



Poisons Information Services & Poisoning Trends in South Africa

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Mittah Seperepere Convention Centre, Kimberley

Chemicals Awareness Track, 19 September 2019





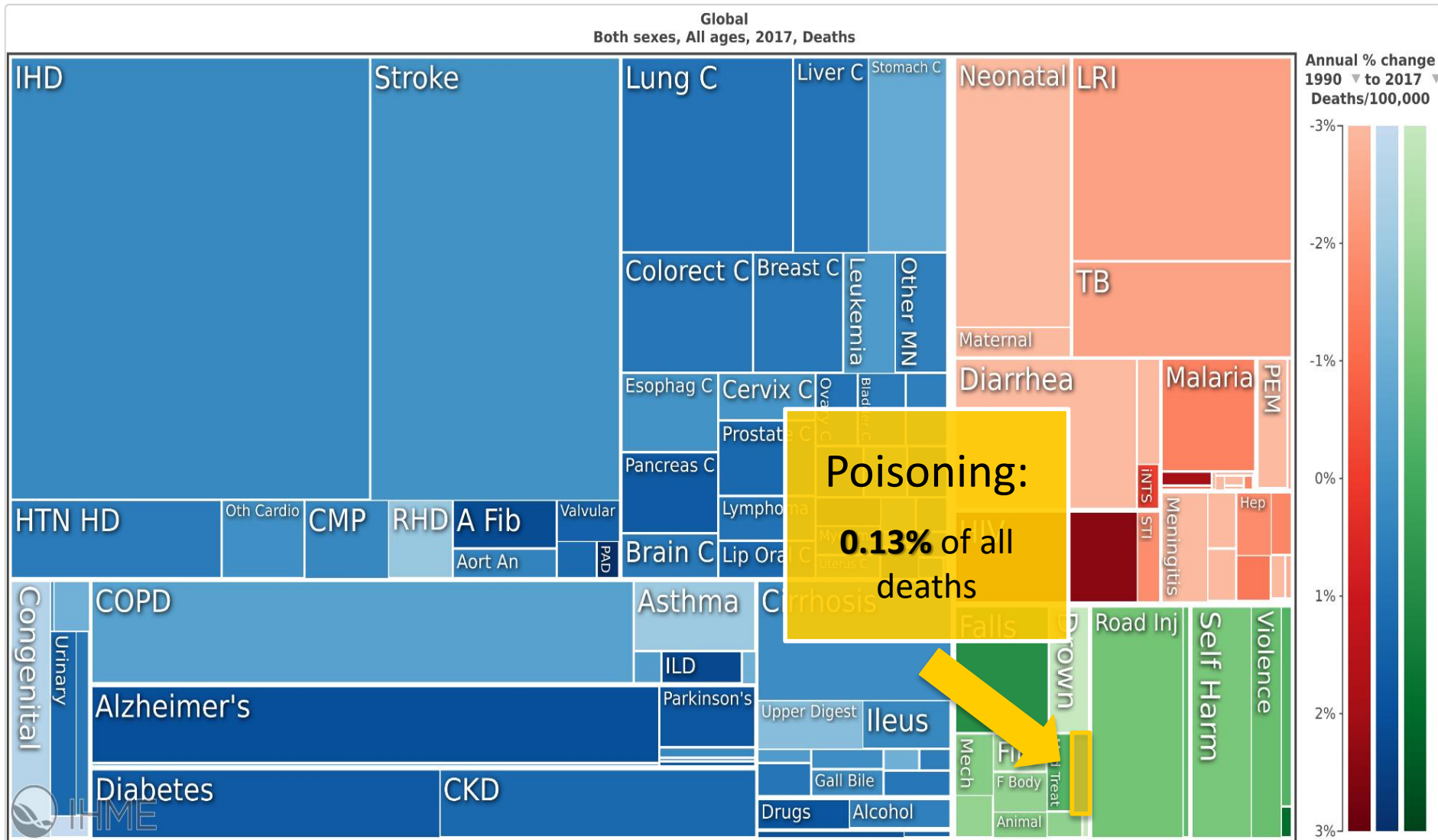
Overview

1. Background
2. South African Context
3. Poisons Information Helpline Data
 - 'Household' chemicals
 - Pesticides
 - Industrial chemicals
4. Animal poisoning
5. Conclusions



BACKGROUND

Global Burden of Disease 2017: Deaths - All Ages





International Programme on Chemical Safety

[IPCS Home](#)

[Health impacts of chemicals](#)

[Tools for assessing chemical risks](#)

[Poisons information, prevention and management](#)

