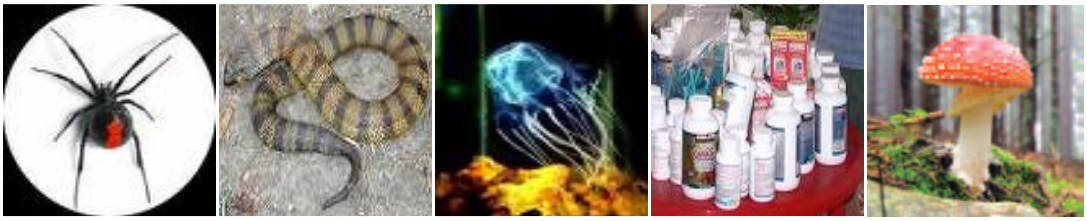
Austin Health

VICTORIAN POISONS INFORMATION CENTRE



ANNUAL REPORT 2013

Victorian Poisons Information Centre

13 11 26

Emergency Department
Austin Hospital
Heidelberg 3084

www.austin.org.au/poisons

Victorian Poisons Information Centre Annual Report 2013

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Introduction

The Victorian Poisons Information Centre (VPIC) commenced operation in 1962. It was located at the Royal Children's Hospital, Melbourne from 1976 to 2008. In August 2008, the centre relocated to the Austin Hospital, to integrate with the Austin Hospital Clinical Toxicology Service (AHCTS). VPIC is located in the Austin Hospital Emergency Department, and is directed administratively as part of the Austin Hospital Pharmacy Department.

VPIC provides members of the Victorian public with:

- risk assessment, first aid, and management advice in the event of poisoning or suspected poisoning involving: accidental/unintentional exposures that include therapeutic errors and occupational exposures; deliberate self poisonings; envenomations; toxic hazard situations
- the need for medical assessment
- prevention of poisoning
- referral to other information sources if appropriate
- selected drug information.

VPIC provides health professionals with:

- a risk assessment in the event of poisoning or suspected poisoning involving: accidental/unintentional exposures that include therapeutic errors and occupational exposures; deliberate self poisonings; envenomations; toxic hazard situations
- information about the potential toxic effects from an exposure
- initial and ongoing management advice
- information on formulation of products
- referral to other information resources if appropriate
- referral to a member of the supporting AHCTS team (registrar, fellow or consultant) for complicated and/or severe cases, following agreed escalation protocols
- information and data about trends in poisonings.

VPIC aims to prevent unnecessary visits to general practitioners and hospitals, and to ensure patients who are poisoned or envenomed receive the most appropriate treatment promptly.

The VPIC telephone number is **13 11 26**. This number can be used Australia-wide for the cost of a local call (excluding mobile phones).

Hours of Operation

VPIC operates Monday to Friday (0800 to 2130 hours), and Saturday and Sunday (0800 to 2100 hours), ie 93.5 hours per week. Outside these times, calls are diverted to the New South Wales (NSW) Poisons Information Centre. Overnight shifts (12 midnight to 0600 hours) are shared between the four Australian PICs (NSW, Queensland, Western Australia and Victoria). Only one PIC operates overnight, taking all the calls from across Australia while the other three PICs are closed. In February 2013, VPIC increased its overnight shift commitment from one shift per week to five shifts per month.

Staffing

Director of Pharmacy and the VPIC

Kent Garrett B. Pharm., Grad. Dip. Hosp. Pharm.

Manager, VPIC
Jeff Robinson B. Pharm., FSHP, Grad. Dip. Hosp. Pharm.

Medical Director of VPIC
Dr Shaun Greene MB ChB, MSc (Medical Toxicology), FACEM

Specialists in Poisons Information
Janet Browning B. Pharm., Dip. Hosp. Pharm.
Mark Colbridge B. Sc (Hons)
Dr Dawson MacLeod B. Pharm., Grad. Dip. Biotech., Grad. Cert. Clin. Tox., PhD
Hamish McCracken B. Pharm., Grad. Dip. Psych.
Christine McKenzie B. Pharm., Grad. Cert. E-Health Comm., Grad. Cert. Clin. Tox.
Jeff Robinson B. Pharm., FSHP, Grad. Dip. Hosp. Pharm.

Toxicology Fellows in Training
Dr. Dino Druda B. Med. Sc (Hons), MB BS, MRCP (UK), FACEM (until May 2013)
Dr Anselm Wong MB BS, FACEM (from May 2013)

On-Call Clinical Toxicologists
The following clinical toxicologists shared the VPIC on-call responsibilities during 2013:
Professor George Braitberg MB BS, FACEM, FACMT, Dip Epi Biostats
Professor Andis Graudins MB BS, PhD, FACEM, FACMT
Dr Shaun Greene MB ChB, MSc (Medical Toxicology), FACEM
Dr Fergus Kerr MB BS, FACEM
Dr. Zeff Koutsogiannis MB BS, FACEM, Grad. Cert. Clin. Tox.

AHCTS is comprised of a toxicology registrar (six month rotation) and three toxicology consultants (Dr. Fergus Kerr, Dr. Shaun Greene and Dr. Zeff Koutsogiannis). A new clinical toxicology fellow, Dr. Anselm Wong, joined AHCTS in May 2013, replacing Dr. Dino Druda. The toxicology fellow is a two year appointment. Two clinical toxicologists from Southern Health, Professor George Braitberg and Professor Andis Graudins, who joined the VPIC on-call consultant roster in May 2011, continued their roster participation during 2013. AHCTS and VPIC on-call consultants provide a specialised management and advice service for toxicology/toxinology admissions at Austin Health and other Victorian hospitals.

VPIC staff enjoy a close day-to-day working relationship with the AHCTS team. In complicated and/or severe poisoning cases, they have ready access to the toxicology registrar, toxicology fellow or the VPIC on-call consultant. In addition, a range of external consultants (clinical pharmacologists, mycologists and botanists) are available to VPIC staff to provide specialist advice in these areas if needed.

Clinical Governance Activities

Clinical governance has been defined as the framework through which health care organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish.

The following clinical governance activities were undertaken during 2013:

- Internal review of all VPIC calls by a second VPIC staff member.

- Review of all potentially 'critical incident' calls by the Toxicology Registrar, ie all calls received from hospitals, general practitioners and ambulances. This call review forms part of the Registrar's training.
- Reports of all calls referred to the registrar, fellow or on-call toxicologist were emailed to all VPIC and AHCTS staff, with follow-up reports if appropriate.
- Ongoing involvement in VPIC/AHCTS educational activities, eg two half-day Toxicology Forums; Austin Hospital Grand Rounds; case discussions, teaching sessions and Toxicology Journal Club held every Wednesday.
- Ongoing review of VPIC/AHCTS policies, procedures, protocols, clinical guidelines and position statements.
- VPIC and AHCTS staff attended the national PIC/Toxicology Clinical Meetings held in Newcastle and Melbourne.
- Austin Health Performance Review and Development (PRD) for all VPIC staff.

Poisoning Prevention Activities

The following poisoning prevention activities were undertaken during 2013:

- Printed material (pamphlets, telephone stickers, posters, information sheets) was supplied to child care centres, kindergartens, local councils, Maternal and Child Health Centres, GP surgeries etc throughout the year.
- The bites and stings information on the VPIC website www.austin.org.au/poisons was updated. The website contains poisoning prevention advice, first aid advice and information sheets for members of the public.

Toxicovigilance Activities

Toxicovigilance is the active process of identifying and evaluating toxic risks, and evaluating the measures taken to reduce or eliminate them. It involves the analysis of PIC data to identify if there are specific circumstances or agents giving rise to poisoning, or certain populations or locations suffering a higher incidence of poisoning or the need for public education and restrictions on the availability of certain products. Toxicovigilance may lead to PIC safety alerts in cases of sentinel events. Toxicovigilance can also reveal whether there is an emerging toxicological problem resulting from, for example, the reformulation of a product or a change to its packaging or labelling or the availability of a new drug of abuse.

To support toxicovigilance activities, VPIC has developed collaborative links with: the other Australian PICs; public health agencies such as the Victorian Department of Health Environmental Health Unit; regulatory authorities such as the Therapeutics Goods Administration (TGA); medication safety bodies; child safety groups, eg Kidsafe, Royal Children's Hospital Safety Centre.

The following toxicovigilance activities were undertaken during 2013:

- VPIC call data pertaining to infant colic mixtures prepared by compounding pharmacies was provided to the Pharmacy Board of Australia.
- VPIC call data pertaining to newer street drugs (cathinones, synthetic cannabinoids etc) was provided to the Australian Drug Foundation.
- VPIC call data pertaining to Lye water exposures was provided to South Australia's Public Health division.
- VPIC call data pertaining to accidental carbon monoxide exposures from burning charcoal products was provided to the Australian Competition and Consumer Commission (ACCC).

