

Hazardous Substances Disease and Injury Reporting Tool

A User's Guide for Public Health Units

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1. Introduction

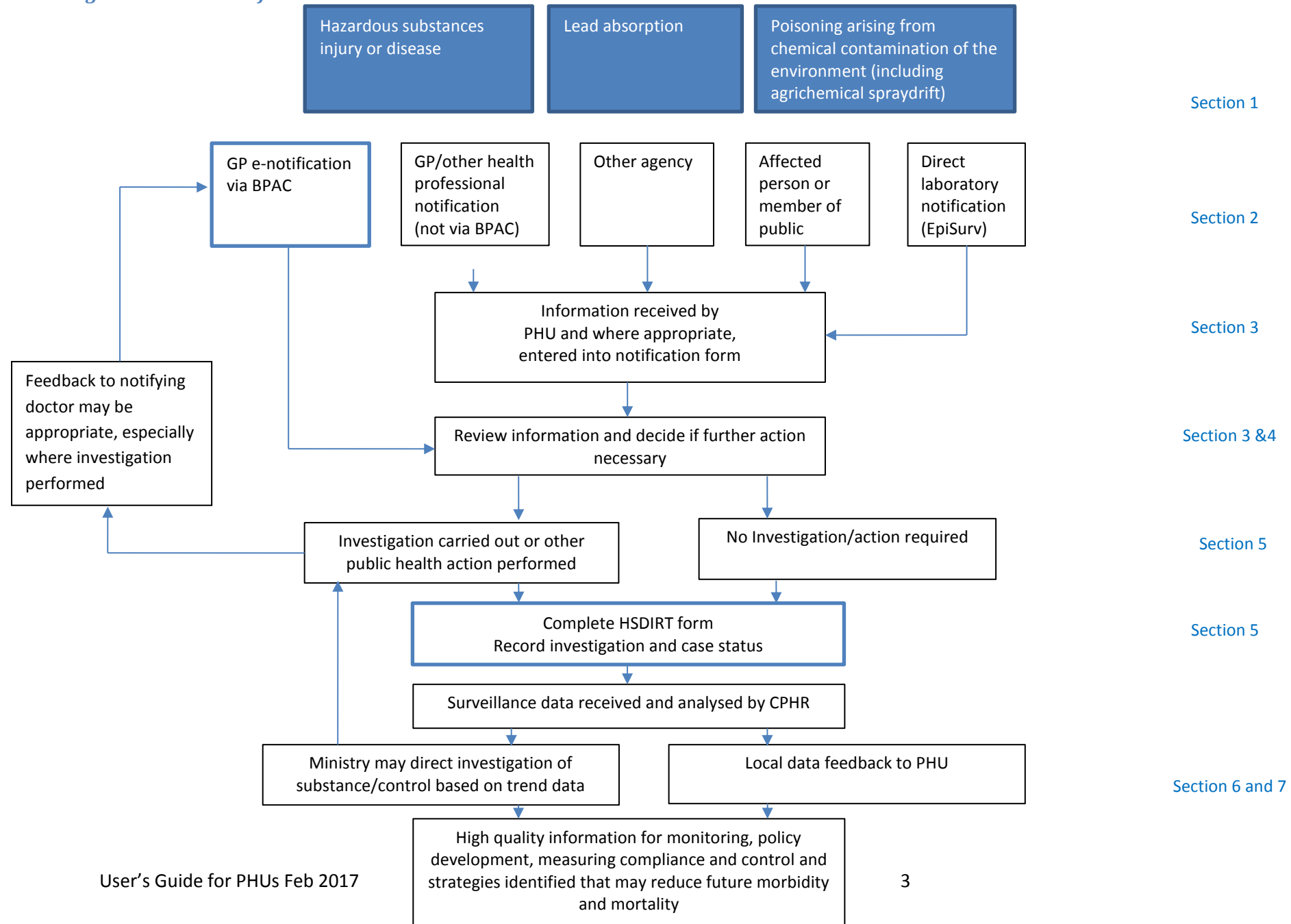
Hazardous substances disease and injuries are required to be notified to a Medical Officer of Health under section 143 2(A) of the Hazardous Substances and New Organisms (HSNO) Act 1996. The Hazardous Substances Disease and Injury Reporting Tool (HSDIRT) was implemented in 2013 to give general practitioners (GPs) an easy mechanism by which to notify cases: an electronic notification form linked to a Patient Management System. The reporting tool was developed by *Bestpractice* decision support (BPAC Inc) and the Environmental Health Indicators Programme (EHIP), Centre for Public Health Research, Massey University (CPHR) for the Ministry of Health.

The system allows public health units (PHUs) to electronically receive notifications from GPs. Notifications can be reviewed, further data added and the cases submitted to the nationwide Hazardous Substances Surveillance System (HSSS) with identifiable data removed. The HSSS is maintained by CPHR for the Ministry of Health.

Surveillance data from PHUs contributes to the overall objectives of the HSSS, which are:

- To describe the distribution and characteristics of exposure to hazardous substances
- To describe the morbidity and mortality experienced by workers and the general public (including children) as a result of exposure to hazardous substances
- To provide high quality information on outcomes, exposures, and hazards for monitoring, policy development, measuring compliance and control
- To identify strategies that might reduce future morbidity and mortality resulting from exposure to hazardous substances.

Figure 1: Overview of HSDIRT



This User's guide explains the HSDIRT system delivered via BPAC. This guide should be used alongside a PHU's existing processes for the investigation of hazardous substances injury or disease, lead absorption or poisoning arising from chemical contamination of the environment. Progressively throughout 2013, the HSDIRT system replaced lead absorption and chemical injury case reporting through EpiSurv.

1.1 Types of notifications included in the HSDIRT

The Ministry of Health decided that the following notifiable conditions were included in the HSDIRT.

- **Hazardous substances injury or disease**

A hazardous substance is defined in the HSNO Act 1996 as anything that can explode, catch fire, oxidise, corrode, or be toxic to humans. The act was amended in 2005 requiring all medical practitioners to notify injuries caused by hazardous substances to the Medical Officer of Health (see Appendix 1 for section 143 2(A) of the legislation).

The Ministry of Health defines 'injury' for the purposes of section 143 as *any physical harm or damage serious enough to warrant medical treatment by a health professional either at the scene or in a hospital or primary care practice* (Environmental Health Protection Manual Section 11 Hazardous Substances).

Injuries or diseases caused by hazardous substances form a vast group of diagnoses and include children swallowing cleaning products or cosmetics, intentional overdoses with agrichemicals, some carbon monoxide poisoning (related to faulty gas cylinders), illness caused by exposure to chemicals such as solvents or chlorine, contact dermatitis from chemicals, a fireworks burn or eye injury, or inhalation or 'huffing' of butane.

It does not include medicines in finished dose form (and therefore over-the-counter and prescription drug overdoses), alcohol when classified as a food, chemical toxins associated with food¹, nor radioactive materials as these are covered by different legislation.

- **Lead absorption**

Notification of non-occupational cases of lead absorption $\geq 0.48 \mu\text{mol/L}$ is required under the Health Act 1956 (also in Appendix 1) and occupational as well as non-occupational cases under the HSNO Act. Although there is no cut-off level for notification of lead absorption in the HSNO Act the Ministry of Health has adopted the same level at which public health action occurs under the Health Act. The electronic HSDIRT form is used for these notifications, from both direct laboratory notification and clinician notification.

¹ Gastroenteritis from chemical toxins associated with food (e.g. toxic shellfish poisoning, ciguatera fish poisoning) are entered into EpiSurv as "acute gastroenteritis" notifications and not into HSDIRT.