[Chemical incidents and emergencies](#)

[Capacity building](#)

[Chemical risk assessment network](#)

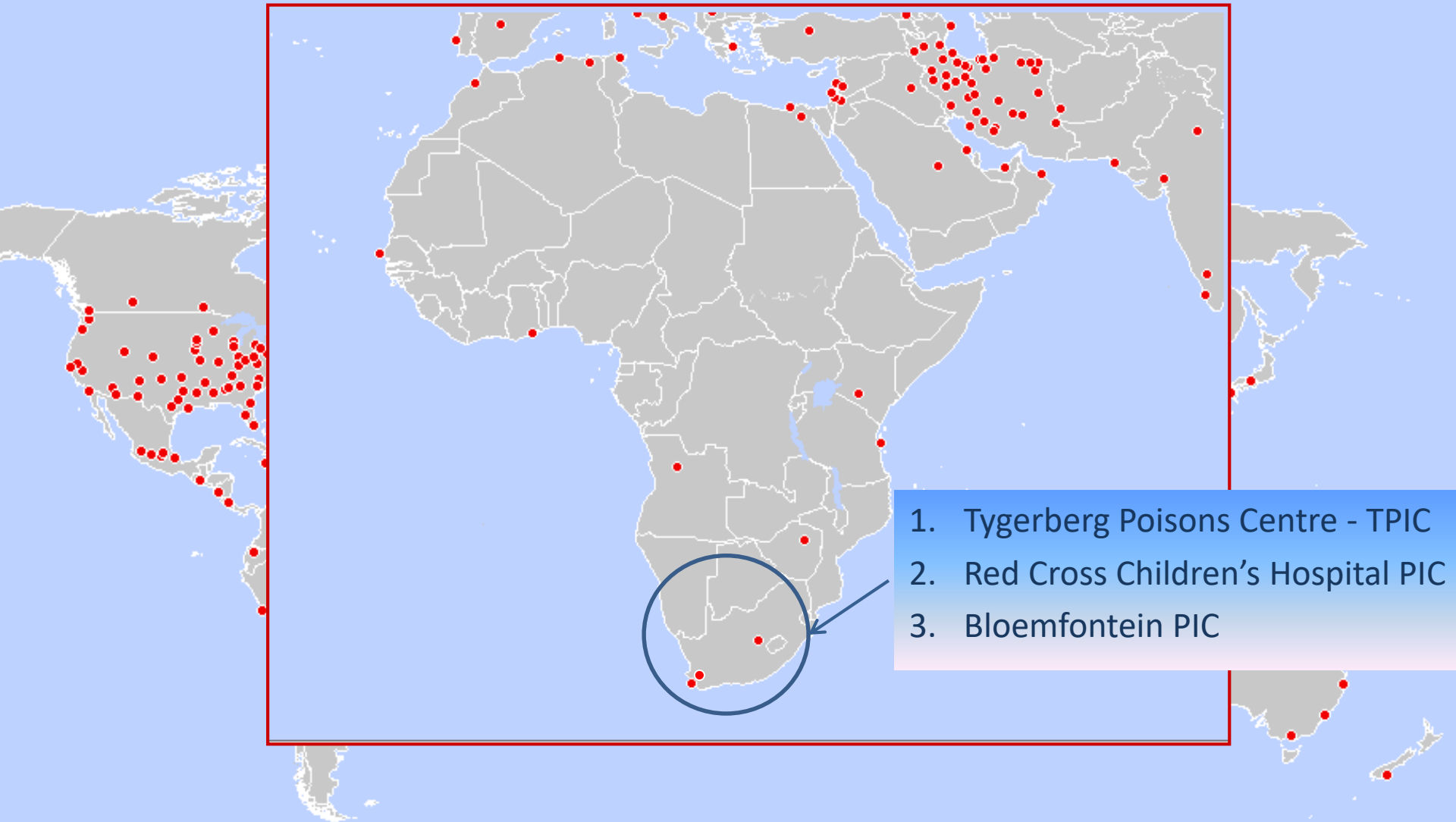
[Chemicals Road Map](#)

[Publications](#)





WHO Directory of PICs





WHO Roles of PICs

- Provide toxicological information and advice
- Repository of data
 - Toxicological
 - poisoning enquiries
- Analytical laboratory service
- Clinical treatment unit
- Toxicovigilance
- Prevention
- Education and Training
- Research
- Chemical incident preparedness and response





What is a Poisons Information Centre or PIC?