- VPIC call data pertaining to five prescription opioids and stimulants was provided to the Rocky Mountain Poison and Drug Centre as part of an ongoing international study investigating trends in prescription medicine exposures.
- VPIC call data pertaining to paediatric laundry detergent pod exposures was provided as part of an ongoing national PIC study.
- VPIC therapeutic error call data was provided to Carol Wylie, Manager of the Queensland PIC, for inclusion in her presentation at the Society of Hospital Pharmacists of Australia Federal Conference.
- In November, VPIC and AHCTS assisted Victoria's Chief Health Officer issue a synthetic cannabinoid Safety Alert following a cluster of Melbourne cases that required ICU admission after using the product 'Marley'.

Research Activities, Publications and International Conference Presentations

The following research activities, publications and international conference presentations were undertaken during 2013:

- VPIC call data pertaining to mushroom exposures was provided to the Australia-wide study 'Poisoning due to fungi ingestion – a retrospective study of cases reported to Australian Poisons Information Centres'. Dawson MacLeod is a member of the writing group.
- Wong A, Koutsogiannis Z, Greene S, McIntyre S. A case of hemolysis and methemoglobinemia following amyl nitrite use in an individual with G6PD deficiency. J Acute Med 2013; 3:23-5.
- Rotella JA, Zarel F, Frauman AG, Greene SL. Refractory hypotension treated with vasopressin after intentional clozapine overdose. Eur J Emerg Med Published Online First: August 2013 DOI: 10.1097/MEJ.0000000000000078.
- Stephenson M, Wong A, Rotella JA, Crump N, Kerr F, Greene SL. Deliberate fingolimod overdose presenting with delayed hypotension and bradycardia responsive to atropine. J Med Toxicol Published Online First: 01 November 2013 DOI 10.1007/s13181-013-0354-3
- Rotella JA, Wong A, Greene S. @Toxicology in the Twittersphere: More than just 140 characters… Emerg Med Australas Published Online First: November 2013 DOI 10.1111/1742-6723.12146.
- Isbister GK, Brown SGA, Page CB, McCoubrie DL, Greene SL, Buckley NA. Snakebite in Australia: a practical approach to diagnosis and treatment. MJA 2013; 199(11):763-8.
- Shaun Greene was a member of the Emergency Care Improvement and Innovation Clinical Network (ECIIN) writing group that prepared the Clinical Management Guidelines for the Management of Snakebites in Emergency Departments in Victoria.
- Shaun Greene, Zeff Koutsogiannis and Dino Druda wrote chapters on poisoning for: Cameron et al. Textbook of Adult Emergency Medicine. 4th ed.
- Shaun Greene wrote several chapters for: Dargan P, Wood DM. Novel Psychoactive Substances. 1st ed.
- At the EAPCCT Conference in Copenhagen in May, Andis Graudins was involved in presentations about: lipid emulsion therapy in verapamil poisoning in a rat model; the use of methylene blue for refractory vasoplegic shock in a case of severe quetiapine poisoning.
- At the APAMT Conference in Dubai in November, Shaun Greene spoke about 'Overview of Opioid Misuse Trends in the Asia-Pacific Region.'
- At the APAMT Conference in Dubai in November, Andis Graudins spoke about 'Co-Infusion of Fructose-1, 6-Diphosphate Improves Survival in Propranolol Poisoning Compared with Adrenaline Infusion Alone in a Rodent Model of Poisoning.'

- At the ACEM conference in Adelaide in November, Shaun Greene spoke about 'Novel Psychoactive Substances'.

Conference and Meeting Attendances

The following conferences and meetings were attended during 2013:

- VPIC and AHCTS staff attended the half-day Toxicology Forums held at the Austin Hospital in March and September.
- VPIC and AHCTS staff attended both national PIC/Toxicology Clinical Meetings, held in Newcastle (TAPNA) and Melbourne.
- Jeff Robinson and Shaun Greene attended the national PIC/Toxicology Business Meeting held in November (Melbourne).
- In May, Shaun Greene and Andis Graudins attended the EAPCCT Conference in Copenhagen.
- In November, Shaun Greene and Andis Graudins attended the APAMT Conference in Dubai.
- Jeff Robinson participated in the quarterly teleconferences involving all the PICs and Health Direct, discussing service interaction issues such as appropriate call referrals and appropriate call routing.
- Jeff Robinson and Shaun Greene participated in the National Poisons Information Network (NPIN) Working Party monthly teleconferences.
- As part of the Global Educational Toxicology Uniting Project (GETUP), VPIC/AHCTS staff participated in monthly videoconferencing with the PICs in Fiji, California and South Africa.

Other Activities

The following additional activities were undertaken during 2013:

- VPIC/AHCTS educational activities continued to be held every Wednesday, eg teaching sessions, ward round, Toxicology Journal Club.
- Review of VPIC/AHCTS clinical guidelines, policies, procedures, protocols and position statements was ongoing. Abridged versions of clinical guidelines were placed on the Austin Health intranet (Hub) and full versions in the ToxLibrary.
- In January, VPIC (along with the other PICs) started documenting local toxicology referrals into the national toxicologist referral spreadsheet.
- In January, VPIC and AHCTS assisted in the review of the Victoria Police 'Investigator's Guide to Pharmaceutical Drugs'.
- In February, Jeff Robinson was interviewed by a journalist from The Australian newspaper for an article about first aid and general management advice for snake bites.
- In February, Jeff Robinson reviewed the 'Fungi Poisoning' monograph produced by the Better Health Channel, Victorian Department of Health
- In February, Jeff Robinson was interviewed by a Herald Sun consumer reporter about the ACCC's consumer alert about laundry detergent pods, and their efforts to improve the packaging and labelling of these products.
- In March at the Austin Hospital, VPIC/AHCTS hosted the Victorian launch of the CSL publication 'A Clinician's Guide to Australian Venomous Bites and Stings'.
- In April, Jeff Robinson was interviewed by Radio 3AW about the so-called 'Cinnamon Challenge' circulating on YouTube.
- In April, Shaun Greene gave a television interview about carbon monoxide poisoning.
- In May, Jeff Robinson reviewed the 'Child Poisoning in The Home: Symptoms and Treatment' monograph produced by the Better Health Channel, Victorian Department of Health.

- In May, Jeff Robinson reviewed the poisoning prevention section of 'Child Safety - Reducing Injuries' monograph produced by the Better Health Channel, Victorian Department of Health.
- In May and August, Jeff Robinson was interviewed by journalists from The Age newspaper, Radio 774, Radio ABC Gold Coast and ABC Consumer Affairs about excessive intake of caffeinated drinks and issues around alcohol/caffeine co-ingestion.
- In July, Jeff Robinson produced the first draft of the revised Practice Standards for Australian Poisons Information Centres. These are expected to be finalised and accepted by the NPIN Working Party in early 2014.
- In July, Jeff Robinson joined the NSW PIC Interim Advisory Group.
- In July, Jeff Robinson was interviewed by an ABC television journalist about the toxicity of rhubarb leaves.
- In August, Jeff Robinson was part of a multiagency group (Department of Health, Metropolitan Fire Brigade, Country Fire Authority, Ambulance Victoria) that met to refine procedures for the management of patients contaminated with hazardous materials.
- In November, Jeff Robinson revised the Royal Talbot Rehabilitation Centre's Bites and Stings management guidelines.
- In December, Christine McKenzie and Janet Browning undertook the annual review of the Victorian Therapeutics Advisory Group's Register of Emergency and Life Savings Drugs. This included refinement of the list of infrequently-used, non-time-critical antidotes to be kept at the Austin Hospital.
- In December, Jeff Robinson and Shaun Greene assisted in an external review of the Queensland PIC.
- In December at the Austin Hospital, the Victorian Minister for Health launched the new Clinical Management Guidelines for the Management of Snakebites in Emergency Departments in Victoria.
- In December, Shaun Greene was interviewed by several radio and television stations about the Clinical Management Guidelines for the Management of Snakebites in Emergency Departments in Victoria.
- Shaun Greene and Zeff Koutsogiannis were members of the Victorian Community Naloxone Provision Reference Group convened by Anex. The Group was to consider and provide advice on how a community overdose prevention and education program targeting potential overdose witnesses and utilising prescribed naloxone may be successfully commenced and expanded throughout Victoria.
- VPIC operations were demonstrated to Austin Hospital pharmacy interns and visiting staff from other Australian Poisons Information Centres.

