

Poisons Information Helpline of the Western Cape (PIHWC) - Annual Review 2019

CONTENTS

1. Introduction
2. Structure of the PIHWC
3. PIHWC Data Summary - 2019
4. Conclusions
5. Recommendations

INTRODUCTION

South Africa has three Poison Information Centers (PICs), the main two PICs being at Red Cross War Memorial Children's Hospital (RCWMCH) and Tygerberg Hospital (TBH).

The roles of PICs are to provide toxicological information and advice, mainly through a 24/7 telephone service; to ensure optimal and cost-effective management of poisoned patients; and to reduce healthcare costs by identifying which patients can be safely managed at the appropriate level of care (e.g., at home).

PICs also develop and maintain repositories of data, both toxicological (the AfriTox database) and for poisoning enquiries (TeleLog database). Furthermore, they are involved in training health professionals; making contributions to Public health; monitoring epidemiology of poisonings; toxicovigilance; and engaging in poisons prevention activities, sound chemicals management and chemical incident preparedness.

In 2015, the Red Cross War Memorial Children's Hospital PIC (RXHPIC) and the Tygerberg Hospital PIC (TPIC) combined their telephone services to form the Poison Information Helpline of the Western Cape (PIHWC) staffed by doctors, pharmacists and scientists.

STRUCTURE OF THE PIHWC

The PIHWC provides a 24-hour, 365 days a year, consultant-supported clinical toxicology advice service to assist the public in assessing a poisoning exposure, as well as healthcare workers in their diagnosis and management of poisoned patients. The PIHWC uses a single national telephone number (0861 555 777), a Smart Access service provided by Telkom.

The primary source of information provided by the PIHWC is the poisons database, AfriTox (www.afritox.co.za), a unique South African poisons information database, developed over the last 40 years at the RXHPIC, and containing local information on over 40 000 potential poisons and their treatments (Stephen, 2019). It is available as an on-line or downloadable application, without charge to all state facilities that register for it, as well as to private facilities by subscription. Currently, approximately 60 hospitals are using AfriTox in South Africa for patient management. All fees generated are used directly for the hosting, IT development and maintenance costs for AfriTox.

Calls to the PIHWC are recorded in the TeleLog, a real-time database collecting epidemiological data concerning poisons exposures. The TeleLog database is hosted on a central server, allowing simultaneous access by other SPIs managing a particular patient. This also allows easy collation of poisons call data and surveillance of the patterns of enquiries received. The TeleLog contains details of over 73,000 telephone enquiries made to the PIHWC since June 2015, making it an invaluable resource for studying the patterns and clinical features of different types of poisoning in South Africa.

The clinical information recorded in the TeleLog can also help the treatment of subsequent similar cases and is used to refine the management advice contained in AfriTox. Data from TeleLog can also be used for studying the epidemiology of poisoning as reported to the PIHWC.

The two PICs providing the PIHWC are based within tertiary level hospitals (RCWMCH and TBH) and associated with their respective universities (Department of Paediatrics, University of Cape Town and Clinical Pharmacology, Stellenbosch University). Apart from the PIHWC, the focus of the RXHPIC is on the editing and production of the AfriTox database, and the focus of the TPIC is academic, particularly with the recent launch of the PGDip in Medical Toxicology.

The two PICs share equally the taking of telephone enquiries during the working day by the permanent PIC staff, and the after-hours service is covered by the PIC staff, as well as sessional pharmacists and medical registrars in Clinical Pharmacology. All calls are managed by specialists in poisons information (SPIs). SPIs may have a medical, pharmacy or scientific background, and have toxicology experience or hold postgraduate qualifications in toxicology.

The PIHWC also has 24-hour consultant support available to assist the pharmacist SPIs with the assessment and management of more seriously unwell patients. As the PIHWC receives many enquiries about children and from emergency departments, this support has some expertise in paediatrics and emergency medicine.

To ensure a common and evidence-based approach to the clinical management of poisoning, all SPIs are invited to attend a weekly Toxicology meeting which provides an opportunity for clinicians and SPIs to discuss the management of complex clinical cases, present updates on current topics and to discuss and governance issues.

