



Government of Western Australia
North Metropolitan Health Service
Sir Charles Gairdner Osborne Park Health Care Group

Western Australian Poisons Information Centre

Annual Report 2022



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Contents

Introduction	4
Case Recording	4
Activities	4
Training and Continued Education	4
Quality Improvement Exercises	5
Preventative Activities	5
Data Requests.....	6
Consultation Submissions	7
Publications	7
Presentations	7
Other	7
Personnel	8
Medical Director	8
Managers (Heads of Department)	8
Specialists in Poisons Information	8
Clinical Toxicologists	9
Toxicology Fellows	9
Toxicology Registrars	9
Call Statistics	10
Table 1: Number of Incoming Phone Calls by State of Origin	10
Figure 1: Number of Calls by Month of the Year	11
Table 2: Number of Cases, Incidents and Requests for Information	11
Table 3: Incoming Phone Calls per Category of Caller.....	12



Case Statistics	13
Table 4: Cases by Species.....	13
Table 5: Human Case Numbers by Gender	13
Figure 2: Human Case Numbers by Age Group	14
Figure 3: Initial Severity (Human Cases).....	14
Table 6: Circumstance of Exposure (Human Cases)	15
Table 7: Location of Exposure (Human Cases).....	16
Table 8: Top 20 Substances (Human Cases).....	17
Table 9: Number of Human Cases by Location of Treatment Pre-Inquiry	18
Table 10: Recommended Disposition of Human Cases Where Pre-Inquiry Location was the Location of Poisoning	18
Comments	19

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Introduction

The Western Australian Poisons Information Centre (WAPIC) provides telephone advice for actual or suspected poisoning to the general public and healthcare professionals. Such cases may include (but are not limited to) exposure to pharmaceuticals, household or industrial chemicals, pesticides, plants, fungi and venomous marine or terrestrial animals. The centre also provides advice on poisoning prevention and serves a toxicovigilance role by identifying poisoning trends and reporting these trends to relevant regulatory bodies.

The WAPIC is located at Sir Charles Gairdner Hospital (SCGH) in Perth. Calls are answered and handled by Specialists in Poisons Information (SPIs), who are typically pharmacists with further training and experience in clinical toxicology. The service is closely associated with the Western Australian Toxicology Service (WATS) that is based at SCGH, Royal Perth Hospital (RPH) and Fiona Stanley Hospital. Physicians that phone WAPIC regarding complex cases or severely sick patients may be referred to an on call Clinical Toxicologist for expert advice.

The WAPIC serves Western Australia, South Australia and the Northern Territory, a total population of over 4.8 million people. WAPIC operates from 8:00 AM to 10:00 PM WST, seven days per week. Outside of these hours, overnight coverage is shared by the four Australian Poisons Information Centres (PICs), with the WAPIC working three overnights per fortnight. Access to the service is via the 13 11 26 phone number, which is charged at the cost of a local call from any landline in Australia.

Case Recording

Case details were entered directly into a PIC database known as the INTOX Data Management System. This database was developed by the International Programme on Chemical Safety and the World Health Organisation. Vendor support was provided by the Canadian Centre for Occupational Health and Safety but was withdrawn in 2014. Throughout 2022, ongoing collaboration between the four Australian PICs and the University of Sydney resulted in significant progress towards the development of a new national PIC database.

Activities

Training and Continued Education

Clinical Toxicology Training Sessions

In 2022, four clinical toxicology training sessions were held specifically for SPIs;

- ECGs & Cardiotoxic Drugs – Dr Candice Hanson (SCGH Toxicology Fellow).
- Acid-Base – Dr Lori Coulson (RPH Toxicology Fellow).
- Antidepressants – Dr Candice Hanson (SCGH Toxicology Fellow).
- Snakebites – Dr Candice Hanson (SCGH Toxicology Fellow).