- **Poisoning arising from chemical contamination of the environment**

Cases of injury due to chemical contamination of the environment are also required under the Health Act 1956 and can be notified using this form. Examples include a doctor reporting health effects following an agrichemical spray drift event, a skin effect following an oil spill event, cyanotoxin-related illness, and carbon monoxide poisoning where the source is a gas cylinder (e.g. from incorrect use of a gas appliance).

Other notifications: Occupational disease and injury

Section 199 of the Health and Safety at Work Act 2015 requires Medical Officers of Health to advise WorkSafe New Zealand (WorkSafe) of work-related notifiable disease or hazardous substances injury. This requirement took effect from 4 April 2016 and applies in cases of:

1. a notification under [section 74](#) of the Health Act 1956 of a notifiable disease that he or she reasonably believes arises from work; and
2. a notification under [section 143](#) of the HSNO Act 1996 of an injury caused by a hazardous substance that he or she reasonably believes arises from work.

Only the name of the case and the nature of the disease or injury are required. The case's informed consent is required before any other information can be disclosed unless one of the exceptions under Rule 11 of the Health Information Privacy Code 1994² applies.

Occupational notifications (whether investigated or not) are analysed by EHIP and non-identifying aggregate data are published.

Notification on suspicion, excluding lead

GPs are expected to notify cases on suspicion of hazardous substances injury or disease, except for lead absorption where a confirmed lead level of $\geq 0.48 \mu\text{mol/L}$ is required.

WorkSafe requires only confirmed cases to be notified by the medical officer of health to them.

1.2 General practitioner access to HSDIRT

All GPs are able to have access to the HSDIRT as it is a nationally funded BPAC module, alongside a range of other modules such as adverse drug reaction reporting and childhood asthma management plans. However some choose not to have BPAC installed on their computer and will therefore not be able to access the notification form.

MedTech, MyPractice and Profile

The HSDIRT was initially available to GPs who use MedTech as their practice management system – this is the majority of New Zealand GPs. Those practices that didn't use MedTech needed to log on to the *bestpractice* website, rather than go directly through their PMS. This was a longer route, and also meant that patient demographic information couldn't be automatically populated into the form. Since April 2014, the HSDIRT screen became available for users of MyPractice and Profile Practice Management System.

² <http://www.privacy.org.nz/assets/Files/Codes-of-Practice-materials/Health-Information-Privacy-Code-1994-including-Amendment.pdf>

For GP MedTech users, an icon is able to be installed which gives immediate access to the form. Instructions on how to install this icon are available to GPs by contacting BPAC or via this article http://pilot.bestpractice.org.nz/hazards_icon.html.

Where GPs do not have access to the HSDIRT, notification can be made by phoning or faxing the PHU as is done for other notifiable diseases.

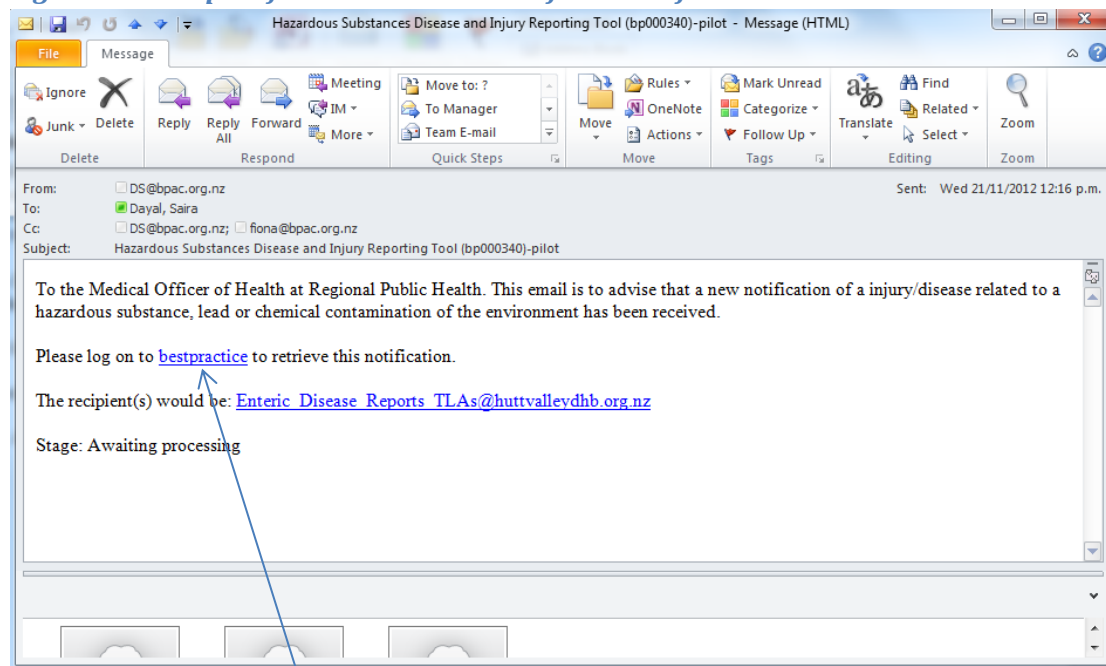
Notification by a practice nurse on behalf of a GP is commonplace for many notifiable diseases and is also possible using the HSDIRT.

2. Receiving a notification

2.1 Email alert of new notification via BPAC

PHUs have an email address to which an alert of a new electronic notification from a GP will be sent. This email address should be checked regularly; as a minimum daily on weekdays. An automated email will alert your PHU that new notifications have been received.

Figure 2: Example of email to alert PHU of new notification



Click on this link to open the new notification.

To access the notification, click on the link in the email. This will access the BPAC site, ask for a username and password, then directly open the notification form as completed by the GP. As the notification is to the Medical Officer of Health, the person accessing the notification and the enclosed confidential clinical information does so under the delegated authority of the Medical Officer of Health.

2.2 Notification from another source

Notifications will also be received by the PHU through other means, for example a GP phone call, emergency department notification or another hospital clinician. These notifications can be entered into the HSDIRT by PHU staff opening a new (blank) notification form. Legislation (Health Act 1956 and HSNO Act 1996) requires that notifications are made by medical practitioners. Other notifications to the PHU from affected people directly or other agencies including the Fire Service may be included if a doctor subsequently agrees to notify. This doctor may be the Medical Officer of Health.

This can be done by going to <https://www.bestpractice.org.nz> and logging on using a user name and password. Select the 'HazSub and Lead Notification' from the module list on the dashboard to open a new form. The popup blocker needs to be switched off for a form to be opened.

Figure 3: Opening a new form- the BPAC dashboard

Welcome
Demonstration PHU User 1
not you?

Dashboard
20 January 2017

Modules
Favourites Recently Used

Hazardous Subs & Lead Notifications
Hazardous Substances Administration
Hazardous Substances CSV Export

Module List
open all close all

Hazardous Substances & Lead Notifications
Hazardous Subs & Lead Notifications
Hazardous Substances Administration
Hazardous Substances CSV Export

bestpractice © 2005 - 2016
Support Line: 0800 633 236

Click the plus sign to show all modules available

PHUs can export their own data from the Hazardous Substances CSV Export function.

Selecting the green tick will add the new form to the favourites, top right

Complete the fields in the tabs as described in section 3.

2.3 Direct Laboratory Notifications

Direct laboratory notifications (DLNs) are received through the EpiSurv e-notification system as the HSDIRT system does not currently have compatibility with direct laboratory notification.

Lead DLNs must therefore be transferred into the HSDIRT system. This may be done by printing the notification from EpiSurv then opening a new notification form as described above. The data from the DLN can then be transferred into the relevant fields in the HSDIRT form. Enter the data available from the DLN - this may include entering unknown into several fields and editing at a later date if more information is identified. After submitting the notification form to your PHU, the form can then be accessed via the Administration module with full PHU functions available.