Key Performance Indicators

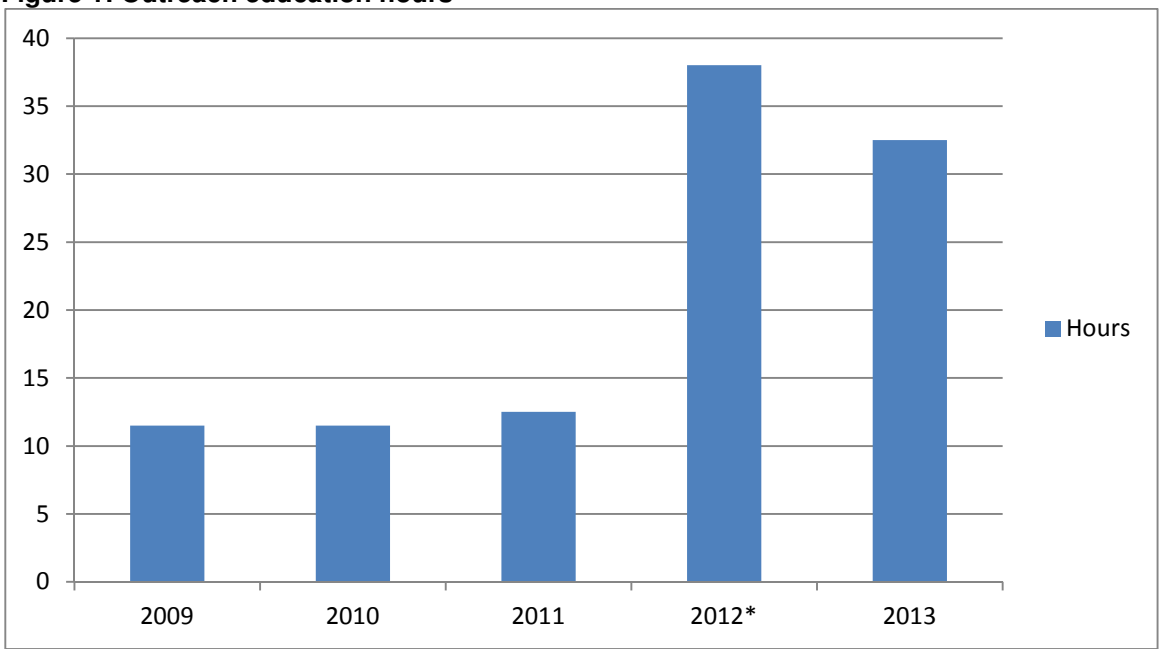
Outreach Education

A total of 32.5 outreach education hours were delivered during 2013, see Figure 1 below. This was a slight decrease compared to 2012. Highlights included:

- Half-day Toxicology Forums held at the Austin Hospital in March and September.
- Presentations at both national PIC/Toxicology Clinical Meetings, held in Newcastle in May (TAPNA) and Melbourne in November.
- Grand Round presentations at the Austin Hospital.
- Presentations to Emergency Department registrars and FACEM Trainees at the Austin, Maroondah and St. Vincent's Public Hospitals.

- Presentations to rural general practitioners, trainee paramedics, environmental health specialists from the Victorian Department of Health, local government environmental health officers and emergency nurse practitioners.

Figure 1: Outreach education hours



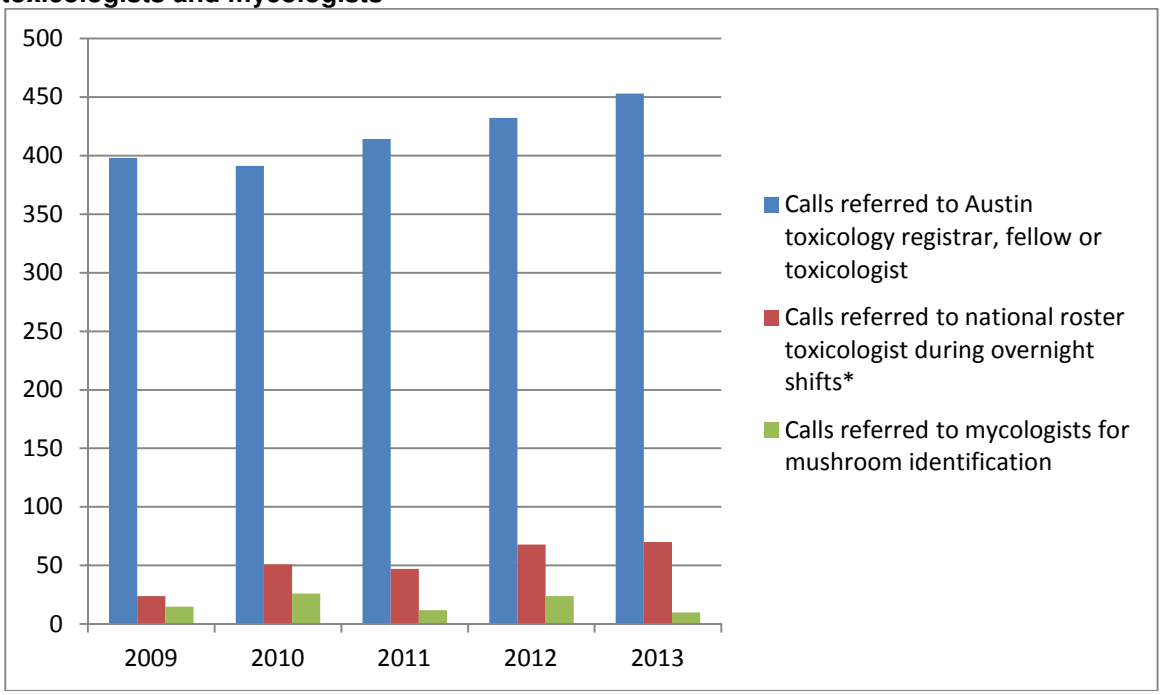
* From 2012, ongoing additional Victorian Department of Health funding to support Outreach Education saw a significant increase over previous years.

Calls referred to the Austin toxicology registrar, fellow, toxicologists, national roster toxicologists and mycologists

VPIC staff follow escalation protocols to refer complicated and/or severe poisoning cases to the toxicology registrar, fellow or on-call toxicologist for management advice. On-call staff must be readily contactable and must respond promptly, within 10 to 15 minutes, to the health professional who contacted VPIC. When working an overnight shift, such calls are referred to the national roster clinical toxicologist. During 2013, 453 calls were referred to the Austin Hospital toxicology registrar, fellow or on-call toxicologist, and 70 overnight shift calls were referred to the national roster clinical toxicologist, see Figure 2.

VPIC and the senior mycologists at the Royal Botanic Gardens, Melbourne. have an ongoing service agreement whereby calls to VPIC that involve ingestion of a potentially toxic mushroom are referred to the on-call mycologist for identification of the mushroom/s involved (10 such cases in 2013). This may involve emailed photos or couriering specimens to the mycologists.

Figure 2. Calls referred to Austin toxicology registrar, fellow, toxicologists, national roster toxicologists and mycologists