SPIs were also able to attend fortnightly Clinical Toxicologist led training sessions that were developed for medical registrars and junior doctors at Sir Charles Gairdner Hospital

SPI Onboarding Training

Three new SPIs were employed in 2022 and completed a two-week full-time onboarding training program. This training program was followed by three months of supervised call taking, with ongoing appointment subject to successful completion of the WAPIC SPI Certification Examination.

Other Training

In early April, Dr Teresa Lebel (Senior Botanist, Botanic Gardens and State Herbarium SA) presented a timely mycology refresher session for WAPIC SPIs.

Quality Improvement Exercises

- **Electronic Cigarette Cases:** Electronic cigarettes have recently been identified by health departments, relevant NGO's, and poisons information centres as a significant emerging health issue. As a quality improvement activity, in the fourth quarter of 2022 the WAPIC collected outcome data for electronic cigarette exposures in WA, SA, and NT.
- **Medical Assessment Guidelines:** Guidelines for medical assessment assist WAPIC SPIs safely determine when medical assessment is required for any given toxin exposure. A full review and update of the WAPIC Medical Assessment Guidelines was completed over the year and a system to ensure regular review and update has been deployed.
- **Overnight Call Audit:** An audit of all calls handled by WAPIC during the overnight shifts (23:45-05:45 AEST) in 2022 was carried out. The purpose of the audit was to review the risk assessment and advice provided by the SPIs to ensure patient safety and to help identify areas that may require further improvement.
- **September Call Audit:** An audit of all calls handled by WAPIC during standard operating hours (08:00-22:00 AWST) in September was completed. The purpose of the audit was to review the risk assessment and advice provided by the SPIs to help identify areas that may require further improvement.

Preventative Activities

The WAPIC collaborates with peak health bodies such as the National Health and Medical Research Council (NHMRC), the Therapeutic Goods Administration (TGA), the WA Department of Health, the SA Department for Health and Wellbeing, and the NT Department of Health. WAPIC also works alongside Kidsafe WA, Injury Matters, the Cancer Council WA and the Australian Competition and Consumer Commission (ACCC). PIC case data can assist in directing public health messaging and supports these organisations to identify poisoning risks and make poisoning related regulatory decision making.

Printed material was supplied to community groups, including child health centres, day-care centres and to interested members of the general public. Information is provided on the first-aid management of poisoning and envenoming, and the safe storage and use of household chemicals.



Data Requests

WAPIC provided the following data in 2022:

- **Bromoxynil/MCPA Cases:** Deidentified call records for all bromoxynil/MCPA cases reported from January 2014 to October 2022 were provided to the NSW Poisons Information Centre.
- **Electronic Cigarette Cases:** Deidentified call records for all electronic cigarette exposures of SA origin from January to October 2022 were provided to SA Department for Health and Wellbeing.
- **Nicotine Cases:** Deidentified call records for all 2022 nicotine exposures of WA origin were provided to Cancer Council WA.
- **New South Wales Calls:** Deidentified call records of all 2022 calls of NSW origin were provided to the NSW Poisons Information Centre.
- **Nitrous Oxide Cases:** Summary data of nitrous oxide cases of WA origin from January 2017 to August 2022 was provided to North Metropolitan Health Service Corporate Communications to assist with a Department of Health media conference.
- **Northern Territory Calls:** Deidentified call records of all 2022 calls of NT origin were provided to the NT Department of Health.
- **Paracetamol Cases:** Summary data of paracetamol cases from 2017-2021 was provided to the TGA to assist in developing the *Independent expert report on the risks of intentional self-poisoning with paracetamol*.
- **Poppy Seed Recall:** A national recall of poppy seeds, available in supermarkets, occurred in November 2022 due to case reports of severe/unusual toxicity in Australia. Deidentified case records for poppy seed cases were entered into a shared national spreadsheet for all 4 PICs. Each PIC could then review the cases, and where required, patient consent obtained to provided patient contact details for follow up locally by each PIC.
- **South Australian Calls:** Deidentified call records of all 2022 calls of SA origin were provided to SA Department for Health and Wellbeing.
- **Spinach Recall:** A national recall of baby spinach, available in supermarkets, occurred in December 2022 due to case reports of unusual toxicity in Australia. Deidentified case records for spinach cases were entered into a shared national spreadsheet for all 4 PICs. Each PIC could then review the cases, and where required, patient consent obtained to provide patient contact details for follow up locally by each PIC and Public Health/Food Safety department.
- **Victorian Calls:** Deidentified call records of all 2022 calls of VIC origin were provided to the VIC Poisons Information Centre.
- **Queensland Calls:** Deidentified call records of all 2022 calls of QLD origin were provided to the QLD Poisons Information Centre.