2.4 Submitting a new HSDIRT form

Where PHUs are entering data, enter all information available at the time and select unknown if required (e.g. a DLN where no exposure event information was available). Further information, when obtained, can be entered later by accessing the form from the administration view (see section 4).

It is recommended that PHUs 'submit' notifications and then access them through the administration view for further completion so the full range of functions (e.g. printing, attach files and park) available to PHUs can be accessed. Some functions (e.g. park a case) are not available until the form is submitted to PHUs.

Figure 4: Submitting a new form

Hazardous Substances Disease & Injury Reporting Tool

bestpractice
DECISION SUPPORT FOR HEALTH PROFESSIONALS

Exposure Event | Assessment | Notifier / Patient Details | PHU Review

Send notification to Medical Officer of Health at: **Demonstration PHU**

Exposure Event

Exposure route: Ingestion Inhalation Skin contact Eye contact Unknown

Date exposure began: OR Month/Year OR Unknown

Exposure length: < 1 day between 1 day & 1 month ≥1 month Unknown

Place of exposure: Home Workplace School/ECC
 Public place Unknown Other

Intent: Unintentional Intentional Unknown

Is this case known to be linked to other cases of the same exposure event? Yes No

Substance

Substance categories: Household chemical Agrichemical Industrial chemical
 Fireworks/explosive Lead Unknown
 Other

Examples: Household: cosmetic, dishwashing powder; Agrichemical: pesticide, animal remedies, spraydrift; Industrial: solvent, chlorine, fumigant; Other: mercury, arsenic

Substance name (complete at least 1 field)

Chemical name	Product name	Common name	Unknown
e.g. sodium hypochlorite	Janola	bleach	<input type="checkbox"/>

Refresh | Park | Cancel | Submit

PHUs won't be able to use this function until a case has been submitted to them.

PHUs need to submit notifications to themselves so that the full range of functions (e.g. print, attach and park) available to PHUs can be accessed.

Figure 5: Administration view

Hazardous Substances forms: CPHR User 1

NHI	Status	Recipient	Created	Substance Category	Case Assignment	PHU action
ABC1235	Processed	Centre for Public Health Research	04/10/16 09:53	Household chemical	Definite case	No further investigation
JDR1234	Processed	Centre for Public Health Research	03/06/16 14:34	Lead	Definite case	Investigation underway
JDR1234	Processed	Centre for Public Health Research	03/06/16 12:51	Lead	Definite case	Investigation underway
JDR1234	Processed	Centre for Public Health Research	03/06/16 12:28	Lead	Definite case	Investigation underway
JDR1234	Processed	Centre for Public Health Research	03/06/16 12:12	Lead	Definite case	Investigation underway
AAA9999	Processed	Centre for Public Health Research	21/04/15 08:39	Household chemical	Definite case	Investigation underway
TEST	Processed	Centre for Public Health Research	18/08/14 13:30	Unknown	Definite case	No further investigation

After submitting a case, PHU users can open the case here to get access to the full range of available functions.

3. Notification form

The notification form is grouped into sections or 'tabs'. Each tab can be viewed by clicking on the title: 'Exposure Event', 'Assessment', 'Notifier/Patient details', 'PHU Review' and 'Resources'. The PHU Review Tab is visible to PHUs only. Move between the tabs by clicking on the title at the top or bottom.

Where a notification is received electronically from a GP, the first three tabs will be completed, but these may be edited by the PHU where more up to date, correct or further data are identified. PHUs are to enter as much information as is available to them to ensure useful information for surveillance purposes.

When a notification form is opened from the administration view, the PHU will notice the buttons at the bottom of the page – 'Attach', 'Print', 'Park', 'Forward', 'Cancel', and 'CPHR'. 'Attach' allows a file to be attached to the notification (see section 3.4). 'Print' allows a copy of the form to be printed. 'Park' allows the form to be closed and re-opened at a later time (through the administration view). 'Forward' is to send the notification to a different PHU if required (see section 5.5). 'Cancel' closes a form without keeping the entered information and 'CPHR' sends a completed form to CPHR for analysis. The form becomes **read only** after it is sent to CPHR.

CPHR will not receive a notification until the PHU completes a case and submits the form to CPHR.

Figure 6: HSDIRT reporting form

Buttons to complete form: **Attach** a file, **Print**, **Park** for later completion, **Forward** to another PHU, **Cancel** without saving and **CPHR** to submit completed form

3.1 Notifier/Patient Details tab

PHUs can start by clicking on and reviewing the Notifier/Patient details tab. Note that the information is pre-populated from the Practice Management System and may not have been viewed by a GP or verified with the patient, so may not be up to date. Occupational data in particular may be incomplete or out of date. Enter corrected data where available.

If entering data for a notification from another source or DLN, enter the details of the medical practitioner notifying the case in the 'Notifier Details'. This may be an after-hours GP, occupational health physician, emergency department doctor and may not be the usual GP (recorded in the right column).

The name of a parent or guardian is requested if the age indicates the patient is younger than 16 years.

Figure 7: Notifier/Patient Details tab

Click on titles to move between tabs. Start with Notifier/Patient details

Hazardous Substances Disease & Injury Reporting Tool

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DECISION SUPPORT FOR HEALTH PROFESSIONALS

Exposure Event | Assessment | **Notifier / Patient Details** | PHU Review

Notifier Details

Name: Saira Dayal | Assessment date: 24/04/2013

NZMC/NZNC: 69007

Role: Demo

Practice: Acme Medical Centre

Address: 66 Central Drive, Octagon, Dunedin

Phone: 03 477 7744

Usual GP (if different to Notifier)

Name: | Practice: | NZMC: | Town/City: | Phone: |

Case demography

Family Name: FourteenYearOld | Title: MR

First Name(s): Boy | Gender: Male Female

Date of Birth (dd/mm/yyyy): 05/12/1997 | NHI: 023jnsbx

Parent/Guardian Mary Smith
Required if person is younger than 16 years.

Street Address: 123 Massey Street | Home phone: |

Suburb: | Work phone: |

Town/City: Nelson | Mobile phone: |

Postcode: |

Ethnicity: Please Select | Occupation: |

Ethnicity: Not stated

Ethnicity: Not stated

Exposure Event | Assessment | **Notifier / Patient Details** | PHU Review

Attach | Print | Park | Forward | Cancel | CPHR

Name of parent or guardian is requested if the patient is younger than 16 years

Occupation is drawn from the PMS, if not complete or current - update the field

3.2 Exposure Event tab

Details regarding the exposure to the hazardous substance are recorded in the Exposure Event tab. Review the details entered by a GP, or enter new data here.

Additional fields drop down when specific fields are selected. If 'Place of exposure' is workplace, a separate occupation field appears – this acts as a reminder to enter up to date data. If the substance category is agrichemical, a spraydrift question appears. A further section appears if lead is selected: asking for the blood lead result and the setting/ source(s) of exposure. The settings of lead exposure field (options from 'Occupational', 'Non-occupational' and 'Unknown') requires an option to be selected prior to submitting to CPHR.

In the substance name category, GPs are advised to enter a name into at least one category (chemical name, product name or common name), or unknown. PHUs are asked to enter all the information they have – where possible a chemical name and product name can be added to a common name. More than one substance name can be entered by clicking on the '+' sign on the right to add a further line to enter data into.