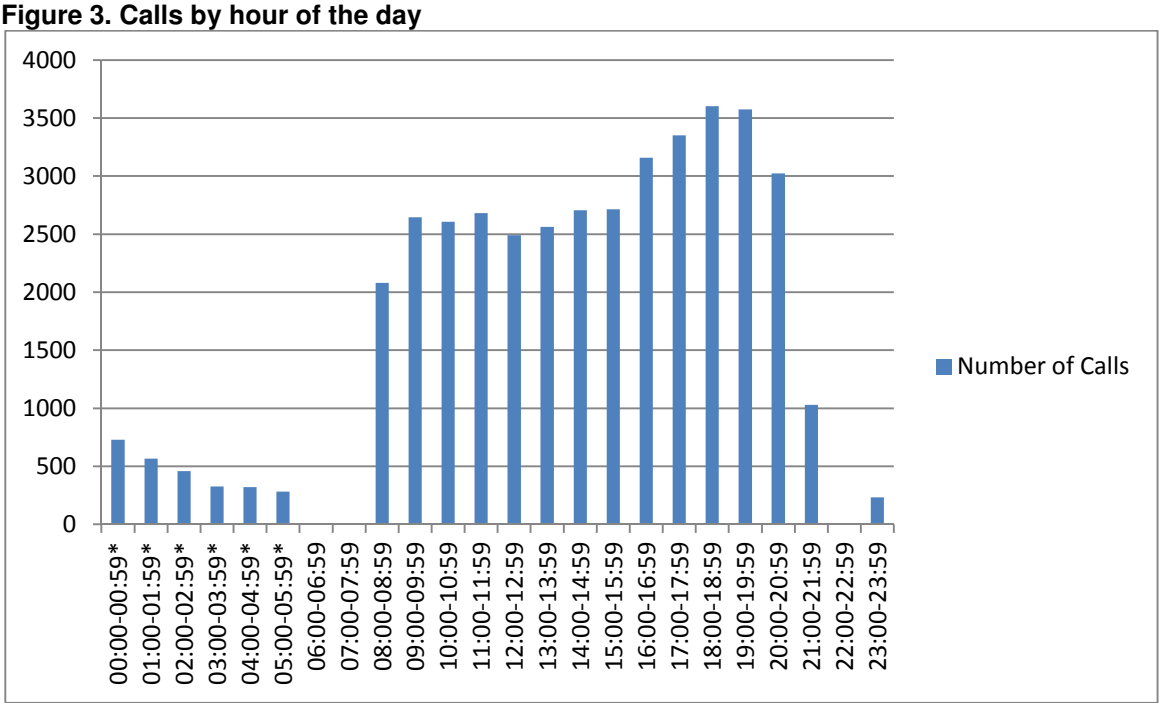


* VPIC worked 25 overnight shifts in 2009. This increased to 52 shifts in 2010, 54 shifts in 2011, 56 shifts in 2012 and 66 shifts in 2013.

Calls by hour of the day

Most calls are received between 1600 and 2100 hours, with the period between 1800 and 2000 hours being the busiest, see Figure 3 below.

Figure 3. Calls by hour of the day

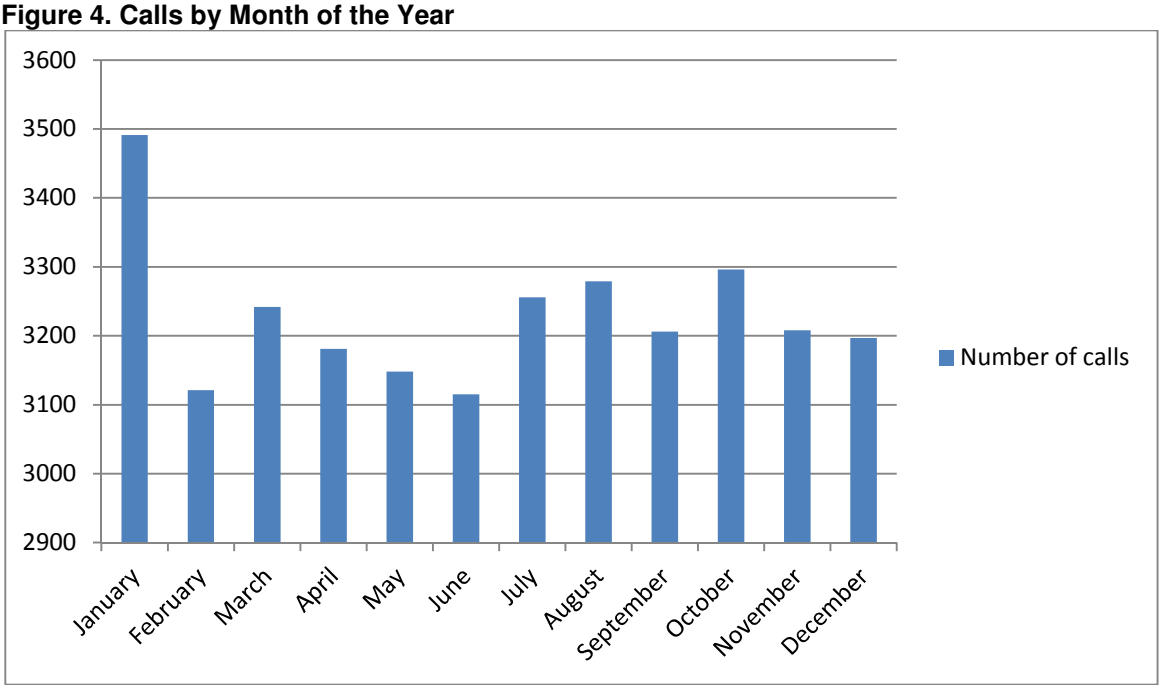


* As VPIC works just five national overnight shift per month, the overnight call numbers (12 midnight to 0600 hours) are much lower than daytime numbers.

Calls by month of the year

VPIC call numbers always taper off over the winter months, see Figure 4 below. This is most likely due to more limited outdoor work and play during these months. Calls numbers relating to outdoor activities, eg bites, stings and envenomations, increase during the warmer months.

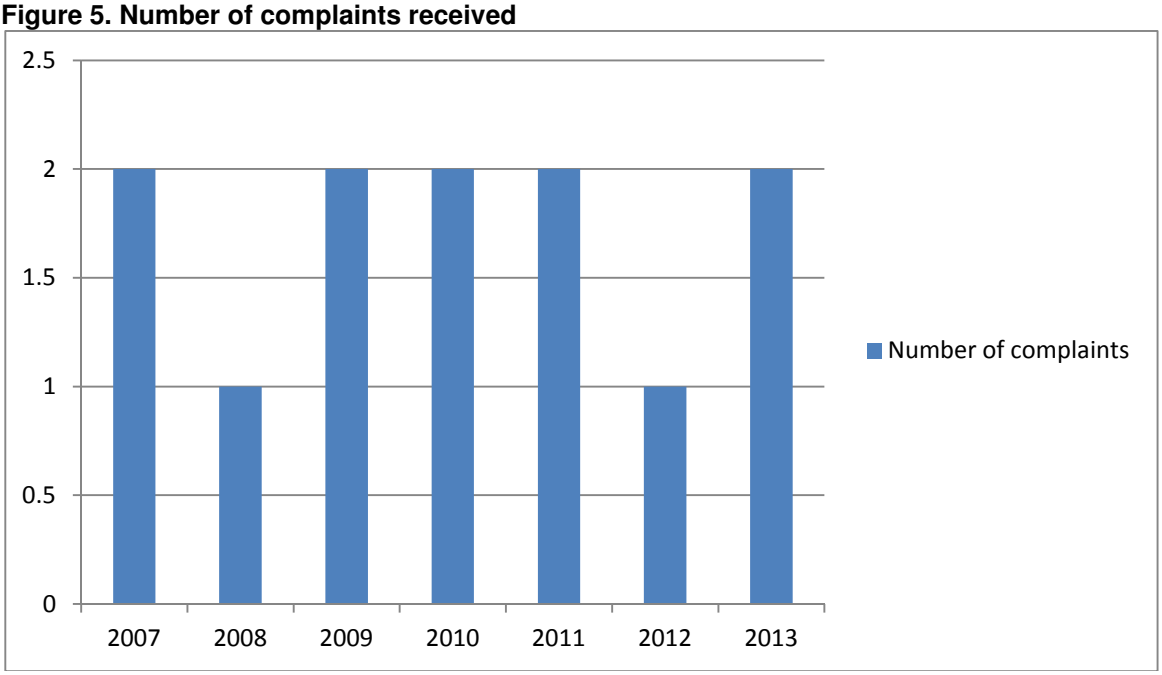
Figure 4. Calls by Month of the Year



Complaints received

Just two complaints about the VPIC service were received during 2013. Both complaints were handled according to the VPIC complaints investigation procedure.