Consultation Submissions

- **Nitrous Oxide:** Supply of Nitrous Oxide - Consultation Regulatory Impact Statement. WA Department of Health – September 2022.
- **Paracetamol:** Public consultation on proposed amendments to the Poisons Standard (paracetamol). Therapeutic Goods Administration - November 2022.

Publications

- Armstrong, J., Pascu, O. Toxicology Handbook. 4th Edition, Elsevier. Contributors: Gault, A., Hanson, C., Mason, J., Merwood, N., and Wahl, G.
- Chapman, L., Larcombe, A., Lim, E. (2022). The evidence on e-cigarettes is clear. *Medicus*, 62(4), 13.
- Coulson, L., Surla, A., Tran, V., and Hoggett, K. (2022). Severe glycerol intoxication mimicking toxic alcohol ingestion following large volume consumption of vanilla essence. *Clinical Toxicology* 60:11, 1248-1250.
- Kozman, A., Soderstrom, J., Oosthuizen, F., Fatovich, D. (2022). An MDMA cluster and the utility of illicit drug blood sampling. *Clinical Toxicology* 60:10, 1187-1188.

Presentations

- Lim, E. Pharmaceutical Society of Australia, WA Branch Conference. WA Medication Safety Panel. 28th May 2022, Parmelia Hilton, Perth, Western Australia.
- Merwood, N. Tobacco Control Symposium: Reinvigorating tobacco control in the COVID era and beyond. 11-12th October 2022, The Boulevard, Floreat, Perth, Western Australia.

Other

New WAPIC Telephone System: A Concept Approval Request for a new WAPIC telephony system has been approved. The proposed new system is to replace the current phone system with a suitable cloud server telephone system that is compliant with the Australian Standard for Health Contact Centres (AS:5205:2019).

Department Manual Update: Over 2022, the WAPIC Department Manual was reviewed resulting in the refinement of a number of policies and procedures.

Increased Staffing Capacity: In 2022, WAPICs SPI phone operator capacity was officially increased to 5.2 FTE. This has resulted in better phone coverage and shorter queueing times during most days.

New Staff Recruitment: In February 2022, WAPIC appointed two new permanent staff members. They successfully completed the WAPIC SPI Certification Exam in May 2022.

Pharmacy Student Placement: In 2022 WAPIC re-established a long-standing relationship with Curtin School of Pharmacy by hosting a 4th year pharmacy student. The student completed a 2-week study rotation at the department, gaining exposure to common poisoning cases handled by the service.



Personnel

Medical Director

Dr Jason Armstrong, MBChB, FACEM

Managers (Heads of Department)

Dr Ann-Maree Lynch, BSc (Hons) PhD	Jan 2002 – Feb 2022
Nick Merwood, BSc MPharm	Feb 2022 – Dec 2022
Yumi Tan, BPharm GradDipPharm GCEvidBasedCompMed	Nov 2022 – Dec 2022

Specialists in Poisons Information

Klaus Auert, BPharm AACPA

Michael Cao, BPharm MPH MHM

Sandra Cheng, BSc MPharm

Christine Duncan, BSc (Nsg) GradCert (Infection Control) PGradDip (Crit.Care) MPharm RN MACN

Louise Edwards, BA BPharm (Hons)