“A poisons centre is a specialised unit that ***advises on, and assists with, the prevention, diagnosis and management of poisoning.***

The structure and function of poisons centres varies around the world, however, at a minimum a poisons centre is ***an information service.*** Some poisons centres may also include a toxicology laboratory and/or a clinical treatment unit.”

- World Health Organisation -



SOUTH AFRICAN CONTEXT

Poison Centre Services in South Africa

Poisons Centre

Clinical Care

Public Health

Chemicals Management

Clinical care

- Diagnosis and management of poisoning
- Databases of products and substances
- Training to health professionals

Public health

- Epidemiology of poisonings (data)
- Toxicovigilance
- Poisons prevention activities

Sound chemicals management

- Chemical incident preparedness



TPIC & RCWMCH Poison Centres



Tygerberg PIC

- Stellenbosch University
- WC DOH: *3 pharmacists*
- Biological toxins
- Public awareness



RCWMCH PIC

- University of Cape Town
- WC DOH: *2 doctors, 2 pharmacists, 1 admin*
- AfriTox
- Electronic data collection
 - TeleLog

Telephone Service
= Poisons Information Helpline
of the Western Cape

Poisons Information Helpline

- Collaboration
 - TPIC & RXH PIC in 2015
- 24/7 poisons service to
 - public
 - health professionals
- After-hours staff funded by WC DOH
- TeleLog data collection
 - real time

What to do when poisoned?



0861 555 777
POISONS
INFORMATION
HELPLINE

- Do not give milk or force vomiting
- Rinse mouth with water
- Wash poison off the skin and rinse eyes with water
- **Call 0861 555 777** any time, day or night, every day of the year

Produced by: environmentalhealth@uct.ac.za



Western Cape
Government

**POISONS INFORMATION
HELPLINE**

0861 555 777

Supported by the
Western Cape Government



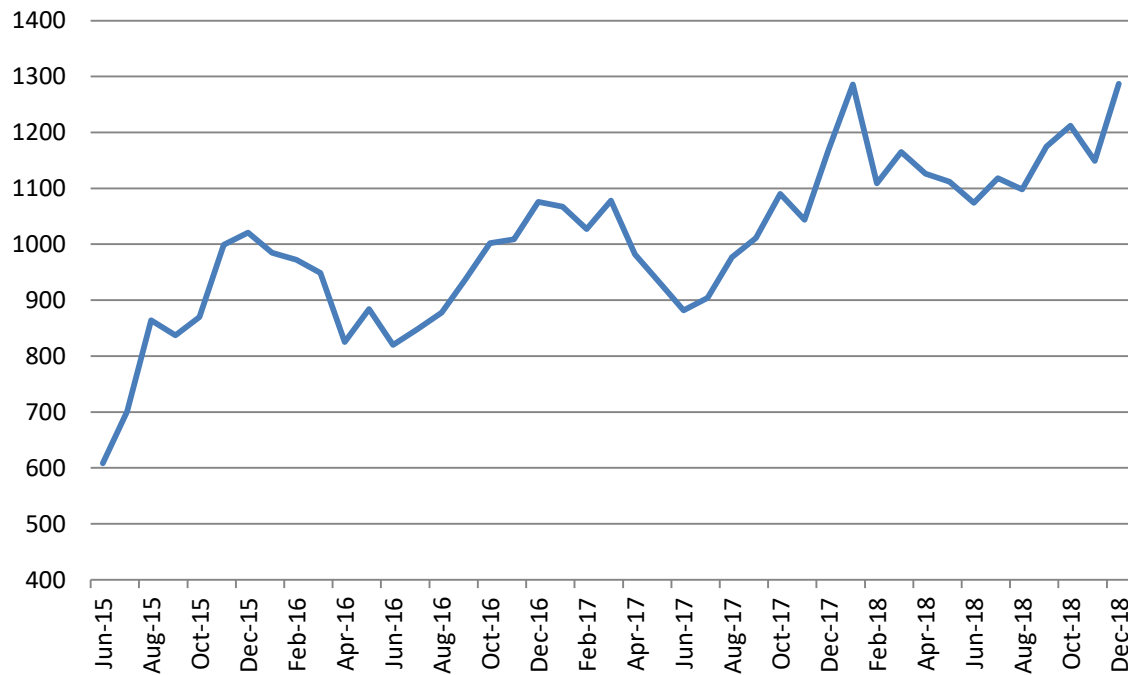
24/7

For
**Members of the Public
and Health Practitioners**
throughout South Africa
and beyond!