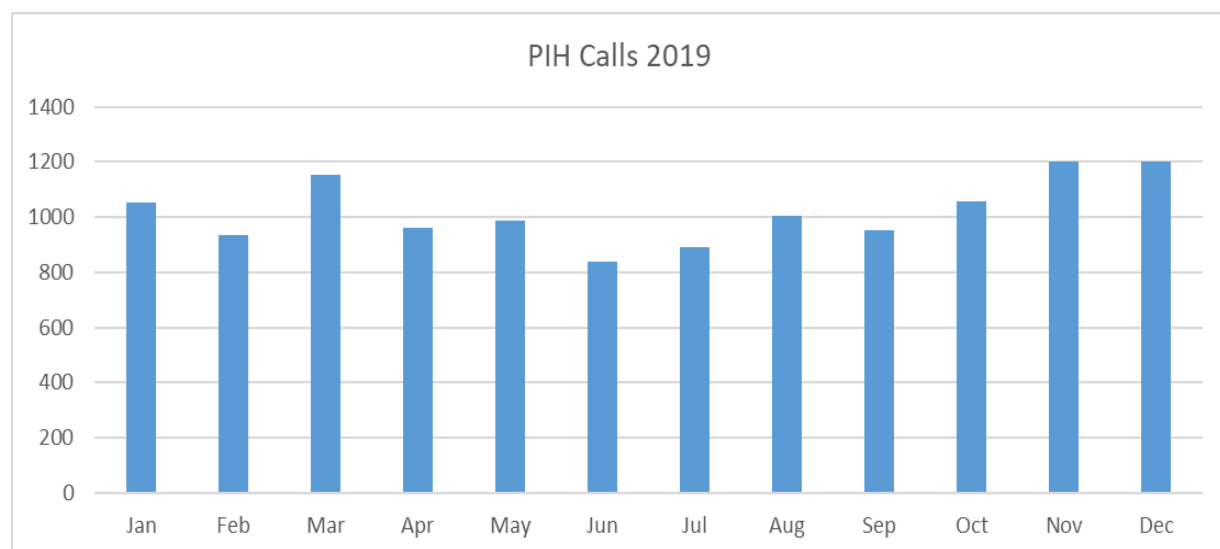
PIHWC DATA SUMMARY - 2019

There were 14,831 telephone enquiries received via the national PIHWC number (0861 555 777) in 2019. Of these calls, 12,236 (82.5%) were directly related to a poisoning incident, 964 (6.5%) were general poisons information calls, and 1,630 (11.0%) were not poison-related at all.

For the purposes of this review, non-patient related telephone enquiries have been excluded leaving a total of 12,236 patient-related telephone enquiries for further analysis within this data summary.

OVERVIEW OF PATIENT-RELATED CALLS

By month (N = 12,236)



On average, the PIHWC received 1,020 calls per month during 2019.

Caller Category & Patient Type (Human/Animal)

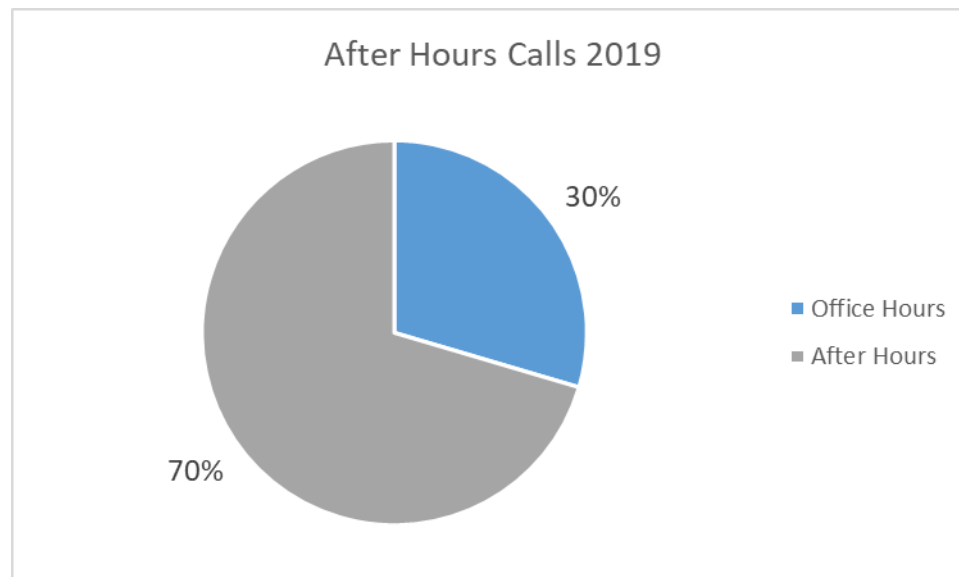
Calls were received from both medical personnel (67.9%) as well as the public (32.1%), and the vast majority concerned human poison exposures (98.3%).