Figure 8: Exposure Event tab

Exposure Event | Assessment | Notifier / Patient Details | PHU Review

Send notification to Medical Officer of Health at:

Exposure Event

Exposure route: Ingestion Inhalation Skin contact Eye contact Unknown

Date exposure began: OR Month/Year OR Unknown

Exposure length: < 1 day between 1 day & 1 month ≥1 month

Place of exposure: Home Workplace School/ECC
 Public place Unknown Other

Occupation:

If you enter Occupation here it won't be written back to the PMS. If you wish to record in the PMS, update the Occupation field in the PMS and then Refresh the form.

Intent: Unintentional Intentional Unknown

Is this case known to be linked to other cases of the same exposure event? Yes No

Substance

Substance categories: Household chemical Agrichemical Industrial chemical
 Fireworks/explosive Lead Unknown
 Other

Examples: Household: cosmetic, dishwashing powder; Agrichemical: pesticide, animal remedies, spraydrift; Industrial: solvent, chlorine, fumigant; Other: mercury, arsenic

Lead absorption

Did you obtain a whole blood lead specimen for this lead exposure event?
 Yes No

Whole blood lead concentration - µmol/L

Setting of lead exposure: Occupational Non-occupational Unknown

Source(s) of lead exposure:
 Lead based paint Close contact with person whose occupation involves lead exposure
 Pica Indoor rifle range
 Traditional medicine or cosmetic Bullet/sinker manufacture
 Other

Substance name (complete at least 1 field)

Chemical name	Product name	Common name	Unknown
e.g. sodium hypochlorite	Janola	bleach	<input type="checkbox"/>
<input type="text" value="XXXX"/>	<input type="text" value="XXXX"/>	<input type="text"/>	<input type="checkbox"/>

Exposure Event | Assessment | Notifier / Patient Details | PHU Review

Buttons: Attach, Print, Park, Forward, Cancel, CPHR

Lead section: drops down if substance category 'lead' was selected.

If **workplace** is selected, enter occupation if known.

Where multiple substances are involved, click on the plus sign to enter further names.

For the **substance name** field, enter at least one of the 'Chemical name', 'Product name' and 'Common name'. Multiple/ all names can be entered if known.

3.3 Assessment tab

Figure 9 Assessment tab

The screenshot shows the 'Assessment' tab of a software interface. The form is divided into four tabs: 'Exposure Event', 'Assessment', 'Notifier / Patient Details', and 'PHU Review'. The 'Assessment' tab is active. It contains the following sections:

- Systems affected (tick all that apply):** Includes checkboxes for Central nervous system, Cardiovascular, Musculoskeletal, Unknown, Eye, Respiratory, Psychological, Other, Skin, Gastrointestinal, and Nil. A callout box points to this section with the text 'Assessment of exposure and health'.
- Symptoms / signs:** Includes checkboxes for Symptoms only, Signs with/without symptoms, No signs or symptoms, and Unknown.
- Are the symptoms/signs consistent with the substance?:** Includes radio buttons for Yes, No, and Unknown.
- Lab tests requested:** Includes radio buttons for None requested, Pending, and Confirmed.
- Referral:** Includes radio buttons for None, Emergency department, Outpatients, and Other.
- Additional Information:** A text box for entering relevant laboratory results. A callout box points to this box with the text 'Enter relevant laboratory results where available'.

At the bottom of the form are buttons for 'Attach', 'Print', 'Park', 'Forward', 'Cancel', and 'CPHR'.

Review or enter data on the health effects reported. 'Systems affected' describes the health effects observed or described to the GP. For example, a headache categorised as central nervous system, shortness of breath as respiratory, nausea and vomiting as gastrointestinal, anxiety as psychological.

Symptoms are how a person describes their disease or injury and are subjective, e.g. itchiness of skin. Signs are findings seen by a medical practitioner examining a person and are objective, e.g. red rash on skin. Select from 'symptoms only', 'symptoms and signs' or 'no signs or symptoms'. If the requested laboratory tests were pending at the time of notification, a PHU can seek the result from the laboratory. This information can be used later to assist in case assignment (section 5.4).

3.4 Attaching a file

Some PHUs may keep associated files with the notification form in the HSDIRT system. This can be done using the 'Attach' function at the bottom of the screen.

Click 'Browse' and select the required file. The name of the attached file is visible at the bottom of the screen. The attachment is not sent to CPHR when the form is submitted as it may include identifiable information.

After attaching a file to the HSDIRT form, make sure to click 'Park' to save the changes so files won't be lost.

Figure 10: Attaching a file

Substance name (complete at least 1 field)

Chemical name	Product name	Common name	Unknown
e.g. sodium hypochlorite	Janola	bleach	
<input type="text"/>	<input type="text"/>	<input type="text" value="Dishwashing powder tablet"/>	<input type="checkbox"/>

Exposure Event
Assessment
Notifier / Patient Details
PHU Review ▶

Attachments

[386hnbv_attachedhdsdirtfile.docx](#)

Attach Print Park Forward Cancel CPHR

Attachments

File Selection

- Press 'Browse' to search your folders for the desired file and then double click on your selection.
- Wait while the file is retrieved, if successful you will get a confirmation message under 'File Upload Status'.

File Upload Status:

386hnbv_attachedhdsdirtfile.docx has been uploaded

- To select a file to attach to your document - check 'Add File'.
- Un-select a file uncheck 'Add File' or the check box beside the file in the 'Attachment Summary' box (at the bottom of the page).
- To attach selected files to the document - press 'Attach Files'.

Files are ordered by date and time of upload, with the most recent at the top.

386hnbv_attachedhdsdirtfile.doc
x

28/05/2013 13:01:33

Add File

1

Attachment Summary

<u>file name:</u>	<u>file size:</u>
386hnbv_attachedhdsdirtfile.docx	12.30 kilobytes <input checked="" type="checkbox"/>

Total Size: 12.3 kilobytes

© bestpractice 2005 - 2013

Click here to open dialog box

4. Administration view

The administration view lists all cases that have been notified to the PHU. They are listed with the most recently notified case at the top. Cases can be sorted according to each column title for example, by substance category or status.

Basic information for team meetings e.g. weekly surveillance meetings can be provided by this view.

Cases can also be deleted from this view using the red box at the right of the table. This may be useful where duplicates have occurred e.g. both clinician and direct laboratory notification. Additionally, if more than one form is completed for a repeat blood lead level on the same person.

Please notify CPHR if the PHU decides to remove a notification.

Figure 11 Administration view

Search: go Main Menu

Hazardous Substances forms: MidCentral PHU User 1									
Patient	NHI	Status	Recipient	Created	Substance Category	Case Assignment	PHU action	PHU Responsible	
Smith, Test	532kjhg	Processed	Centre for Public Health Research	28/05/13 12:10	Lead	Definite case	No further investigation	MidCentral District Health Board	
One year old, Boy	386hnbv	Awaiting processing	MidCentral District Health Board	24/05/13 17:47	Household chemical				
Example, One	670dfgh	Awaiting processing	MidCentral District Health Board	24/05/13 17:41	Agrichemical				
FourteenYearOld, Boy	023jnsbx	Awaiting processing	MidCentral District Health Board	24/05/13 17:32	Fireworks/explosive				

Search the notifications for a particular entry, e.g. NHI number or family name.

Notifications which have been submitted to CPHR remain in the administration view as 'processed'

Sort notifications by clicking on a column heading

5. PHU review of a notification

5.1 Deciding on further action

After reviewing the notification data in each of the Notifier/Patient details, Exposure Event and Assessment tabs, a decision on further action can be made. Some cases may require more information from the general practice or individual. The following advice should be used to supplement local decision-making thresholds for investigation which may vary between PHUs.

Investigation guidelines for notifications received through HSDIRT

Not all cases will require investigation by the PHU and it is expected that the majority of HSNO Act cases will not be investigated. It is expected that PHUs will continue to use their own localised processes and priorities when acting on notifications received via the HSDIRT, and the following guidance is to supplement local decision making.