Mechaiel Farag, BPharm PGradDipPharm MClinPharm MPS MSHP AcSHP

Yousif Hanna, BSc MPharm

Simrat Kaur, BPharm MPH

Elizabeth Lim, BPharm PGradDipPharm MPH MSHP

Cliff Lomanto, BSc MPharm

Bridgett McKay, BPharm

Pooja Mehta, BSc MPharm

Nick Merwood, BSc MPharm

Shani Pickering, BPharm

Yumi Tan, BPharm GradDipPharm GCEvidBasedCompMed

Louise Vanpraag, BPharm



Clinical Toxicologists

Dr Jason Armstrong, MBChB, FACEM

Dr Alan Gault, MBChB, BAO, BA, HSc, FACEM

Dr Julia George, MBBS, FACEM

Dr Kerry Hoggett, MBBS, FACEM, GradCertClinTox

Dr Andrew Kozman, MBBS, FACEM

Dr Ovidiu Pascu, MD, FACEM

Dr Mohan Raghavan, MBBS, MRCS, FACEM

Dr Kirsty Skinner, MBChB, FACEM, GradDipClinTox

Dr Jessamine Soderstrom, MBBS, FACEM, GradCertTox

Dr Ioana Vlad, MD, DCH, VGDWA, FACEM, GradDipClinTox

Dr Gareth Wahl, MBBS, FACEM

Toxicology Fellows

Dr Timothy Cook, MBBS, FACEM

Dr Lori Coulson, MBBS, FACEM

Dr Candice Hanson, MBBS, FACEM

Dr Ben Weber, MBBS, FACEM

Toxicology Registrars

Dr Ashlea Fox, MBBS

Dr Georgina Fisk, MBBS

Dr Lily Tucker, MBBS



Call Statistics

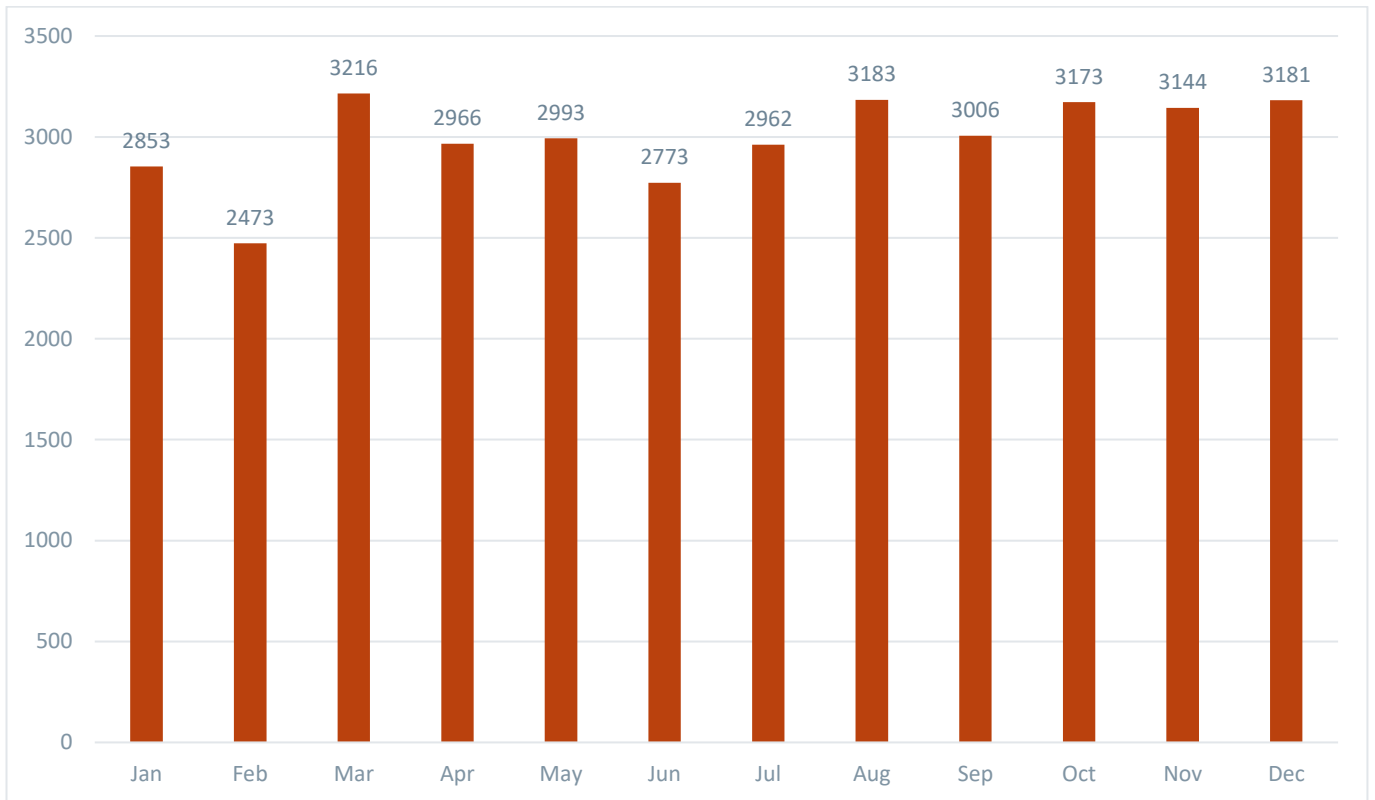
The WAPIC handled 35,923 phone calls in 2022, comprising of 28,666 cases of exposure and 5,473 were requests for information. The tables and figures below provide a summary of the call statistics for WAPIC in 2022.

