marsters@massey.ac.nz T: 0800 588 265	Assoc Prof Barry Borman Associate Director E: b.borman@massey.ac.nz T: 04 801 4985
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For queries around national communications to GPs please contact Maria Poynter, or alternatively Deborah Read.

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