Caller Category 2019	No. of calls	%
<i>Medical personnel</i>	8308	67.9
<i>Public</i>	3929	32.1

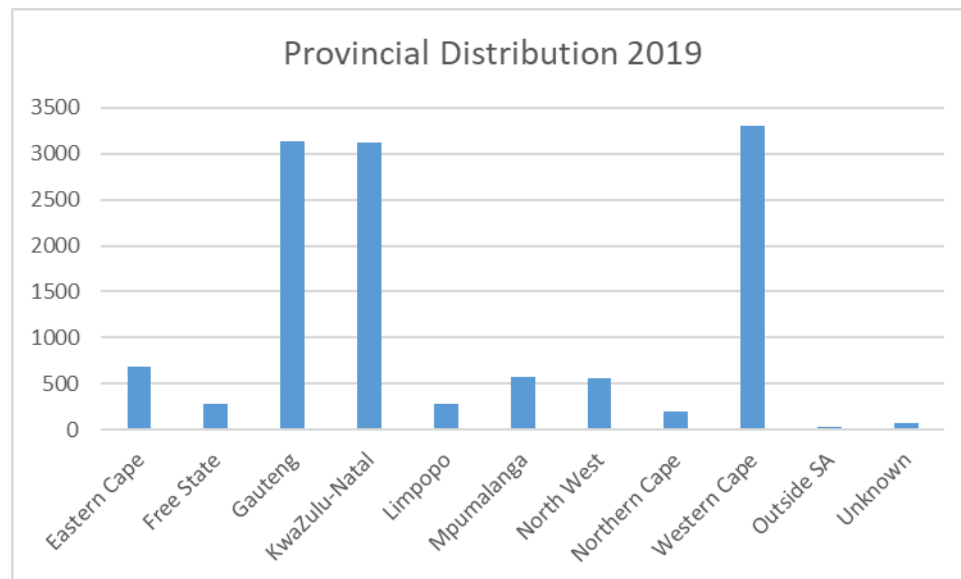
Patient Type 2019	No. of calls	%
<i>Human</i>	12029	98.3
<i>Bird</i>	2	0.0
<i>Buck</i>	1	0.0
<i>Cat</i>	10	0.1
<i>Cow</i>	2	0.0
<i>Dog</i>	190	1.6
<i>Donkey</i>	1	0.0
<i>Pig</i>	1	0.0
Grand Total	12236	100.0

After Hours

Most calls (70%) received on the PIHWC occurred after hours, i.e., between 16:30 and 08:30, over weekends and on public holidays.