**POISONS INFORMATION HELPLINE
DATA**

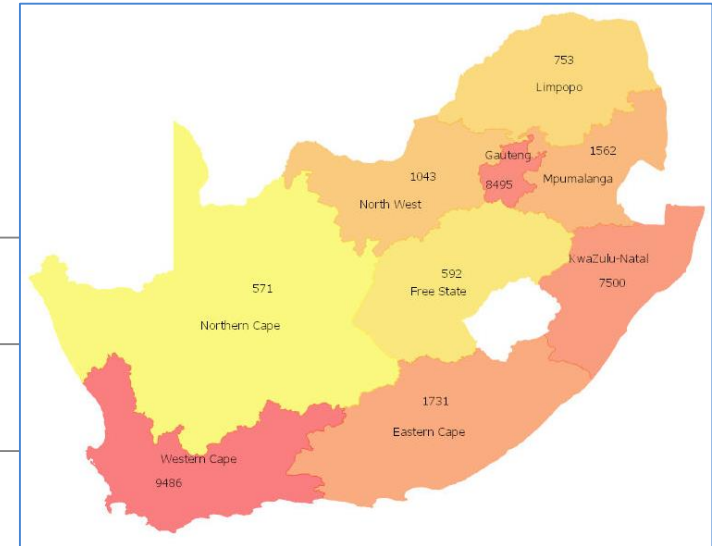
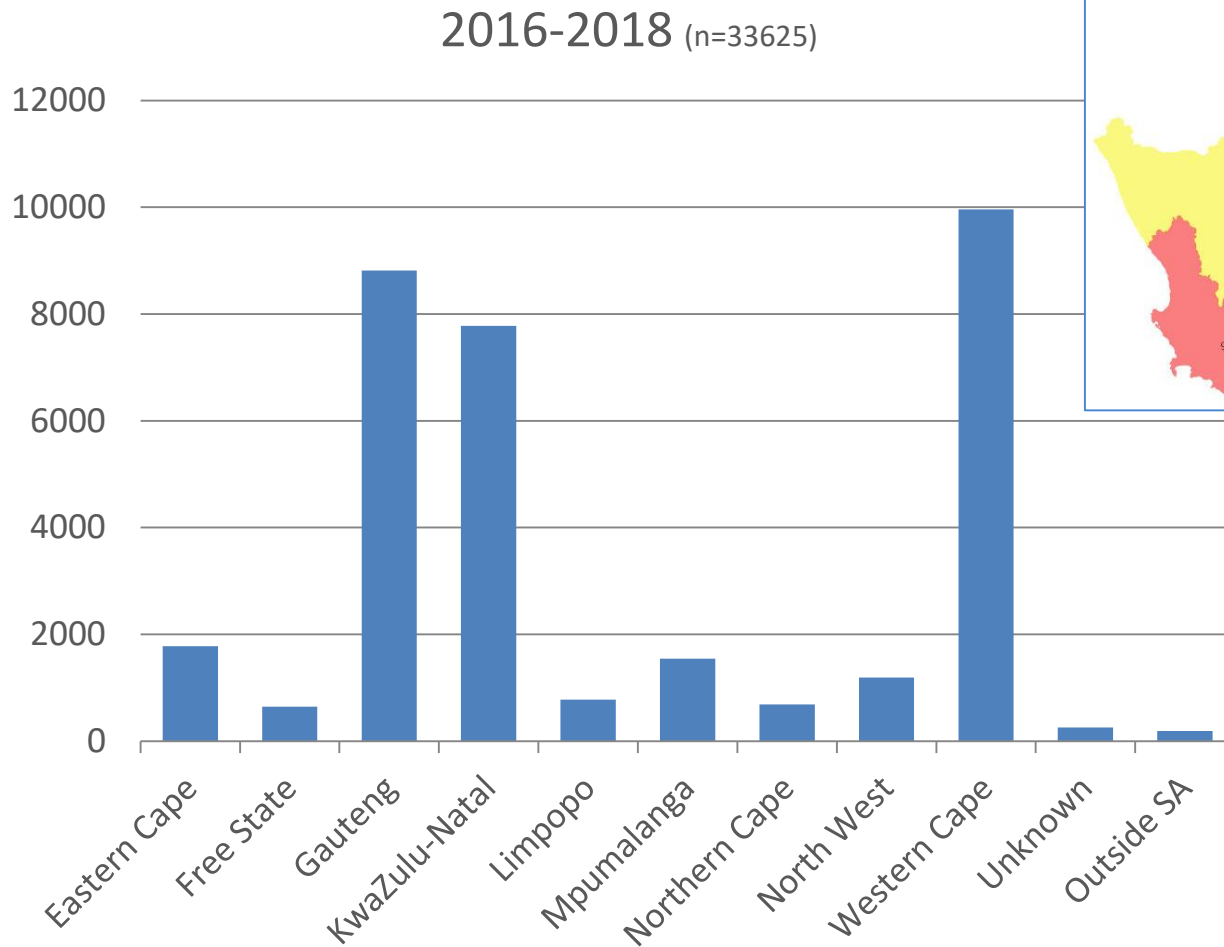
How many calls?