Table 1: Number of Incoming Phone Calls by State of Origin

Incoming Phone Calls	Number	%
Western Australia	18,992	52.87
South Australia	12,240	34.07
Northern Territory	1,465	4.08
New South Wales	1,283	3.57
Victoria	1,156	3.22
Queensland	572	1.59
Tasmania	150	0.42
Australian Capital Territory	59	0.16
Overseas	6	0.02
TOTAL	35,923	



Figure 1: Number of Calls by Month of the Year



The WAPIC experienced a staffing crisis that extended from the fourth quarter of 2021 well into the first quarter of 2022. To ensure ongoing service provision during this difficult time, operating hours were reduced by up to 20%. Calls were diverted to the New South Wales, Victorian and Queensland PICs, and due to the support of these services callers could continue to receive timely poisons information. As demonstrated in Figure 1, the reduced operating hours during the first quarter of 2022 resulted in lower than anticipated call volumes in January and February 2022.

Table 2: Number of Cases, Incidents and Requests for Information

Call type	Number
Cases	28,666
Incidents	5
Requests	5,473
TOTAL	34,144



Table 3: Incoming Phone Calls per Category of Caller

Caller	Total Calls	%
Family member/victim	23,609	65.72
Parent	12,981	36.13
Grandparent	373	1.04
Other	576	1.60
Partner	998	2.78
Unspecified	1,127	3.14
Victim	7,554	21.03
Health personnel	8,088	22.51
Physician	5,718	15.92
Non-physician medical	1,657	4.61
Ambulance officer	582	1.62
Veterinary personnel	78	0.22
Unspecified	53	0.15
Other personnel	3,125	8.70
Carer	2,774	7.72
Social worker/counsellor	109	0.30
Education worker	205	0.57
Police/other emergency services	33	0.09
Military	4	0.01
Other	859	2.39
Unknown/not recorded	242	0.67
TOTAL	35,923	



Case Statistics

In 2022, the WAPIC handled 28,661 cases of which 28,396 were human exposures. The tables and figures below provide a summary of the case statistics for WAPIC in 2022.