Figure 5. Number of complaints received

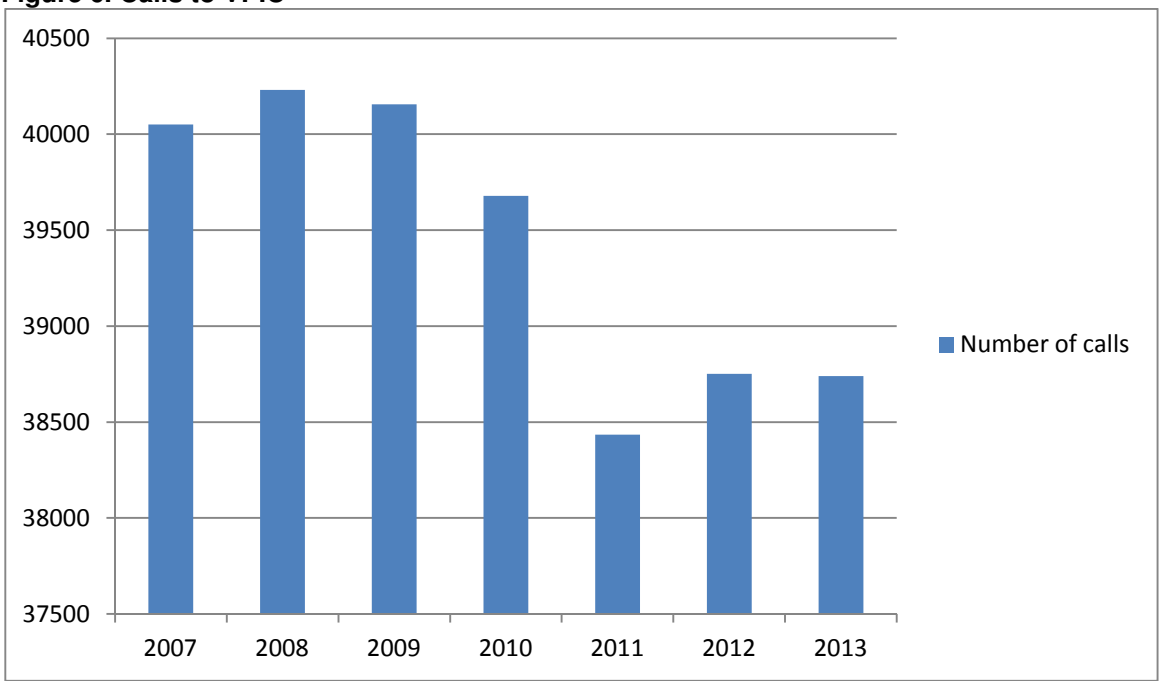


Calls to VPIC

The centre received a total of 38,740 calls in 2013, an average of 106 calls per day. This was very close to 2012 (38,751 calls, average 106 calls per day) and marginally above 2011 (38,435 calls, average 105 calls per day) and slightly below 2010 (39,679 calls, average 109 calls per day) and 2009 (40,155 calls, average 110 calls per day). The 2013 total includes 2,661 calls

answered by VPIC during 66 overnight shifts (New South Wales 869, Victoria 597, Western Australia 389, Queensland 506, South Australia 186, Tasmania 44, Australian Capital Territory 41, Northern Territory 29). Seventy of these overnight calls were referred to the national roster toxicologist.

Figure 6. Calls to VPIC



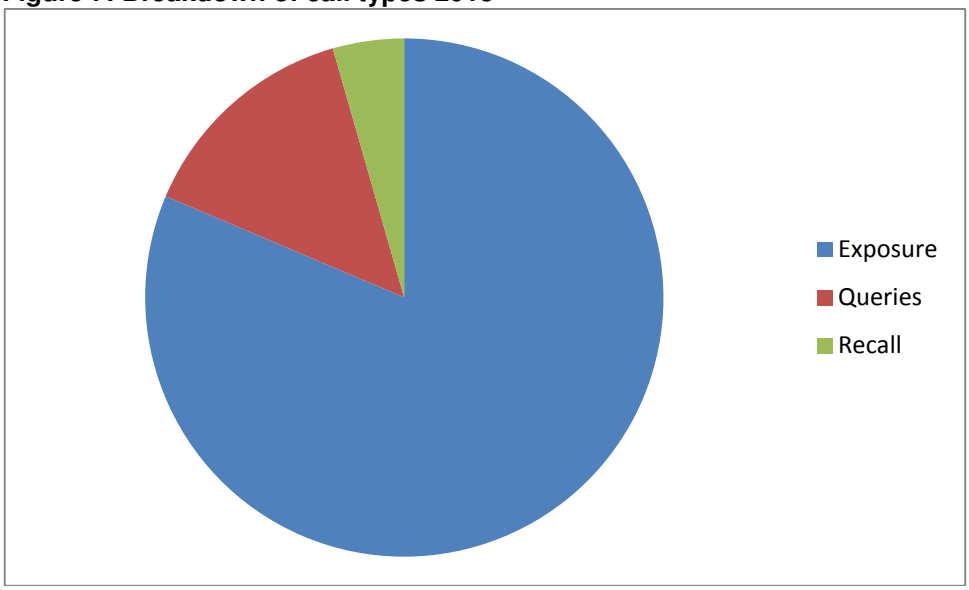
Call types (Figure 7)

Most calls involved an exposure. Approximately one-seventh of calls were queries.

Call type	Number of calls	%
Exposure to a poison	31,531	82
Queries	5,485	14
Recall*	1,724	4
Total	38,740	100

* A recall is a second or subsequent call about a particular exposure.

Figure 7: Breakdown of call types 2013



* A recall is a second or subsequent call about a particular exposure.

Query types

The types of queries received are shown below.

Query type	Number of calls	%
Drug information	2,423	44
Poisons information	2,031	37
Prevention of poisoning/safety	254	5
Medicines and pregnancy	226	4
Medical	216	4
Medicines and breastfeeding	200	4
Environmental	132	2
Occupational	3	<1
Total	5,485	100

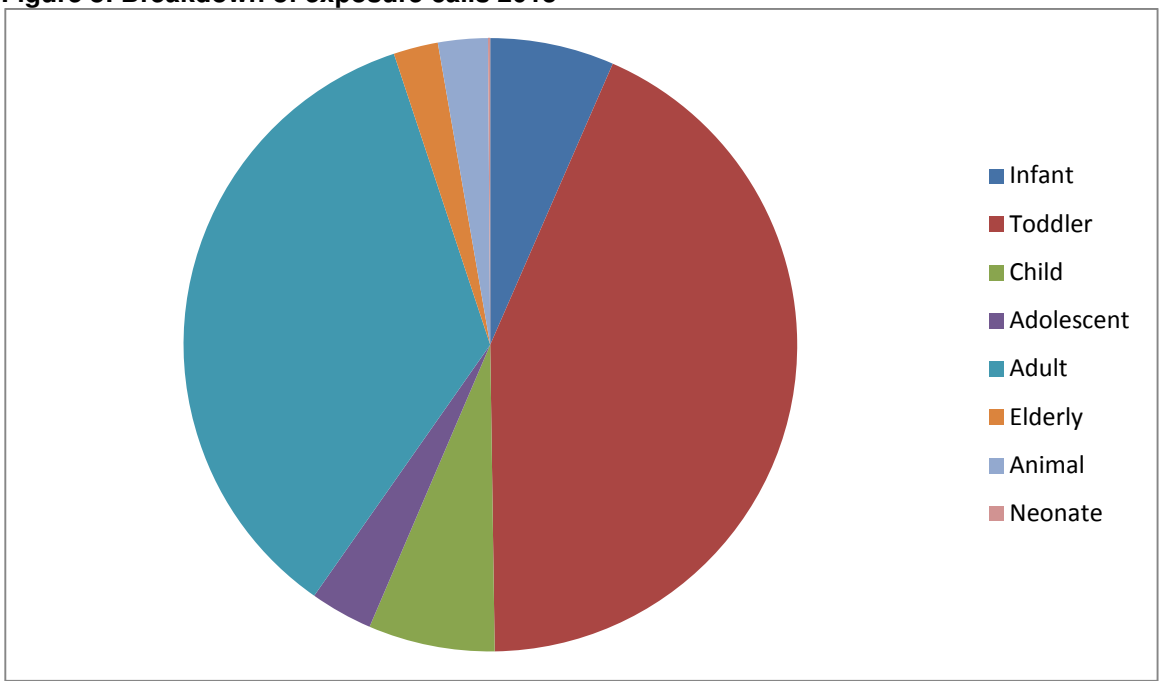
Person exposed (Figure 8)

The majority of calls about exposure to a poison involved toddlers.

Person exposed	Number of calls	%
Neonate (0 to 4 weeks)	37	<1
Infant (4 weeks to 1 year)	2,062	6
Toddler (1 to 4 years)	13,630	44
Child (5 to 14 years)	2,104	7
Adolescent (15 to 19 years)	1,040	3
Adult (20 to 74 years)	11,088	35
Elderly (>75 years)	742	2
Animal*	828	3
Total	31,531	100

* Callers phoning about an exposure involving an animal were referred to their vet

Figure 8: Breakdown of exposure calls 2013



Person calling (animal exposures excluded)

The majority of calls about exposure to a poison were received from members of the public.

Person calling	Number of calls	%
Family member	17,006	57
Self	6,009	19
Doctor	3,478	11
Nurse	1,400	5
Carer	1,232	4
Ambulance	608	2
Friend	531	2
Pharmacist	210	<1
Counselling service	134	<1
Other, eg police, teachers	50	<1
Other medical professional, eg psychologist, social worker	45	<1
Total	30,703	100

Types of exposure (animal exposures excluded)

The majority of calls about exposure to a poison involved accidental exposures.