Year	Monthly Average	Total Calls
2015 (7 months)	843	5 900
2016	932	11 186
2017	1 014	12 163
2018	1 159	13 911



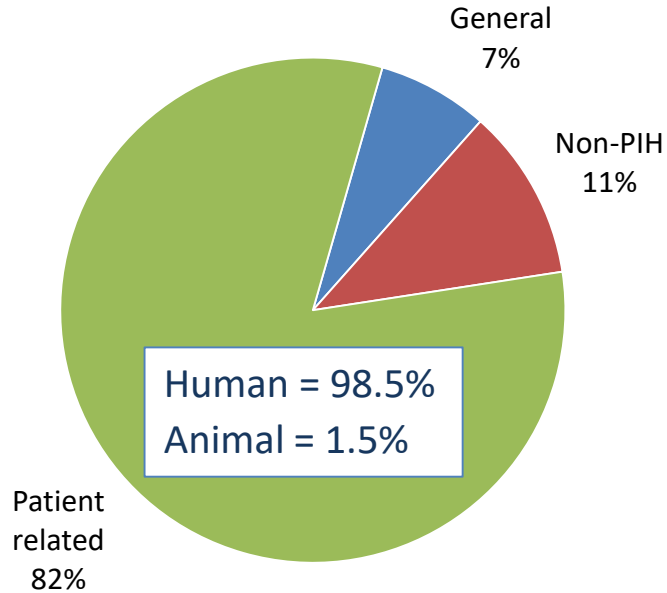
**2019: Average calls per month
Month = 1 192**

Geographical location

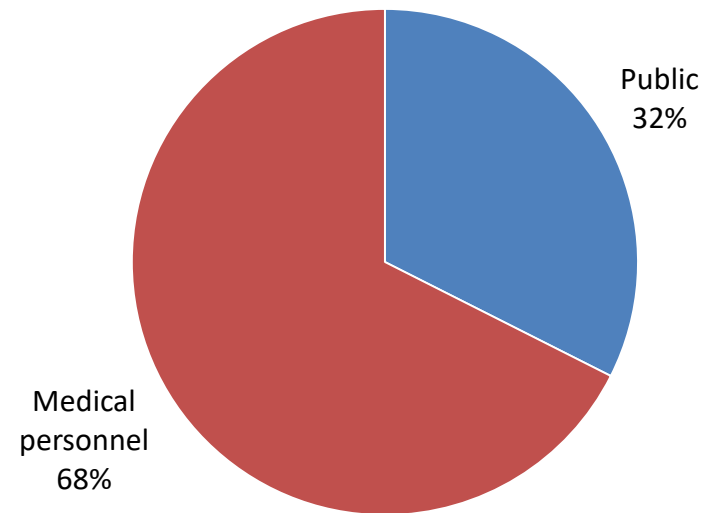


Who calls? Why?