Table 4: Cases by Species

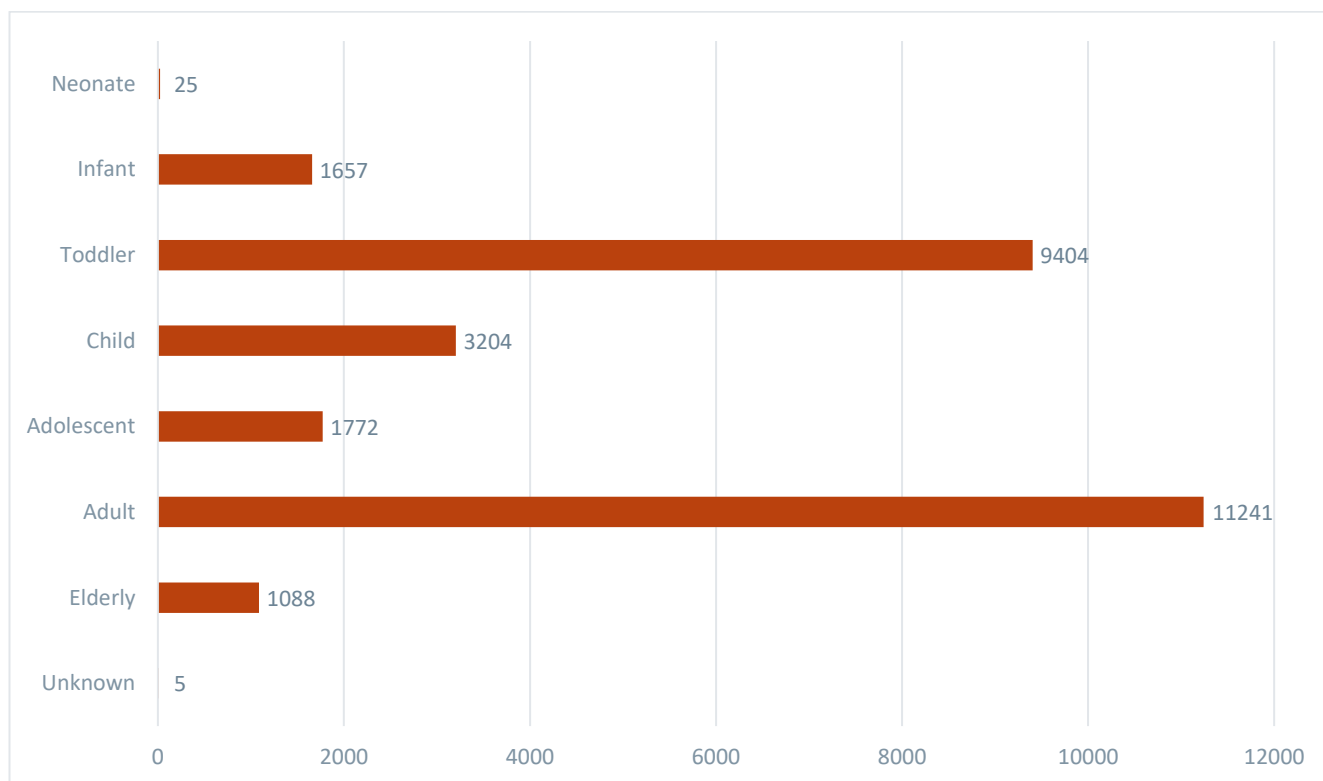
Species	Number
Human	28,396
Dog	230
Cat	27
Bird	1
Horse/pony	3
Other	4
Not recorded	5
TOTAL	28,666