Types of exposure	Number of calls	%
Accidental	21,266	70
Therapeutic error	4,741	15
Intentional	3,986	13
Workplace acute	687	2
Workplace chronic	14	<1
Environmental/other	9	<1
Total	30,703	100

Routes of exposure (animal exposures excluded)

The majority of calls about exposure to a poison involved ingestion.

Route of exposure	Number of exposures	%
Ingestion	31,033	82
Ocular	1,975	5
Dermal	1,803	5
Inhalation/nasal	1,784	5
Bite/sting	878	2
Parenteral	300	1
Aural	30	<1
Vaginal	12	<1
Rectal	12	<1
Total	37,827*	100

* The number of exposures is greater than the person exposed, person calling and types of exposure numbers because a call sometimes has more than one exposure, eg polypharmacy overdoses, household items sprayed into the mouth, face and eyes.

Handling calls – neonates (0 to 4 weeks)

The majority of neonates exposed to a poison could be managed at home.

Handling calls - neonates	Number of calls	%
Stay at home	30	81
Hospital refer	0	0
In hospital	6	16
GP refer	0	0
At GP surgery	0	0
Other	1	3
Total	37	100

Handling calls – infants (4 weeks to 1 year)

The majority of infants exposed to a poison could be managed at home.

Handling calls – infants	Number of calls	%
Stay at home	1,896	93
Hospital refer	27	1
In hospital	68	3
GP refer	17	1
At GP surgery	23	1
Other	31	1
Total	2,062	100

Handling calls – toddlers (1 to 4 years)

The majority of infants exposed to a poison could be managed at home.

Handling calls – toddlers	Number of calls	%
Stay at home	12,060	88
Hospital refer	389	3
In hospital	764	6
GP refer	91	1
At GP surgery	146	1
Other	180	1
Total	13,630	100

Handling calls – children (5 to 14 years)

The majority of children exposed to a poison could be managed at home.

Handling calls - children	Number of calls	%
Stay at home	1,565	75
Hospital refer	130	6
In hospital	251	12
GP refer	52	2
At GP surgery	38	2
Other	68	3
Total	2,104	100

Handling calls – adolescents (15 to 19 years)

The majority of adolescents exposed to a poison could be managed at home.

Handling calls – adolescents	Number of calls	%
Stay at home	223	21
Hospital refer	223	21
In hospital	492	48
GP refer	44	4
At GP surgery	10	1
Other	48	5
Total	1,040	100

Handling calls – adults (20 to 74 years)

The majority of adults exposed to a poison could be managed at home.

Handling calls – adults	Number of calls	%
Stay at home	5,644	51
Hospital refer	1,286	12
In hospital	2,668	24
GP refer	571	5
At GP surgery	346	3
Other	573	5
Total	11,088	100

Handling calls – elderly (>75 years)

The majority of elderly people exposed to a poison could be managed at home.

Handling calls - elderly	Number of calls	%
Stay at home	506	68
Hospital refer	72	10
In hospital	92	12
GP refer	34	5
At GP surgery	9	1
Other	29	4
Total	742	100

Symptom severity at the time of the call (animal exposures excluded)

The majority of human exposures were asymptomatic at the time of the call to VPIC.

Poisoning severity score*	Number of calls	%
None	22,135	73
Minor	8,063	26
Moderate	401	1
Severe	95	<1
Fatal	9	<1
Total	30,703	100

* Symptom severity scoring is based on the Poisoning Severity Score. Persson HE, Sjoberg GK, Haines JA, Pronczuk de Garbino J. Poisoning severity score. Clin Tox 1998; 36(3): 205-13.

Top ten exposure substances

VPIC's top ten exposure substances during 2013 are shown below.*

Substance	**Number of exposures**
Paracetamol	2,029
Benzodiazepines	1,087
Ibuprofen	925
Selective serotonin re-uptake inhibitor antidepressants	792
Topical antiseptics, handsanitisers	687
Bleach (hypochlorite based)	680
Silica gel	547
Quetiapine	521
Paracetamol/narcotic combination analgesic	516
Toilet bowl cleaner/deodoriser: cage/disc type	507

*These are not necessarily the most toxic, but rather may be the most accessible.

Exposures to non-medicine, non-drug products

Substance/product	Number of exposures
HOME PRODUCTS	
Adhesives, glues, cements, pastes	
Cyanoacrylates	171
Epoxy resins	25
Model glues, cements	15
Non-toxic glues, pastes	61
Adhesive, glue, cement, paste: other/unknown	63
Art, craft, hobby, writing products	
Chalk	29
Correction fluid	26
Crayon	17
Paint: artists' paints, non-water colour	15
Paints: artists' paints, water colours	16
Paper/cardboard	25
Pencil	16
Pens/ink (including stamp pad ink, textas)	199
Printer ink/cartridge	12
Art, craft, writing products: other/unknown	42
Batteries	
Automotive	24
Disc/button	80
Penlight/dry cell	154
Cleaners, bleaches, detergents etc	
Bleach (hypochlorite based)	680
Bleach: other/unknown	13
CD/DVD cleaner	2
Cleaner: all purpose/hard surface	417
Cleaner: ammonia based	13
Cleaner: baby bottle	7
Cleaner: bathroom/shower/tile	128
Cleaner: carpet	58
Cleaner: drain	95
Cleaner: floor	92
Cleaner: glass/window	110
Cleaner: industrial	112
Cleaner: leather/vinyl/upholstery	3
Cleaner: nappy	23
Cleaner: oven	181
Cleaner: other/unknown	169
Detergent: anionic/non-ionic (not hand dish type)	14

Detergent: automatic dishwasher liquids	16
Detergent: automatic dishwasher powders/tablets	301
Detergent: automatic dishwasher rinse agents	48
Detergent: cationic (not disinfectants)	5
Detergent: hand dish	461
Detergent: laundry	369
Disinfectant	299
Dry cleaning agent	1
Fabric softener	25
Ironing aid/starch	9
Laundry additive	48
Pre-wash stain remover	106
Rust remover: other/unknown	9
Sugar soap (sodium carbonate)	25
Toilet bowl cleaner/deodoriser: cage/disc type	507
Toilet bowl cleaner: powder/liquid	73
Vaporiser cleaning tablet	6
Fire extinguishers	
BCF/Halon	3
Dry powder	40
Foam	4
Food products, food poisoning	
Dietary/nutritional/energy/workout supplements	58
Food additives	128
Food allergy	16
Food poisoning	66
Food recall/scare	8
Food spoilage	229
MSG (Chinese restaurant syndrome)	1
Garden products	
Fertiliser: household plant food	22
Fertiliser: outdoor	62
Soil/potting mix	39
Miscellaneous home products	
Air fresheners	205
Blu-tac	19
Bubble blowing solution	201
Charcoal	13
Christmas decorations	5
Cigarettes and tobacco products	108

Coins	34
Cyalume light sticks/glow necklaces	301
Desiccants: other/unknown (not silica gel)	93
Dyes: fabric	10
Dyes: food	3
Dyes: other/unknown	16
Fire starters	86
Foreign body	166
Fragrant oil/pot pourri oil	86
Freezer/cold packs	78
Glass	10
Incense	4
Massage oil	23
Matches	9
Pet food	24
Plastic/polystyrene	89
Room deodoriser	107
Silica gel	547
Thermometer: mercury	65
Thermometer: non-mercury	18
Toys	136
Household products: other/unknown	303
Photographic products	
Photographic chemicals	1
Polishes and waxes	
Polish/wax: car	15
Polish/wax: floor (including sealers)	1
Polish/wax: furniture	22
Polish/wax: metal	12
Polish/wax: shoe/boot	6
Polish/wax: other/unknown	2
Swimming pool and aquarium products	
Aquarium products	37
Pool chlorine	82
Pool test kits/solutions	2
Pool products: other/unknown	19
BUILDING/HANDYMAN PRODUCTS	
Building products	
Asbestos	13
Asphalt/bitumen	1
Caulking compounds and construction putties	19
Cement/concrete/lime	45
Clay	3
Fibreglass	4