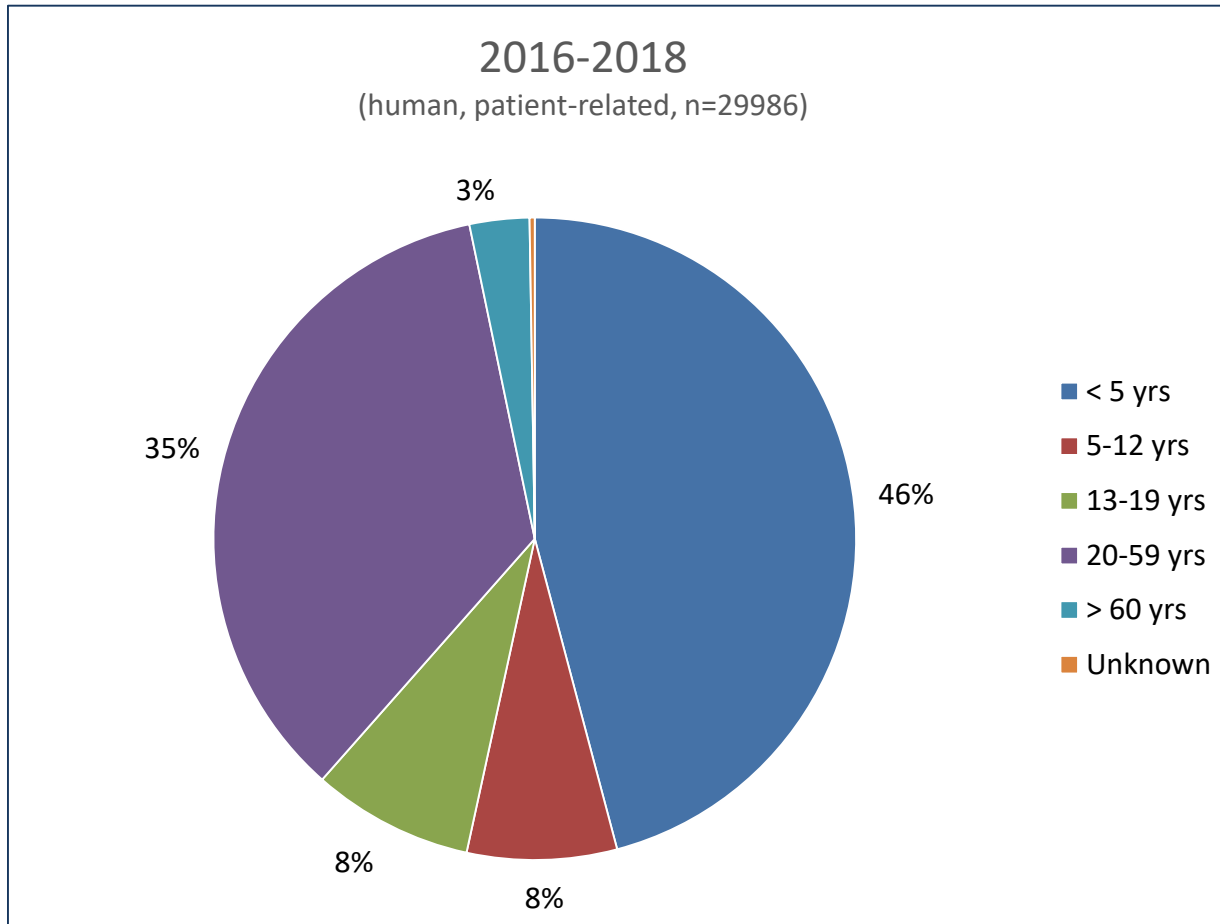
Category of Call: 2016-2018
(n=37260)



Category of Caller: 2016-2018
(n=30506)