Provincial Distribution

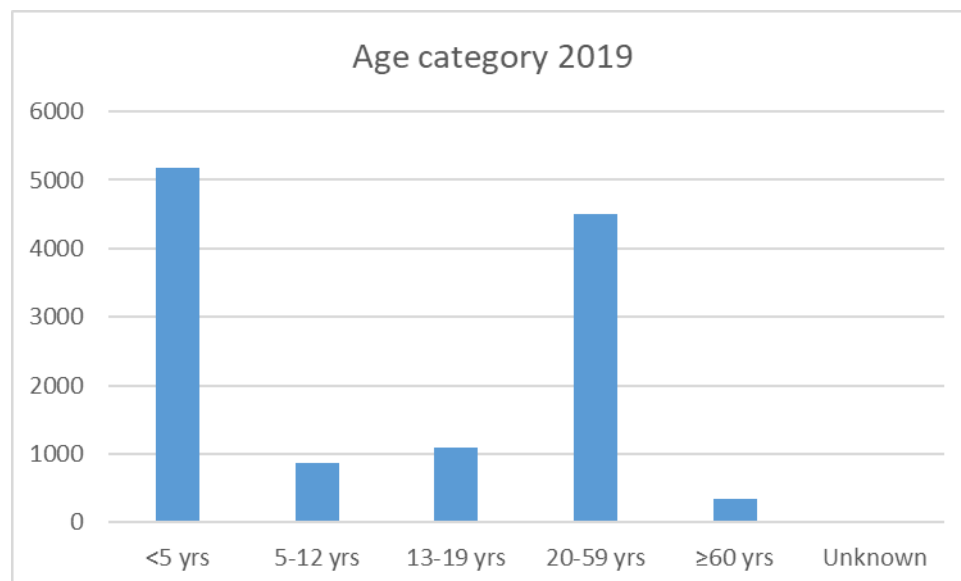


Approximately 78% of calls came from three provinces in South Africa, i.e., Western Cape (27.0%), Gauteng (25.6%), and KwaZulu-Natal (25.5%). The poor uptake from the remaining provinces is thought to be due to a lack of awareness of the PIHWC service.

Occasionally calls were received from outside of South Africa (0.3%), including Australia, Botswana, Indonesia, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Norway, Saudi-Arabia, Swaziland, United Kingdom, Zambia, and Zimbabwe.

PATIENT-RELATED CALLS - HUMAN (N = 12,011)

Age Category



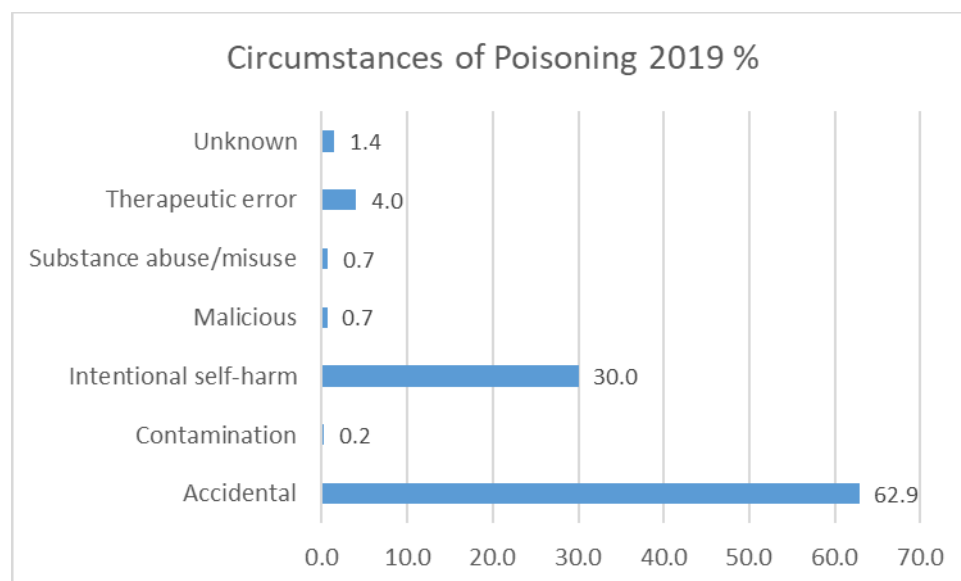
Approximately half the calls concerned children 12 years and under (50.4%), while adults between 20-59 years accounted for 37.5%.

Sex

	Sex	No.	%
	Female	6200	51.6
	Male	5740	47.8
	Unknown	71	0.6
	Grand Total	12011	100.0

Overall, exposures by sex were similar with a slight female preponderance, although the relative proportions between males and females varied by age. For children under 13 years, 55% were male, whereas for teenagers, 71.9% were female. Among adults, 56.5% were female.

Circumstances



Most poison exposures were accidental although 30.0% were due to self-harming behavior.