Table 5: Human Case Numbers by Gender

Gender	Number
Male	13,028
Female	15,101
Unknown	73
Not recorded	194
TOTAL	28,396

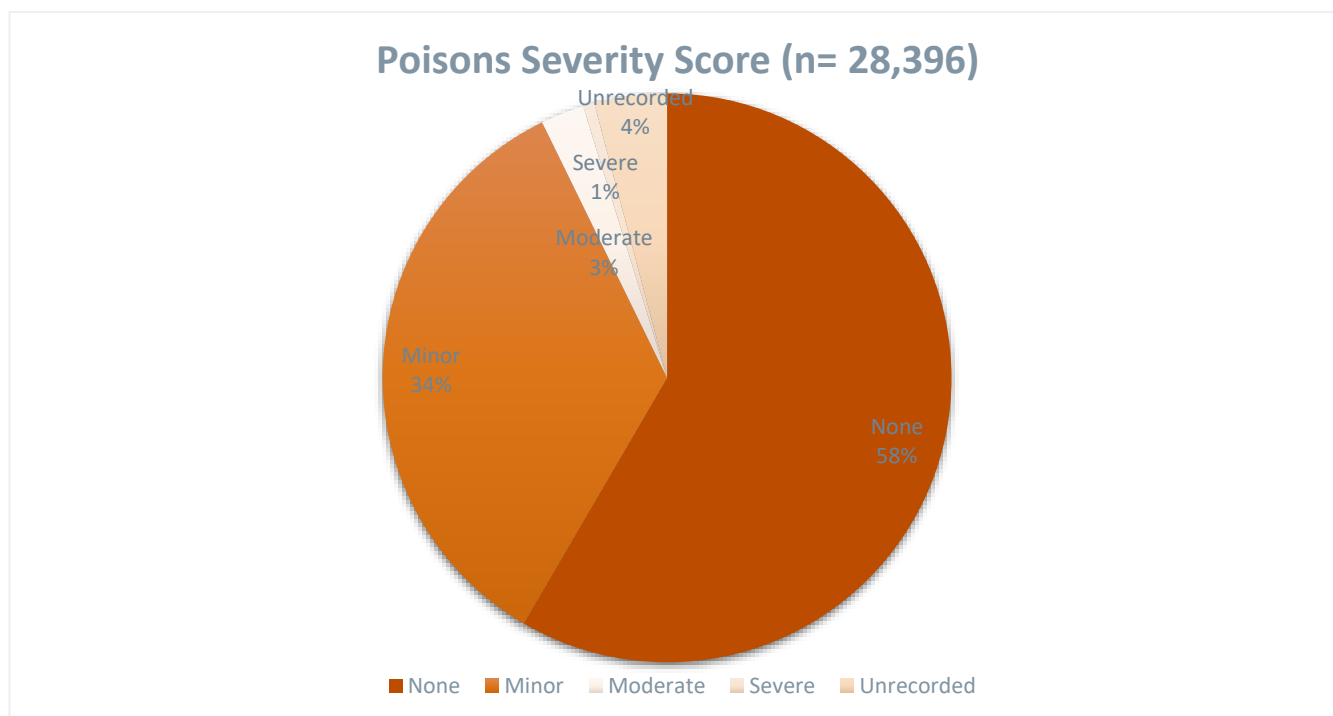


Figure 2: Human Case Numbers by Age Group



Neonate: Birth to 4 weeks, Infant: 1 month to 12 months, Toddler: 1 to 4 years, Child: 5 to 14 years, Adolescent: 15 to 19 years, Adult: 20 to 74 years, Elderly: ≥ 75 years.

Figure 3: Initial Severity (Human Cases)



Severity at the time of the initial call to the WAPIC is scored as per the **Poison Severity Score** – Persson, H.E., Sjoberg, G.K., Haines, J.A. and Pronczuk de Garbino, J. (1998) *Clinical Toxicology*, 36(3): 205-213.