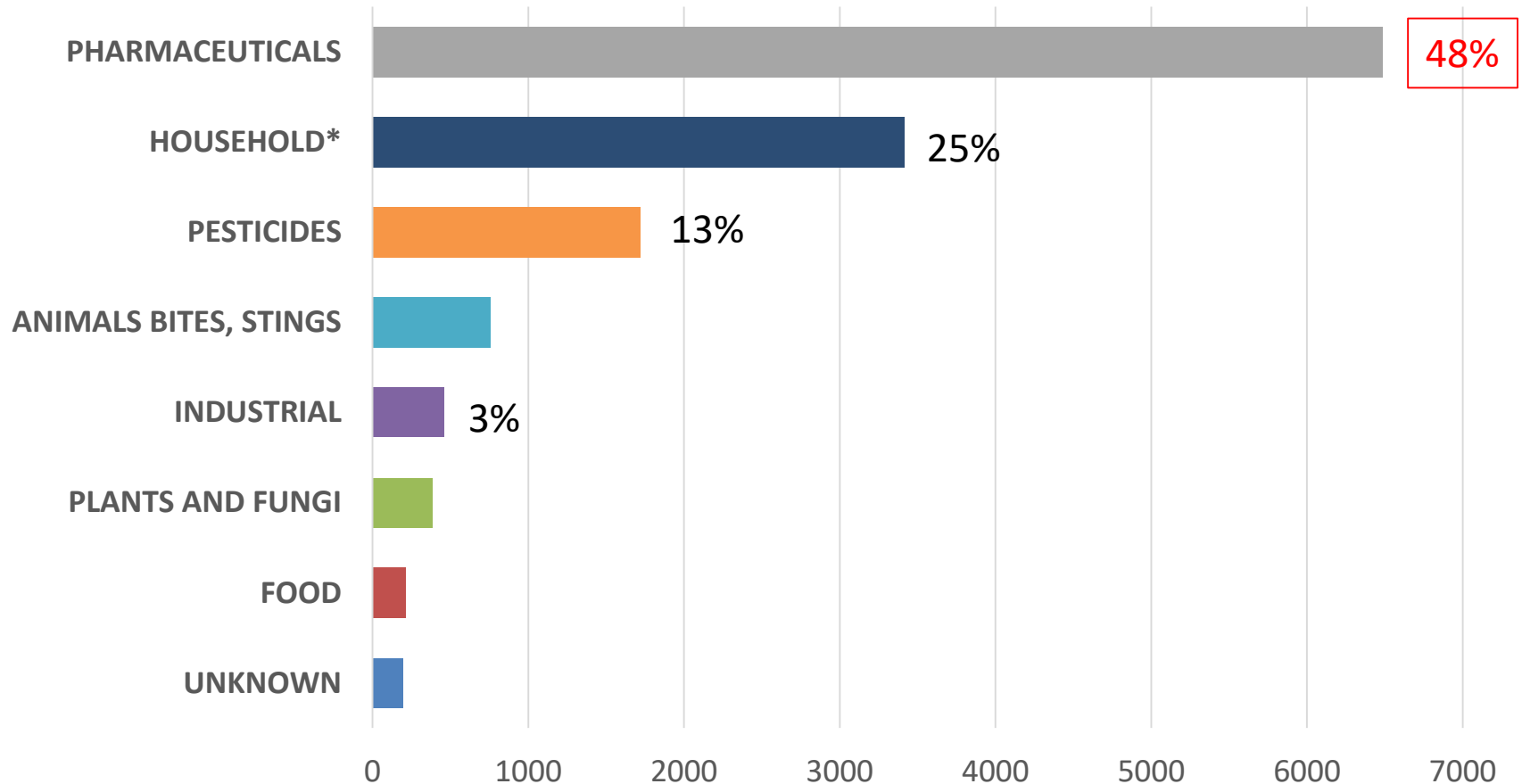


Patient Age



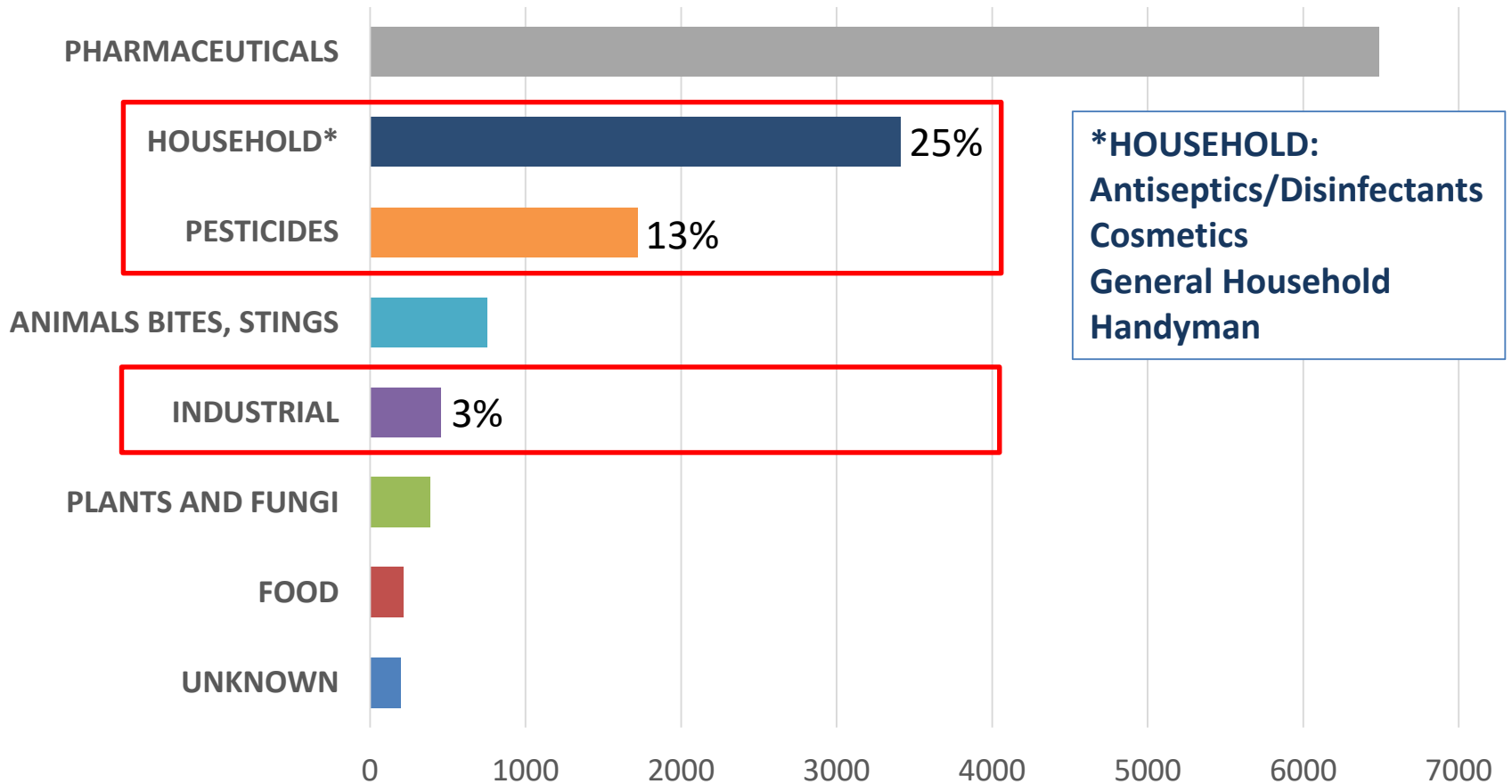
Exposure in 2018 to...