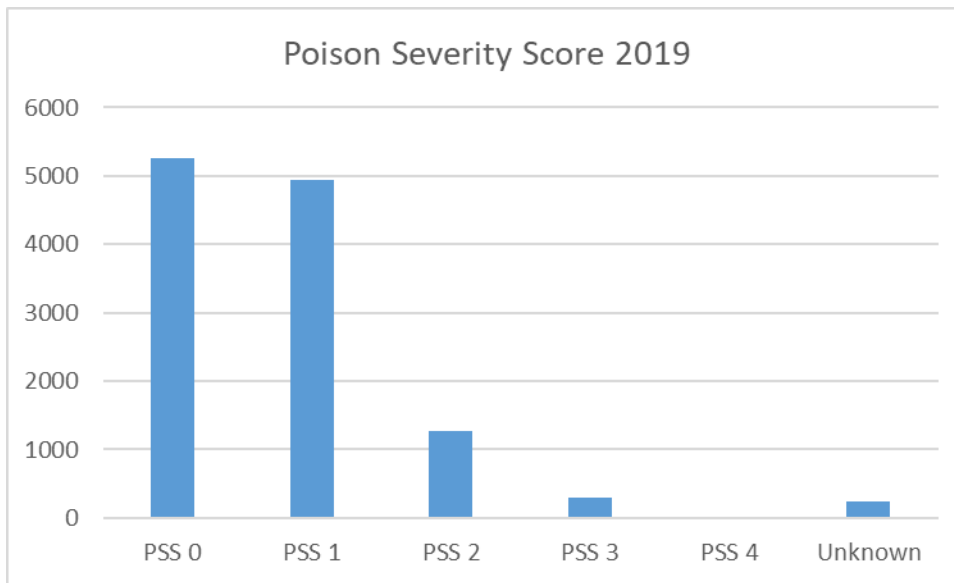
Poison Severity Score

Severity of poisoning was assessed using the Poison Severity Score¹, as follows:

- 0 = No symptoms or signs related to poisoning
- 1 = Mild, transient and spontaneously resolving symptoms or signs
- 2 = Pronounced or prolonged symptoms or signs
- 3 = Severe or life-threatening symptoms or signs
- 4 = Death

Most exposures resulted in no or minor symptoms, although over 1,500 patients had moderate to severe symptoms, and there were 7 deaths.

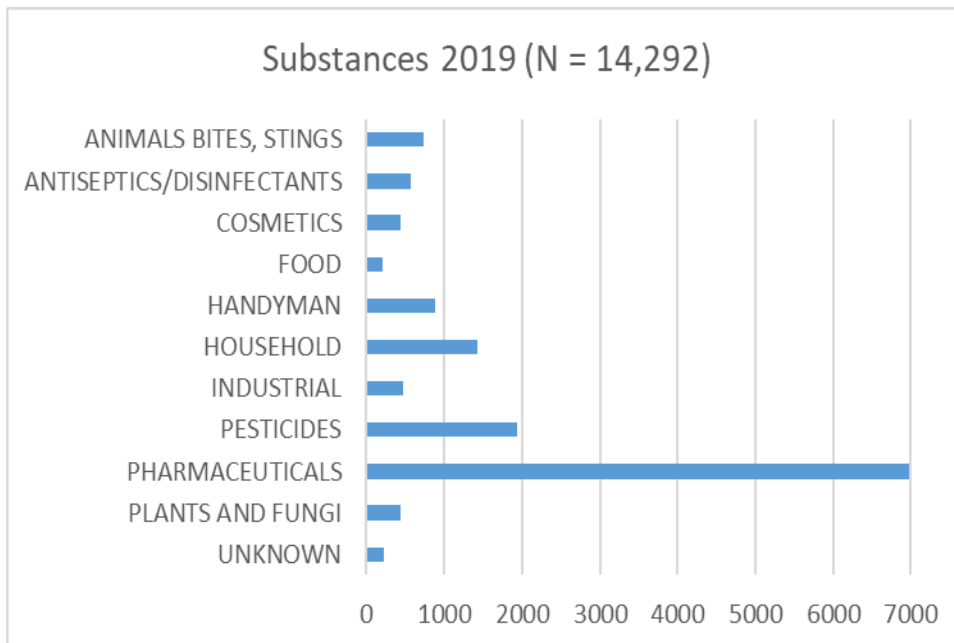
¹ Persson et al; Poisoning Severity Score. Grading of Acute Poisoning. Clinical Toxicology, 36(3), 205-213



Substances (N = 14,292)

Pharmaceuticals constituted the largest group of toxins, followed by **Pesticides** and **Household** products.

Further details are provided in the tables that follow.