In the decision to investigate, there are three main responses:

1. No investigation take no further action,
2. Refer to another agency (such as WorkSafe, a territorial authority or regional council), or
3. Begin an investigation.

Investigation may occur with or without referral to another agency; or in conjunction with another agency.

As with any environmental health activity the response that is appropriate will depend on a variety of factors. The Environmental Health Priority framework from the Ministry of Health's Hazardous Substances Action Plan may help guide decision making, in particular:

- Significance: does the notification have a significant impact on the health status of the total population or vulnerable groups such as children or pregnant women?
- Effectiveness: are there effective means to address the issue?
- Timeliness: is there any reason why action must be taken urgently or within specific time-periods e.g. public outrage, statutory timeframes, sample half-lives, seasonality of issue, acute risk to health versus chronic risk
- Compliance with statutory, contractual or other requirements
- Tackling this issue will contribute to promoting health status among at-risk communities such as Māori and Pacific people

Likely to investigate

- Unusual exposure with actual or potential significant health consequences
- Exposure to substance which is subject to strict controls
- Where the PHU has identified evidence of a spatial and/or temporal trend
- Large number of people known to be affected
- Children or other vulnerable population affected
- Significant location of exposure e.g. public park, school, early childhood centre
- And, where the time interval between the event and the notification being received allows for a useful investigation.

Likely not to investigate

- Intentional injuries

E.g. intentional adult carbon monoxide poisoning, ingestion of cyanide

NB: There will be cases of intentional injury where public health action will be necessary, e.g. where access to the hazardous substance is gained because of inadequate control.

- Occupational injury and disease

E.g. Chlorine exposure resulting in respiratory symptoms in a swimming pool attendant, spray painter with neurotoxic symptoms

NB: All notifications referred to WorkSafe

- Where there is little evidence of a link between the substance and illness

E.g. Inconsistent symptoms reported following a spray drift event, some notifications from a GP who practises complementary and alternative medicine.

Again, there may be circumstances where public health action or investigation is appropriate e.g. where public concern is particularly high.

- **Some** unintentional child poisonings

E.g. A child swallowing household cleaning product and preventive advice has already been given by the GP

However, in some cases of unintentional childhood poisoning, e.g. heavy metals, public health investigation is warranted.

When a decision is made that no further investigation is necessary, the reason should be documented and the decision should be endorsed by the Medical Officer of Health or the principal/senior health protection officer.

Cases that are not investigated remain important to include in the HSDIRT system to contribute to overall surveillance. Identification of a national or regional trend from surveillance data may prompt the Ministry of Health or Environmental Protection Authority to undertake an investigation. This may include a national analytical survey of a product e.g. type of cosmetic; household product, where PHUs are involved in sampling or PHUs are requested to investigate cases which may not have previously reached a local threshold for investigation.

5.2 Case notes

The data in the HSDIRT form is intended to record notification and surveillance information. It does not replace case history or investigation notes. These will be kept by PHUs according to their own procedures. A copy of the HSDIRT notification can be printed to include in paper-based case notes by clicking the 'Print' button. Alternatively, electronic case notes can be attached to the notification form using the Attach function as described in section 3.4.

5.3 Entering surveillance data

Complete the PHU review tab when all relevant information has been collected. Enter all available data, including in situations where no investigation has occurred. Where further information is collected and the original GP data are found to be incorrect, update the relevant fields.

The categories for the 'circumstances of the exposure' are based on the life cycle of a hazardous substance and data from this field, alongside 'non-compliance' information will in the future provide unique, useful evidence to inform decision-making around hazardous substances.

Figure 12 PHU review tab

The screenshot displays the 'PHU Review' tab of a software interface, divided into several sections:

- Assessment Section:**
 - Public Health Unit responsible:** A dropdown menu showing 'Demonstration PHU'.
 - PHU action:** Four radio button options: 'No further investigation', 'Investigation underway', 'Referred to another agency eg MBIE', and 'Investigation complete'.
 - Reporting Source:** A dropdown menu showing 'General Practitioner'.
- Case assignment Section:**
 - Radio button options for case status: 'Definite case', 'Probable case', 'Possible case', 'Not a case', and 'Insufficient info to assign case status'.
 - Callout boxes: One points to the 'PHU responsible' dropdown with the text 'See section 5.5 for forwarding to another PHU - select the correct PHU and 'Forward''. Another points to the 'Insufficient info to assign case status' option with the text 'See section 5.4 on assigning case status'.
- Officer Information Section:**
 - Text input fields for 'Investigating Officer's name e.g. Health Protection Officer', 'Clinician's name e.g. Medical Officer of Health', and 'Date of case review'.
- Exposure event Section:**
 - Text input field for 'Specific name of place where exposure occurred eg Centre Port Wellington'.
 - Two columns of address fields: 'Address where exposure occurred' and 'Incident Address'. Each column includes fields for 'Street Address', 'Suburb', 'Town/City', 'Postcode', and 'DHB' (with a 'Please Select' dropdown).
 - Callout box: Points to the 'Incident Address' fields with the text 'Enter data here where the exposure address is different to the address causing the incident e.g. spraydrift from neighbour'.
- Exposure Circumstances Section:**
 - Text: 'What were the circumstances of the exposure? (tick as many as apply). The hazardous substance was being:'
 - Radio button options: 'manufactured', 'transported', 'stored', 'used, for a purpose outside of its usual use', 'used to manufacture another product', 'disposed of', and 'used, for its intended purpose'.
 - Callout box: Points to these options with the text 'Categories based on lifecycle of hazardous substance.'
- Compliance Section:**
 - Text: 'Was exposure a result of non-compliance with one or more HSNO controls'.
 - Radio button options: 'Yes' and 'No'.
- Notes Section:**
 - Text input field for 'Notes'.
- Clinical course Section:**
 - Text: 'Approx time off work, school, normal duties as a result'.
 - Radio button options: 'zero', '1-3', '4-9', '10+ days', and 'Unknown'.
 - Text: 'Was person hospitalised'.
 - Radio button options: 'Yes', 'No', and 'Unknown'.
 - Text: 'Died'.
 - Radio button options: 'Yes', 'No', and 'Unknown'.
 - Text: 'Date' with a calendar icon.

At the bottom of the interface, there is a navigation bar with buttons for 'Attach', 'Print', 'Park', 'Forward', 'Cancel', and 'CPHR'.

5.4 Case assignment

PHUs are asked to assign a case status to each notification. In many cases this will be straightforward. For other notifications, a careful review of the exposure history, health effects described by the affected person and reporting practitioner, and a review of the health evidence for

the hazardous substance will be required. The process for assigning case status is based on that used by the National Institute for Occupational Safety and Health of the US Centers for Disease Control for pesticide exposure cases, and may not be suitable for some hazardous substance notifications. Feedback on the matrix is appreciated and will be incorporated into future revisions of the Guide.

Choose a category from each part and use the matrix to select a case status.