Insulation	11
Methyl ethyl ketone peroxide	10
Soldering flux	2
Building/handyman products: other/unknown	74
Paints and paint strippers	
Copper chrome arsenate (wood preservative)	9
Creosote (wood preservative)	4
Paints: anticorrosive	2
Paints: oil-based	44
Paints: water-based house type	53
Paint strippers: methylene chloride based	19
Paint strippers: other/unknown	11
Paint thinner	26
Paints: other/unknown	119
Varnishes and lacquers	8
Wood stains	12
CAR/BOAT PRODUCTS	
Car products: antifreeze	29
Car products: brake fluid, transmission fluid etc	30
Car products: other/unknown	78
CHEMICALS	
Alcohols	
Alcohol ethanol (beverage)	306
Alcohol ethanol (non-beverage)	132
Isopropanol	17
Methanol	12
Alcohol: other/unknown	1
Essential oils	
Camphor	10
Clove oil	21
Eucalyptus oil	262
Tea tree oil	94
Essential oil: other/unknown	113
Fumes, gases, vapours	
Carbon dioxide	6
Carbon monoxide	76
Chlorine	6
Chlorine/chloramine gas (mixing household cleaning agents)	44
Helium	4
Hydrogen sulphide	6
Methane and natural gas	119

Propane and other simple asphyxiants	20
Smoke/toxic products of combustion	70
Fume/gas/vapour: other/unknown	55
General chemicals	
Acetone (not nail polish removers)	20
Acids: other/unknown	38
Alkalis (not cleaners)	36
Ammonia (not cleaners)	18
Benzene	5
Borates (not insecticides)	13
Copper sulphate	14
Corrosives: other/unknown	6
Cyanide	5
Ethylene glycol and other glycols	37
Formaldehyde/formalin	14
Hydrochloric acid	66
Hydrofluoric acid	20
Hydrogen peroxide (non-medical)	32
Iodine (non-medical)	5
Isothiazolones (acticide, biocide, kathon, octhilinone etc)	5
Methylene chloride (not paint strippers)	3
Phenol and other phenolics	7
Potassium permanganate	3
Strychnine	5
Sulphur	4
Chemicals: other/unknown	171
Heavy metals	
Aluminium	14
Cadmium	2
Chromium salts	2
Copper	15
Lead	37
Manganese	1
Mercury (not thermometers)	29
Metal fume fever	10
Selenium	5
Heavy metals: other/unknown	14
Hydrocarbons	
Hydrocarbons: aliphatic	23
Hydrocarbons: aromatic	4
Hydrocarbons: halogenated	35
Hydrocarbons: other/unknown	20
Kerosene	28
Lamp oil	19

Lighter fluid	6
Oils: lubricating/engine/machine	102
Petrol	206
Shellite	1
Toluene/xylene	22
Turpentine, mineral	134
BITES AND STINGS	
Insects	
Ant	23
Bee	39
Caterpillar	8
Centipede/millipede	11
Mosquito	4
Scorpion	28
Tick	9
Wasp/hornet	73
Insect bites: other/unknown	98
Mammals	
Animal bite: dog/cat	1
Animal bite: other/unknown	12
Marine	
Fish stings: other/unknown	24
Jellyfish and other *Coelenterate* stings	12
Stingray	5
Marine bites/stings: other/unknown	6
Reptiles and amphibians	
Lizard	4
Snake	121
Spiders	
Redback spider	121
White-tailed spider	84
Spider bite: other/unknown	262
COSMETICS AND PERSONAL CARE PRODUCTS	
Cosmetics	
Antiperspirants	29
Baby oil	53
Baby wipes	12
Bath oil/bubble bath/bath preparations	129
Cleanser: skin	3
Creams/lotions/make-up	188
Deodorants	70
Depilatories	37
Lipstick/lip balms	34

Perfume/cologne/aftershave	209
Soap	227
Sunscreen/suntan products	82
Talc and other external powders	63
Cosmetics: other/unknown	20
Dental/oral care products	
Denture cleaning agents	29
Mouthwash: ethanol containing	52
Mouthwash: non-ethanol containing	43
Mouthwash: other/unknown	3
Teething gels	75
Toothache drops	4
Toothpaste with fluoride	82
Toothpaste without fluoride	5
Dental care products: other/unknown	6
Hair care products	
Hair colours (not peroxide)	81
Hair colours (peroxide)	47
Hair conditioner	20
Hair gel/mousse	8
Hair rinses, perms	4
Hair spray	16
Shampoo antidandruff: selenium based	2
Shampoo antidandruff: zinc pyrithione	4
Shampoo antidandruff: other	5
Shampoo non-medicated	65
Hair care: other	30
Nail products	
Nail hardeners	3
Nail polish	146
Nail polish remover	243
Nail primer	10
Nail products: other/unknown	29
VETERINARY PRODUCTS	
Veterinary: animal vaccines	63
Veterinary: external medicines	128
Veterinary: flea collars/insecticidal washes	7
Veterinary: heart worm preparations	5
Veterinary: internal medicines	220
PESTICIDES/HERBICIDES/FUNGICIDES	
Baits	
1080/monofluoroacetate	1
Rodenticides: anticoagulant (warfarin type)	19
Rodenticides: anticoagulant (long-acting)	287

Rodenticides: other/unknown	100
Baits: other/unknown	49
Carbamates	
Carbamates	5
Carbamates in combination with other pesticides	7
Chlorinated hydrocarbons	
Chlorinated hydrocarbons (endrin, dieldrin, heptachlor etc)	1
Fumigants	
Bromides	4
Phosphine	2
Fungicides	
Carbamate type	2
Copper type	6
Fungicides: phthalimide (captan, captafol etc)	1
Fungicides: other/unknown (non-medical)	10
Herbicides	
Glyphosate	245
Herbicides: carbamate type	2
Herbicides: pyridine type (clopyralid, triclopyr etc.)	5
Herbicides: chlorphenoxy type (2, 4 D; MCPA etc.)	39
Herbicides: triazine type	13
Paraquat/diquat	35
Herbicides: other/unknown	99
Insecticides/pesticides	
Borates/boric acid pesticides	88
Insect coils	1
Insect repellants containing DEET	56
Insect repellants not containing DEET	32
Pyrethrins/pyrethroids	362
Rotenone	2
Snail/slug bait: iron edetate	9
Snail/slug bait: metaldehyde	36
Snail/slug bait: methiocarb	6
Pesticides: other/unknown	71
Moth repellents	
Naphthalene moth repellants	39

Organophosphates	
Organophosphates	42
PLANTS AND MUSHROOMS	
Mushrooms	216
Plants: amaryllidaceae	22
Plants: amygdalin/cyanogenic glycosides	36
Plants: anticholinergic	19
Plants: cactus	8
Plants: capsaicin	27
Plants: cardiac glycosides	20
Plants: daphne	3
Plants: dermatitis	26
Plants: dieffenbachia	1
Plants: euphorbiaceae	27
Plants: gastrointestinal irritants	40
Plants: grayanotoxins	1
Plants: hallucinogenic	7
Plants: holly	2
Plants: lantana	2
Plants: non-toxic	76
Plants: oxalate	142
Plants: solanine	48
Plants: toxalbumins	2
Plants: other/unknown	138
MISCELLANEOUS NON-MEDICINE, NON-DRUG EXPOSURES	
Blue-green algae	15
Faeces/urine	69
Snail/slug	55

Exposures to medicines and drugs

Medicine/drug	Number of exposures
ANAESTHETICS	
Anaesthetics: inhalation	6
Anaesthetics: topical/local	31
Anaesthetics: other/unknown	4
Nitrous oxide	1
ANALGESICS	
Aspirin/narcotic combination analgesic	3
Aspirin/salicylates	159
Codeine	27
Dextropropoxyphene	1
Fentanyl	8
Morphine	40
Oxycodone	291
Paracetamol	2029
Paracetamol/narcotic combination	516
Pethidine	1
Tramadol	127
Analgesics: narcotic other/unknown	11
Analgesics: non-narcotic other/unknown	4
ANTICHOLINERGICS	
Atropine	4
Benztropine	27
Orphenadrine	2
Anticholinergic drugs: other/unknown	46
ANTICOAGULANTS and BLOOD PRODUCTS	
Heparin	4
Warfarin	114
Anticoagulants: other/unknown	23
ANTIHISTAMINES	
Cetirizine	95
Dexchlorpheniramine	29
Fexofenadine	75
Loratadine	106
Pheniramine	7
Promethazine	127
Antihistamines: other/unknown	27
ANTIMICROBIALS	
Antibiotics	
Antibiotic combinations (Augmentin, Bactrim etc.)	50
Cephalosporins	111