Pharmaceuticals (N = 6,978)

Pharmaceuticals	N
<i>Psychiatric and neurological medicines</i>	1265
<i>Analgesics/anaesthetics and antipyretics</i>	1061
<i>Anti-infectives</i>	818
<i>Topicals (creams, drops, oral preps)</i>	615
<i>Vitamins, minerals, tonics</i>	574
<i>Cold and flu remedies, antihistamines</i>	526
<i>Cardiovascular medicines</i>	464
<i>Anticonvulsants</i>	317
<i>Sleeping pills</i>	242
<i>Hormones and hypoglycaemic agents</i>	241
<i>Bronchodilators</i>	119
<i>Substance abuse</i>	119
<i>Unknown drugs</i>	94
<i>Cough mixtures</i>	83
<i>Antacids and ulcer remedies</i>	72
<i>Antiemetics</i>	54
<i>Antispasmodics for GIT / GUT</i>	54
<i>Skeletal muscle relaxants</i>	52
<i>Lipid-lowering agents</i>	43
<i>Antirheumatics and gout agents</i>	25
<i>Laxatives</i>	25
<i>Other drugs</i>	21
<i>Slimming preparations</i>	21
<i>Anthelmintics</i>	20
<i>Anticoagulants</i>	19
<i>Antidiarrhoeal agents</i>	17
<i>Cytotoxics and immunosuppressants</i>	10
<i>Traditional medicines</i>	7
Grand Total	6978

Top 5 Medicines

<i>Medicine</i>	<i>N</i>	<i>%</i>
<i>Paracetamol</i>	386	5.5
<i>Antiviral Agents - Reverse Transcriptase Inhibitors</i>	376	5.4
<i>Chlorpheniramine maleate</i>	221	3.2
<i>Iron Compounds</i>	204	2.9
<i>Amitriptyline hydrochloride</i>	185	2.7

Pesticides (N = 1,930)

Top 5 Pesticides

<i>Pesticide</i>	<i>N</i>	<i>%</i>
<i>Anticoagulants - Coumarins and Indanediones</i>	321	16.6
<i>Pyrethroid Insecticides</i>	301	15.6
<i>Carbamate Insecticides</i>	247	12.8
<i>Organophosphates</i>	128	6.6
<i>Formamidine Insecticides</i>	75	3.9

Household Products (N = 1,418)

The most frequently reported products in this group were General household cleansing agents (26.2%), Bleach (24.8%) and Detergents for dish washing and laundry (15.7%).

The most common household chemicals reported are listed in the table below.

Top 5 Household

<i>Household</i>	<i>N</i>	<i>%</i>
<i>Chlorophors</i>	366	25.8
<i>Surfactants - Anionic</i>	247	17.4
<i>Surfactants - Cationic</i>	55	3.9
<i>Surfactants - Non-Ionic</i>	25	1.8
<i>Peroxides</i>	12	0.8

CONCLUSIONS

During 2019, the PIHWC continued to provide information and advice to the public and health professionals throughout South Africa about the assessment and management of poisoning/suspected poisoning on a 24-hour basis.

Apart from the PIHWC, poisons information was also provided via the offline and online AfriTox platform. It is important that the availability of AfriTox is strengthened so that most poisoning cases can be managed at the facility and only complex cases require telephone enquiries to the PIHWC.

Despite the critical and valuable work conducted by the PICs and the PIHWC, this service is under-prioritised at a national level. These services also require broader advocacy, in terms of the health and economic value they provide. The uniqueness and level of diagnosis and treatment advice that the AfriTox database provides is also underutilised in terms of its potential to reduce hospital admissions and improve patient management. As the PIHWC is staffed on a 24-hour basis it has the potential to provide service at a remote level to rural and under-serviced areas.

As the PIHWC requires resources, it is important to determine whether the costs can be justified through benefits provided by the service, such as avoidance of unnecessary hospital referrals and emergency department admissions, reduced lengths of stay, and improvements in the quality of treatment for admitted patients.

Worldwide research supports both the economic value and patient benefit of a national 24-hour poisons information service.^{2, 3}

RECOMMENDATIONS

- Explore the establishment of the PIHWC as a national service, in accordance with International Health Regulations (2005)⁴, to ensure access and the best use of resources for all people in South Africa.
- Ensure that the information and management advice provided by AfriTox is current and evidence-based, for patient safety, and to maintain the confidence of healthcare professionals.
- Expand the reach of the PIHWC to the under-reached provinces within South Africa.
- Maintain data collection to monitor episodes of poisoning of public health importance and to share poisoning epidemiology data with the responsible government departments.

² Elamin MEMO, James DA, Holmes P, Jackson G, Thompson JP, Sandilands EA, et al. Reductions in emergency department referrals from primary care after use of the UK National Poisons Information Service. *Clin Toxicol* 2017; 55: 481-2.

³ Value of Poison Center System - LEWIN REPORT 2012

⁴ <https://www.who.int/publications/i/item/9789241580410>