Part 1 Exposure history

A1Lead Confirmed lead level of $\geq 0.48\mu\text{mol/L}$ with or without exposure history

- A1** Exposure history is corroborated by
- Environmental samples, OR
 - Observation of the environment post exposure by a trained professional (e.g. HPO, MOH) confirms exposure e.g. pesticide residue observed, OR
 - Clinical/Laboratory findings verified by a medical professional which meet the B1 criteria and are characteristic of the hazardous substance
- A2** Evidence of exposure is based on report only
- A3** Strong evidence that no exposure occurred
- A4** Insufficient data on exposure available

Part 2 Health effects

- B1** Abnormal signs or laboratory sample reported by medical practitioner (note that symptoms alone are not enough to meet this criterion)
- B2** Abnormal symptoms only
- B3** No new abnormal symptoms, signs or laboratory samples
- B4** Insufficient data on health effects available

Part 3 Evidence supporting causal relationship between exposure and health effects

C1Lead Confirmed lead level of $\geq 0.48\mu\text{mol/L}$

- C1** All of the following apply
- Health effect/s are characteristic of those known for the hazardous substance/chemical from a reputable source (e.g. TOXINZ, CHEMFIND or other database, safety data sheet, toxicology text, government publication etc.)
 - The temporal relationship between the exposure and health effect is plausible
 - The exposure dose was known/is likely to be sufficient to produce the symptoms experienced
- C2** No evidence of relationship between exposure and health effect
Any of the following apply
- Health effect/s are NOT characteristic of those known for the hazardous substance/chemical from a reputable source (e.g. TOXINZ, CHEMFIND or other database, safety data sheet, toxicology text, government publication etc.)
 - The temporal relationship between the exposure and health effect is NOT plausible
 - The exposure dose was NOT known/NOT likely to be sufficient to produce the symptoms experienced
- C3** Definite evidence of non-hazardous substance cause
- C4** Insufficient data are available to establish causal relationship between exposure and health effects (e.g. minimal human data available)

Part 4 Integration/Matrix

	Definite case	Probable case		Possible case	Insufficient information to assign status	Not a case		
A Exposure	A1/A1Lead	A1	A2	A2	A1 or A2 or A4	A3	Any	Any
B Health effects	B1	B2	B1	B2	B1 or B2 or B4	Any	B3	Any
C Causal relationship	C1/C1Lead	C1	C1	C1	C2 or C4	Any	Any	C3

Resources that may be useful for finding evidence on a causal relationship between exposure and health effects to less common hazardous substances are included in Appendix 2. Of note is the Hazardous Substances Data Bank (HSDB) providing comprehensive, peer-reviewed toxicology data for about 5,000 chemicals through the United States National Library of Medicine Toxicology Data Network, TOXNET (<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>).

These resources are also accessible via a tab in the form; click on the blue triangle to access the 'Resources' tab. Some are most suitable for PHUs, others are best for GPs.

Figure 9 Accessing resources through the notification form

The screenshot shows the 'Hazardous Substances Disease & Injury Reporting Tool' interface. The top navigation bar includes 'Exposure Event', 'Assessment', 'Notifier / Patient Details', and 'PHU Review'. The 'PHU Review' tab is active, showing fields for 'Public Health Unit responsible' (set to 'Demonstration PHU'), 'PHU action' (with radio buttons for 'No further investigation', 'Investigation underway', 'Referred to another agency eg MBIE', and 'Investigation complete'), and 'Reporting Source' (set to 'Please Select').

A callout box with the text 'Useful resources can be accessed here.' points to the 'Resources' tab in the navigation bar. Below this, the 'Resources' tab is expanded, showing two columns of links: 'GP Information' (including 'Frequently Asked Questions', 'Users Guide for GPs (short)', 'Users Guide for GPs', 'Useful resources for GPs', and 'Legislation') and 'PHU Information' (including 'Users Guide for PHUs', 'Useful resources for PHUs', and 'HSDIRT Publications').

At the bottom of the form, there are buttons for 'Attach', 'Print', 'Park', 'Forward', 'Cancel', and 'CPRH'.

5.5 Forwarding a case to a different PHU

There may be cases where a GP selects the incorrect PHU to notify the case, therefore, the notification is sent to the incorrect PHU. If this occurs, change the field 'Public Health Unit User's Guide for PHUs Feb 2017

responsible' to the correct PHU and click the 'Forward' button at the bottom of the page. The new PHU will receive an email notification to advise them of the notification. A phone call from the referring PHU explaining the circumstances is also recommended.

5.6 Completion of the form

When complete, consider whether your PHU will require a hard copy version of the notification if paper based files are kept. Use the 'Print' function via the button at the bottom of the screen.

Also consider whether feedback in the form of a letter to the notifying doctor is appropriate, particularly where an investigation has been performed, or where hazardous substance notifications can be encouraged by feedback to clinicians.

Click 'CPHR' to submit the form, it will then become **read only**. The data will be transferred to the CPHR Hazardous Substances Surveillance System, with the identifiable data removed by BPAC.

6. Regular reporting from CPHR

CPHR will provide each PHU with an annual report and their own raw data for the same time period in a Microsoft Excel spreadsheet. Raw data will be supplied to allow PHUs to carry out their own analyses if desired.

A national report is also available annually.

CPHR can perform additional analyses on request, for example, GIS coding of cases. These can be discussed by contacting Fei Xu (email address f.xu@massey.ac.nz, or 0800 588 265) or Helene Marsters (t.h.marsters@massey.ac.nz).

7. Advice from Ministry of Health to investigate

Identification of a national or regional trend from surveillance data may prompt the Ministry of Health to undertake an investigation. This may include a national analytical survey of a product e.g. type of cosmetic; household product, where PHUs are involved in sampling. PHUs may also be requested to investigate cases which may not have previously reached a local threshold for investigation.

8. Privacy and security of patient information sent via BPAC

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

BPAC meets 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 are 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.

9. Feedback and queries

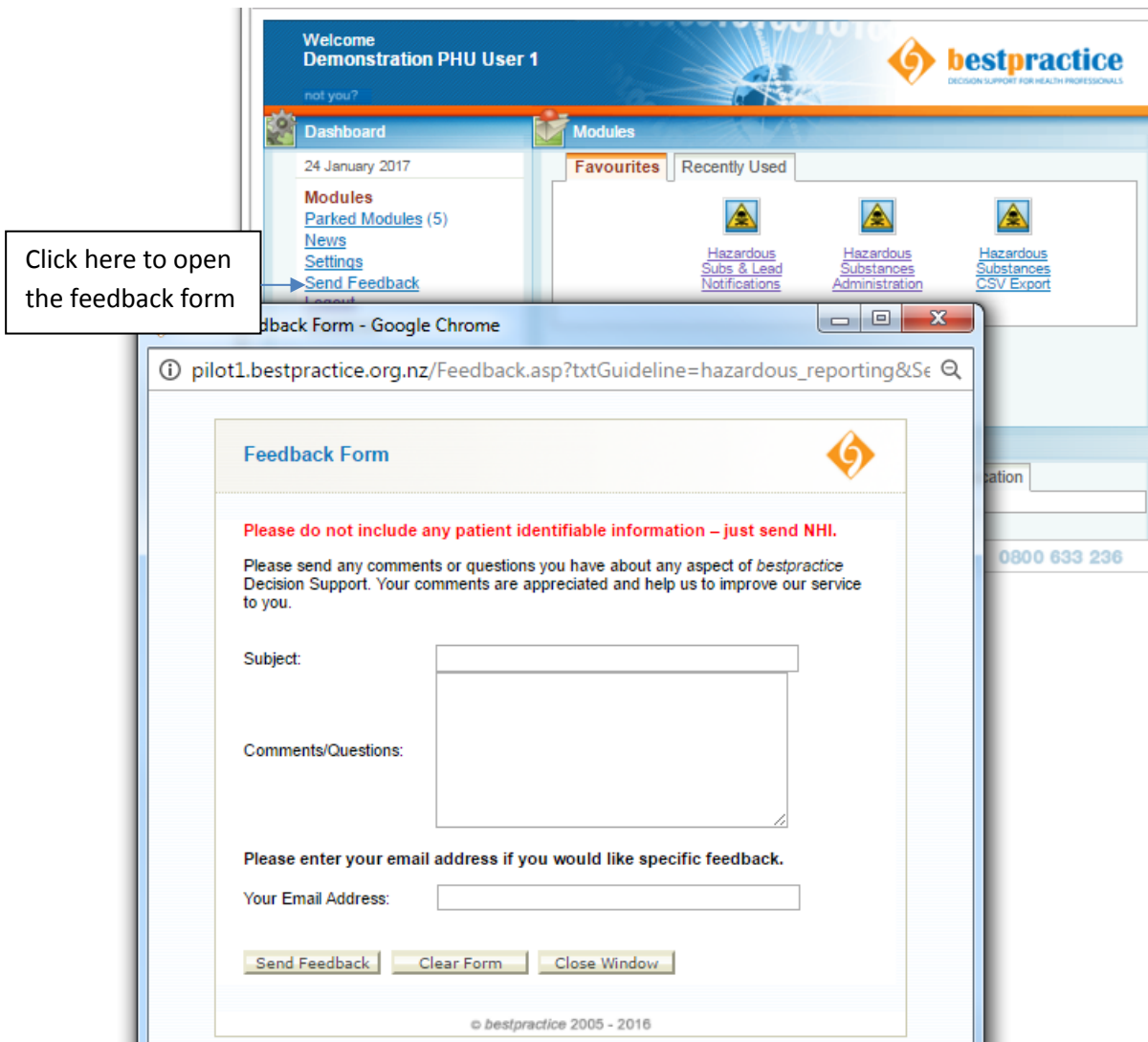
Questions and feedback about the HSDIRT are appreciated and will contribute to the ongoing improvement of the system. Questions regarding the HSDIRT can be sent to