Macrolides	56
Penicillins	234
Quinolones	3
Sulphonamides	4
Tetracyclines	46
Antibiotics: other/unknown	25
Antifungals	
Antifungal drugs (ketoconazole, fluconazole etc)	24
Antiparasitics/Anthelmintics	
Anthelmintics	74
Antianaerobes (metronidazole, tinidazole etc)	26
Antituberculars	
Antitubercular drugs	1
Antivirals	
Antiviral drugs	15
ANTIMIGRAINE DRUGS	
Ergot alkaloids	1
Triptans (naratriptan, sumatriptan etc)	9
Migraine preparations: other/unknown	33
ASTHMA/RESPIRATORY DRUGS	
Anticholinergics (ipratropium, tiotropium etc)	77
Bronchodilators (salbutamol, terbutaline, eformoterol, salmeterol, indacaterol etc)	20
Leukotriene receptor antagonists (montelukast, zafirlukast etc)	35
Preventors	39
Theophylline and other xanthines	1
Asthma drugs: other/unknown	2
Respiratory drugs: other/unknown	8
CARDIOVASCULAR DRUGS	
ACE inhibitor/diuretic combinations	17
ACE inhibitors	153
Adrenaline	34
Alpha blockers	28
Angina preparations	3
Angiotensin II antagonist/diuretic combinations	83
Angiotensin II antagonists	163

Antiarrhythmic agents	21
Antihypertensives: other (not diuretics)	40
Antiplatelet agents: other (clopidogrel, dipyridamole etc)	53
Beta blockers	278
Calcium antagonist/ACE inhibitor combinations	23
Calcium antagonist/angiotensin II antagonist combinations	9
Calcium antagonist/angiotensin II antagonist/diuretic combinations	3
Calcium antagonist/statin combinations	4
Calcium antagonists	92
Cardiac glycosides	63
Diuretics: other	69
Diuretics: potassium sparing	14
HMG CoA reductase inhibitors (statins)	147
Lipid lowering agents: fibrates (gemfibrozil, fenofibrate etc)	12
Lipid lowering agents: other	3
Nitrates	41
Vasodilators	13
Cardiovascular drugs: other/unknown	5
CENTRAL NERVOUS SYSTEM DRUGS	
Antidepressants	
Agomelatine	3
Duloxetine	93
Mianserin	3
Mirtazapine	154
Monoamine oxidase inhibitors	14
Selective serotonin reuptake inhibitors (citalopram, escitalopram, fluoxetine etc.)	792
Tricyclic antidepressants	173
Venlafaxine/desvenlafaxine	312
Antidepressants: other/unknown	23
Antiepileptics	
Carbamazepine	127
Gabapentin	26
Lamotrigine	56
Levetiracetam	27
Phenytoin	20
Pregabalin	70
Sodium valproate	244
Topiramate	28
Antiepileptics: other/unknown	97

Antipsychotics	
Amisulpride	19
Aripiprazole	14
Clozapine	31
Olanzapine	154
Phenothiazines (chlorpromazine, trifluoperazine etc)	95
Quetiapine	521
Risperidone	108
Ziprasidone	14
Antipsychotics: other/unknown	33
CNS depressants	
Barbiturates	20
Benzodiazepines	1087
Doxylamine	66
Melatonin	50
Sleep aids over-the-counter: other	3
Zolpidem	44
Zopiclone	62
Sedative/hypnotic: other/unknown	16
CNS stimulants	
Amphetamines (for ADHD, not street drugs)	126
Caffeine	56
CNS – miscellaneous	
Antidementia agents (donepezil, galantamine, memantine, rivastigmine)	20
Antiparkinsonian agents	52
Baclofen	34
Clonidine	83
Lithium	77
CNS drugs: other/unknown	2
COUGH/COLD PREPARATIONS	
Antitussives	22
Cough/cold preparations with paracetamol	206
Cough/cold preparations without paracetamol/aspirin	235
Dextromethorphan	26
Pseudoephedrine	10
Throat lozenges with local anaesthetic	3
Throat lozenges without local anaesthetic	24
DRUGS USED IN ADDICTIVE DISORDERS	
Buprenorphine	19
Bupropion	9
Disulfiram	3

Methadone	38
Naltrexone	8
Antismoking products: other (nicotine gum, lozenges, patches etc)	79
EAR PREPARATIONS	
Ear drops	50
Ear ointments	3
EYE PREPARATIONS	
Contact lens preparations	15
Eye drops: imidazoline-based	3
Eye drops: other/unknown	53
Eye ointment	2
GASTROINTESTINAL PREPARATIONS	
Antacids	55
Antidiarrhoeals: diphenoxylate/atropine	1
Antidiarrhoeals: loperamide	30
Antidiarrhoeals: other/unknown	1
Antiemetics	118
Antispasmodics (hyoscine butylbromide etc)	18
Barium, soluble salts	1
Histamine H_2- antagonists (cimetidine, ranitidine etc.)	49
Laxatives	118
Proton pump inhibitors (omeprazole, pantoprazole, esomeprazole etc.)	213
Gastrointestinal preparations: other/unknown	67
METABOLISM	
Electrolytes/minerals	
Calcium salts	57
Fluoride	2
Iron (not multivitamins)	94
Potassium salts	34
Electrolytes: other/unknown	6
Vitamins	
Folic acid	40
Vitamin A	7
Vitamin B group	38
Vitamin C	50
Vitamin D	194
Vitamins compound with iron	182
Vitamins compound without iron	129
Vitamins: other	76

Other metabolic	
Androgenic and anabolic agents	1
Antihormones (tamoxifen, cyproterone, flutamide etc.)	21
Antithyroid preparations	18
Bisphosphonates	9
Corticosteroids	225
Diet aids/anorectics - over-the-counter	24
Diet aids/anorectics - prescription	17
Hypoglycaemics, oral: alpha glucosidase inhibitors (acarbose etc)	2
Hypoglycaemics, oral: biguanides (metformin)	90
Hypoglycaemics, oral: combination products (metformin/glibenclamide, metformin/rosiglitazone, metformin/sitagliptin etc)	14
Hypoglycaemics, oral: DPP-4 inhibitors (sitagliptin, vildagliptin etc)	3
Hypoglycaemics, oral: glitazones	1
Hypoglycaemics, oral: sulphonylureas (glibenclamide, gliclazide, glipizide etc)	46
Insulin	56
Oestrogens/progestogens (not oral contraceptives)	16
Oral contraceptives: oestrogen and progestogen	294
Oral contraceptives: progestogen only	49
Thyroxine	111
Thyroid preparations: other/unknown	11
Hormones: other/unknown	14
NONSTEROIDAL ANTI-INFLAMMATORY DRUGS AND GOUT MEDICATIONS	
Allopurinol	24
Celecoxib	31
Colchicine	21
Diclofenac	159
Ibuprofen	925
Ibuprofen plus codeine	93
Indomethacin	21
Mefenamic acid	20
Naproxen	40
NSAIDs: other/unknown	60
NOSE PREPARATIONS	
Nose drops/sprays: imidazoline-based	23
Nose drops/sprays: other/unknown	15
Nasal preparations: other/unknown	12

STREET DRUGS	
Amphetamine and related drugs	103
Amyl nitrite and other volatile nitrites	6
Cannabinoids, synthetic (Jungle Fever, K2, Marley, Spice etc)	13
Cathinones (mephedrone, methylone etc)	3
Cocaine	8
Ecstasy and other hallucinogenic amphetamines	23
Gamma hydroxybutyrate	24
Hallucinogenics: other/unknown	4
Heroin	8
Inhalant abuse (chroming)	10
Ketamine/methoxetamine	2
LSD	8
Marijuana	46
Phencyclidine (PCP)	1
Street drugs: other/unknown	37
TOPICAL PREPARATIONS	
Acne preparations	13
Antipruritics (calamine lotion etc)	22
Capsaicin	17
Chest rubs	145
Hydrogen peroxide	14
Lice/scabies preparations	95
Liniments	149
Lotions/creams/ointments: other/unknown	15
Nappy rash products	385
Topical antibiotics	28
Topical antifungals	146
Topical antiseptics (handsanitisers etc)	687
Topical antivirals	4
Topical corticosteroids	168
Wart/corn preparations	25
Topical preparations: other/unknown	110
MISCELLANEOUS MEDICINE/DRUG EXPOSURES	
Antineoplastics	12
Chloroquine/hydroxychloroquine	6
Diagnostic agents	1
Herbal preparations	154
Homeopathic preparations	69
Immunosuppressants	29
Methotrexate	32
Muscle relaxants (baclofen etc)	1
Quinine	2

Unknown tablets/capsules	49
Urinary alkalinisers/antiseptics	1
Vaccines/toxoids/antivenoms	34
Vaporiser fluids and inhalants	249
Other over-the-counter-medicines	77
Other prescription medicines	59