Table 6: Circumstance of Exposure (Human Cases)

Circumstance	Number	%
Unintentional	22,522	79.31
Accidental	16,314	57.45
Occupational	400	1.41
Environmental	19	0.07
Transport Accident	16	0.06
Therapeutic error	5,460	19.20
Misuse	86	0.30
Food poisoning	157	0.55
Other	38	0.13
Unknown	32	0.11
Intentional	4,924	17.34
Suicide	3,760	13.24
Misuse	320	1.13
Abuse	375	1.32
Malicious/criminal	45	0.16
Other	288	1.01
Unknown	136	0.48
Adverse reaction	703	2.48
Food	76	0.27
Drug	529	1.86
Other/unknown	98	0.35
Other	41	0.14
Unknown	206	0.73
TOTAL	28,396	



Table 7: Location of Exposure (Human Cases)

Location	Number	%
Home and surroundings	25,528	89.90
Workplace	527	1.86
Agricultural/horticultural	83	0.29
Mine site	55	0.19
Office	42	0.15
Other/unknown	347	1.22
Medical - hospital	655	2.31
Inpatient facility	184	0.65
Nursing home/hospice	464	1.63
Other	7	0.02
Medical – non-hospital	76	0.27
Enclosed public space	92	0.32
Shop	37	0.13
Leisure facility	28	0.10
Other	27	0.10
Veterinary clinic	8	0.03
Prison	42	0.15
Mode of transport	35	0.12
Educational facility	300	1.06
Open space	169	0.60
Other	6	0.02
Unknown/not recorded	958	3.37
TOTAL	28,396	



Table 8: Top 20 Substances (Human Cases)

There was a total of 36,666 substances involved in 28,396 human cases in 2022. Paracetamol and ibuprofen were the two most common pharmaceuticals involved in human cases (9.89% and 4.28% of cases respectively).

Substance	Number
Paracetamol	2808
Detergents; anionic and non-ionic	1482
Ethanol	1334
Ibuprofen	1215
Quetiapine	537
Sodium hypochlorite	507
Enzyme detergents	429
Foreign body	421
Diazepam	367
Hydrocarbon-other	357
Melatonin	347
Eucalyptus oil	343
Sertraline	332
Sodium carbonate	318
Pyrethroids	307
Silica gel	304
Multivitamins and other minerals	302
Fluoxetine	284
Escitalopram	281
Essential oils - unidentified	267



Table 9: Number of Human Cases by Location of Treatment Pre-Inquiry

Location of pre-inquiry treatment	Number of calls	%
Location of poisoning	23,378	82.33
During transport	22	0.08
Health institution	4976	17.52
Health centre	296	1.04
Inpatient facility	4,601	16.20
Unspecified	79	0.28
Other/unspecified	20	0.07
TOTAL	28,396	

Table 10: Recommended Disposition of Human Cases Where Pre-Inquiry Location was the Location of Poisoning

Location of recommended treatment	Number of cases	%
Stay home	19,315	82.62
GP	563	2.41
Emergency department	3,191	13.65
Health institution unspecified	286	1.22
Other	19	0.08
Unknown/not recorded	4	0.02
TOTAL	23,378	



Comments

The WAPIC handled 35,923 phone calls in 2022, of which 28,396 involved cases of human exposures. A total of 36,666 substances were involved in these cases. Over 2022, 1,466 Clinical Toxicologist consultations were provided through the WAPIC, equating to 4.08% of all calls handled.

At the time of the phone call, 37.48% of the victims were either displaying clinical features or biochemical evidence of poisoning. Our centre does not routinely follow-up calls, and so final severity is not known in the majority of cases.

Collectively, neonates, infants, toddlers, children and adolescents were the victims in 56.56% of all cases, with toddlers (1 to 4 years old) involved in 33.12% of all reported exposures. The most common childhood exposures were accidental, occurred in the home and involved pharmaceuticals or common household products. Adults (aged 20-74 years) were the victims in 39.59% of cases, with 68.74% of these cases being unintentional. Cases of deliberate self-poisoning totalled 13.24% of all cases recorded in 2022. The most common substances involved in these cases were pharmaceuticals.

At the time of the phone call to the WAPIC, 82.33% of the victims were at the location of poisoning and 17.60% had either reached a health institution or were in transit. It is noteworthy that 82.62% of the victims that were at the location of the exposure were able to be managed at that site due to the advice of the Poisons Information Centre, thus substantially limiting unnecessary hospital attendances and conferring considerable health care savings.

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