Fei Xu
Analyst
Centre for Public Health Research
Massey University
E: f.xu@massey.ac.nz
T: 0800 588 265
(weekdays)

Helene Marsters
Senior Analyst
Centre for Public Health Research
Massey University
E: t.h.marsters@massey.ac.nz
T: 04 979 3382
(weekdays)

If you have feedback or questions regarding the BPAC system this can be entered using the 'Send Feedback' link in the BPAC dashboard, or by calling call 0800 633 236.

Figure 13: Feedback to BPAC



Appendix 1 Legislation

Definition of hazardous substance in Hazardous Substances and New Organisms Act 1996, Part 1 section 2

hazardous substance means, unless expressly provided otherwise by regulations, any substance—

- (a) with 1 or more of the following intrinsic properties:
 - (i) explosiveness:
 - (ii) flammability:
 - (iii) a capacity to oxidise:
 - (iv) corrosiveness:
 - (v) toxicity (including chronic toxicity):
 - (vi) ecotoxicity, with or without bioaccumulation; or
- (b) which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any 1 or more of the properties specified in paragraph (a)

Requirement to notify Medical Officer of Health, in Hazardous Substances and New Organisms Act 1996 section 143 2(A)

143 Notification of hazardous substances injuries

- (1) In this section,—

hospital means a hospital care institution within the meaning of section 58(4) of the Health and Disability Services (Safety) Act 2001

medical practitioner means a health practitioner who is, or is deemed to be, registered with the Medical Council of New Zealand continued by section 114(1)(a) of the Health Practitioners Competence Assurance Act 2003 as a practitioner of the profession of medicine.

(2) If any person, upon admission to a hospital, is found to be suffering from any injury caused by a hazardous substance, the person for the time being in charge of the hospital shall give notice of the injury to the Medical Officer of Health.

(2A) If a medical practitioner finds that a person who is not admitted to a hospital is suffering from an injury caused by a hazardous substance, the medical practitioner must give notice of the injury to the Medical Officer of Health.

Source: New Zealand Legislation website, Parliamentary Counsel Office available at <http://www.legislation.govt.nz/act/public/1996/0030/latest/DLM385138.html>. Cited 9 January 2013.

Health Act 1956 Schedule 2 Diseases notifiable to Medical Officer of Health (other than notifiable infectious diseases)

Schedule 2

Diseases notifiable to medical officer of health (other than notifiable infectious diseases)

Section B—Other conditions

Cysticercosis
Decompression sickness
Lead absorption equal to or in excess of 0.48 µmol/ℓ
Poisoning arising from chemical contamination of environment
Taeniasis
Trichinosis

Source: New Zealand Legislation website, Parliamentary Counsel Office available at <http://www.legislation.govt.nz/act/public/1956/0065/latest/DLM308746.html>. Cited 9 January 2013.

Requirement of Medical Officer of Health to notify regulator of work-related notifiable disease or hazardous substances injury in Health and Safety at Work Act 2015, section 199

199 Requirement of medical officer of health to notify regulator of work-related notifiable disease or hazardous substances injury

- (1) This section applies if a medical officer of health receives—
 - (a) a notification under section 74 of the Health Act 1956 of a notifiable disease that he or she reasonably believes arises from work:
 - (b) a notification under section 143 of the Hazardous Substances and New Organisms Act 1996 of an injury caused by a hazardous substance that he or she reasonably believes arises from work.
- (2) The medical officer of health must, as soon as practicable after receiving the notification,—
 - (a) advise the regulator of the notification; and
 - (b) provide the regulator with the following information:
 - (i) the name of the person who suffers or suffered from the notifiable disease or injury caused by the hazardous substance; and
 - (ii) the nature of the disease or injury.
- (3) Except as required by subsection (2)(b), the medical officer of health must comply with the Privacy Act 1993 and any relevant code of practice issued under that Act.

Source: New Zealand Legislation website, Parliamentary Counsel Office available at <http://www.legislation.govt.nz/act/public/2015/0070/latest/DLM5977194.html>. Cited 8 February 2017.

Appendix 2 Useful Resources for PHUs

CHEMFIND

The CHEMFIND database system is owned by Responsible Care NZ (formerly the NZ Chemical Industry Council). It is a website system that contains chemical data, mainly data sheets, which is regularly updated giving users 24 hour access to up-to-date chemical information on hazards identification, composition on ingredients, first aid measures, chemical spills, etc. CHEMFIND is a valuable resource for public health units responding to chemical incidents and emergencies.

The Ministry of Health has purchased CHEMFIND licences for each public health unit's office. Responsible Care NZ will also provide technical assistance 24- hours, seven days a week by phoning 0800 CHEMCALL [243 622] if required.

TOXINZ database

TOXINZ is an internet accessible poisons information database containing recommendations on the management of poisoning from over 190,000 listed chemical products, pharmaceuticals, plants and hazardous creatures. This resource is reviewed and added to accommodate more information. The information is referenced and updated regularly. An annual subscription is required to access the database; some PHUs have current subscriptions.

<http://www.toxinz.com>

National Poisons Centre: 0800 POISON (0800 764 766)

The National Poisons Centre (NPC) has a free 24-hour service providing information on the health effects of chemicals, drugs, poisonous plants, poisonous insects and marine animals. The telephone number is 0800 POISON (0800 764 766) (24 hours). TOXINZ is the NPC's internet database.

The main role of the NPC is to provide advice to members of the public and health care professionals about acute poisoning situations. This can involve medicines, chemicals, hazardous creatures (e.g. spiders, snakes, jellyfish), or plants and fungi.

The permanent information specialist staff have expertise in toxicology, medical toxicology, chemistry and pharmacy. The NPC maintains TOXINZ, in addition to a comprehensive toxicology library and has access to a range of other databases and information sources, both nationally and internationally.

<http://www.poisons.co.nz/>

Environmental Protection Authority resources

Chemical Classification and Information Database

The Chemical Classification and Information Database (CCID) details the chemicals classified in accordance with the Hazardous Substance and New Organisms (HSNO) regulations.

The CCID provides chemical identification information, hazard classifications and classification data.

<http://www.epa.govt.nz/search-databases/Pages/HSNO-CCID.aspx>

Database of controls for approved hazardous substances

This database details the controls on approved hazardous substances. Controls for each approval can be accessed using the approval number or substance name. Changes made by reassessment or amendment processes are also included.

<http://www.epa.govt.nz/search-databases/Pages/controls-search.aspx>

International sources – Free access

TOXNET

Online search of multiple databases on toxicology, hazardous chemicals, environmental health, and toxic releases provided by the United States National Library of Medicine.

<https://toxnet.nlm.nih.gov/>

International Program on Chemical Safety

This site provides free access to internationally peer reviewed information on chemicals commonly used throughout the world, which may also occur as contaminants in the environment and food. It consolidates information from a number of intergovernmental organisations whose goal is to assist in the sound management of chemicals. It is indexed by chemical name, some synonyms and CAS numbers. International Chemical Safety Cards, Environmental Health Criteria (EHC) Monographs, UK Poisons Information and other content is available.

<http://www.inchem.org/>

NIOSH Pocket Guide to Chemical Hazards

The Center for Disease Control's National Institute for Occupational Safety and Hygiene (NIOSH) Pocket Guide to Chemical Hazards is intended as a source of general industrial hygiene information on several hundred chemicals/classes for workers, employers, and occupational health professionals. The pocket guide does not contain an analysis of all pertinent data, rather it presents key information and data in abbreviated or tabular form for chemicals or substance groupings (e.g. cyanides, fluorides, manganese compounds) that are found in the work environment. The information found in the Pocket Guide should help users recognise and control occupational chemical hazards. It is searchable by chemical name, some synonyms and trade names, and CAS numbers.

<http://www.cdc.gov/niosh/npg/>

ATSDR Toxicological profiles

Information about contaminants found at hazardous waste sites, from the Agency for Toxic Substances and Disease Registry

<http://www.atsdr.cdc.gov/toxprofiles/index.asp>

International sources – require subscription

Chemwatch Product names: (M)SDS Repository, ChemGoldIII, ChemWatcher

Searchable database of industry provided material safety data sheets, and some information provided by independent experts. Chemwatch maintains regulatory information regarding the HSNO Act. This database is best searched using the chemical name of the substance involved. Some PHUs are current subscribers of this database.

<http://www.chemwatch.net/>

TOMES

The TOMES® System provides medical and hazard data for response to exposure and accidents in chemical handling. The TOMES System provides treatment guidelines for acute chemical exposures, evacuation procedures, and chemical disposal information.

http://thomsonreuters.com/products_services/healthcare/healthcare_products/a-z/tomes_system/

Commonwealth Agricultural Bureaux Abstracts (CAB Abstracts)

A comprehensive database of applied life sciences resources; it includes agriculture, environment, veterinary sciences, applied economics, food science and nutrition.

<http://www.cabi.org/>

Chemical Abstracts Search (CAS-ONLINE)

Access to databases covering science, engineering, technology, patents and business information. CAS products are fee-based and generally require you to set up an account.

<http://www.cas.org/index>

Ministry of Health Guidelines

Hazardous Substance Injuries

Investigation and Surveillance of Poisoning and Hazardous-substance Injuries (2015)

<http://www.health.govt.nz/publication/investigation-and-surveillance-poisonings-and-hazardous-substances-injuries>

Lead

The Environmental Case Management of Lead-exposed Persons: Guidelines for Public Health Units (2012)

<http://www.health.govt.nz/publication/environmental-case-management-lead-exposed-persons>

Agrichemical Spraydrift

The Investigation and Surveillance of Agrichemical Spraydrift Incidents: Guidelines for Public Health Units (2007)

<http://www.health.govt.nz/publication/investigation-and-surveillance-agrichemical-spraydrift-incidents>

Asbestos

The Management of Asbestos in the Non-occupational Environment: Guidelines for Public Health Units (2016)

<http://www.health.govt.nz/publication/management-asbestos-non-occupational-environment>

Response to Major Fires

Guidelines for Public Health Units: Response to Major Fires (2011)

<http://www.health.govt.nz/publication/response-major-fires-guideline-public-health-units>

Methamphetamine residues

Guidelines for the Remediation of Clandestine Methamphetamine Laboratory Sites (2010)

(includes a section on health effects)

<http://www.health.govt.nz/publication/guidelines-remediation-clandestine-methamphetamine-laboratory-sites>

Review of Remediation Standards for Clandestine Methamphetamine Laboratories: Risk Assessment recommendations for a New Zealand Standard (2016)

<https://www.health.govt.nz/publication/review-remediation-standards-clandestine-methamphetamine-laboratories-risk-assessment>

Dioxins

Dioxins: A Technical Guide (2016)

<https://www.health.govt.nz/publication/dioxins-technical-guide>

Polychlorinated Biphenyls (PCBs)

Safe Management of PCBs Code of Practice (2008)

<http://www.health.govt.nz/publication/safe-management-pcbs-code-practice>

Patient information and resources

From Ministry of Health

Arsenic

<http://www.health.govt.nz/yourhealth-topics/environmental-health/arsenic-and-health>

Poisons around the home

<http://www.health.govt.nz/your-health/healthy-living/environmental-health/household-items-and-electronics/poisons-around-home>

Lead (2016)

<http://www.health.govt.nz/your-health/conditions-and-treatments/diseases-and-illnesses/lead-poisoning>

Child Resistant Packaging (2016)

<http://www.health.govt.nz/your-health/healthy-living/environmental-health/household-items-and-electronics/child-resistant-packaging>

Cleaning up mercury spills in your house (Ministry of Health website, no pdf)

<http://www.health.govt.nz/our-work/environmental-health/cleaning-mercury-spills-your-house>

From Health Ed

Asbestos (2007)

<https://www.healthed.govt.nz/resource/all-about-asbestos>

Agrichemical Spraydrift (1999 revised 2004)

<https://www.healthed.govt.nz/resource/agrichemical-spraydrift>

Safer and healthier gardening (including reducing the risks from chemicals)

<https://www.healthed.govt.nz/resource/safer-and-healthier-gardening>

From National Poisons Centre website

The information sheets most relevant to hazardous substances notifications are included here. Others including poisonous plants and mushrooms and child resistant packaging are available on the NPC website (<http://www.poisons.co.nz/fact.php?c=20>).

Alcohol-based Hand Sanitisers - <http://www.poisons.co.nz/fact.php?f=42&c=20>

BZP and other Piperazine-Based Party Drugs - <http://www.poisons.co.nz/fact.php?f=21&c=20>

Carbon Monoxide Poisoning - <http://www.poisons.co.nz/fact.php?f=40&c=20>

Dishwasher Powders - A Corrosive Poison We Use Every Day - <http://www.poisons.co.nz/fact.php?f=26&c=20>

Household Cleaners - A Poison Common in Every Home - <http://www.poisons.co.nz/fact.php?f=25&c=20>

Solvent abuse: sniffing, huffing, bagging. Info for parents/caregivers - <http://www.poisons.co.nz/fact.php?f=9>

Potentially Dangerous Alternative Headlice Treatments - <http://www.poisons.co.nz/fact.php?f=5&c=20>

From Auckland Regional Public Health Service (ARPHS)

Lead – for operators of shooting ranges

http://www.arphs.govt.nz/Portals/0/Health%20Information/HealthyEnvironments/HasardousSubstances/Lead%20for%20shooters/Health%20advice%20and%20recommendations-Operators_Version%2008%2011%2011.pdf

Lead – for indoor shooters

<http://www.arphs.govt.nz/Portals/0/Health%20Information/HealthyEnvironments/HasardousSubstances/Lead%20for%20shooters/Lead%20Advice%20for%20Shooters%20Information%20Sheet.pdf>