2018: All Patient-related Calls (n=13636)



Exposure in 2018 to...

2018: All Calls (n=13636)



Severity

Poison Severity Score (PSS)	Pesticides % (No.)	Pharmaceuticals % (No.)	Household % (No.)	Handyman % (No.)	Envenomations % (No.)	TOTAL % (No.)
PSS 0&1 (Asymptomatic or Mild)	80.5 (696)	73.2 (2185)	87.4 (404)	81.6 (305)	75.5 (391)	76.5 (3981)
PSS 2 (Moderate)	12.6 (109)	20.2 (604)	8.7 (40)	12.8 (48)	19.5 (101)	17.3 (902)
PSS 3 (Severe)	4.4 (38)	5.0 (150)	1.7 (8)	3.7 (14)	2.9 (15)	4.3 (225)
PSS 4 (Death)	0.5 (4)	0.1 (2)	0	0	0.2 (1)	0.1 (7)
Unknown	2.2 (18)	1.5 (45)	2.2 (10)	1.8 (7)	1.9 (10)	1.7 (90)
TOTAL	100.0	100	100	100	100	100 (5205)

Deaths = 7

4 Pesticides

(Aluminium phosphide, Formamidine Insecticides, Organophosphates, Unknown)

2 Pharmaceuticals

(Antominy, Colchicine)

1 Envenomation

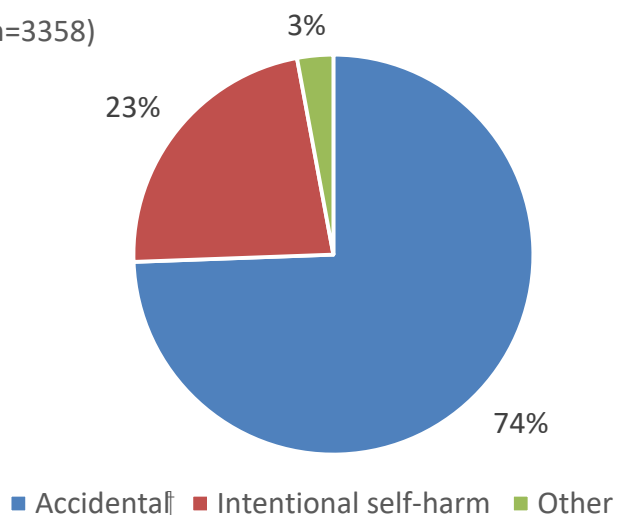
(Black mamba bite - Dendroaspis polylepis)

Household Chemicals: 2018

	ALL	SYMPTOMS	%
ANTISEPTICS & DISINFECTANTS	531	289	54.4
COSMETICS	496	193	38.9
HANDYMAN	967	531	54.9
HOUSEHOLD	1420	695	48.9
TOTAL	3414	1708	50.0

Household Chemicals: 2018 calls

(n=3358)



ANTISEPTICS & DISINFECTANTS	No.
Skin or wound antiseptics	189
<i>Potassium permanganate</i>	106
Environmental disinfectants	97
<i>Phenols</i>	71

HOUSEHOLD	No.
Bleach	173
<i>Sodium hypochlorite</i>	133
General household cleansing agents	167
<i>Ethanol (Methylated Spirits)</i>	50
<i>Alkylbenzene sulphonate</i>	46
Detergents for dish washing and laundry	92
<i>Surfactants - Anionic</i>	50

COSMETICS	No.
Hair dyes, bleaches, straighteners	61
Nail products	35
<i>Acetone</i>	19

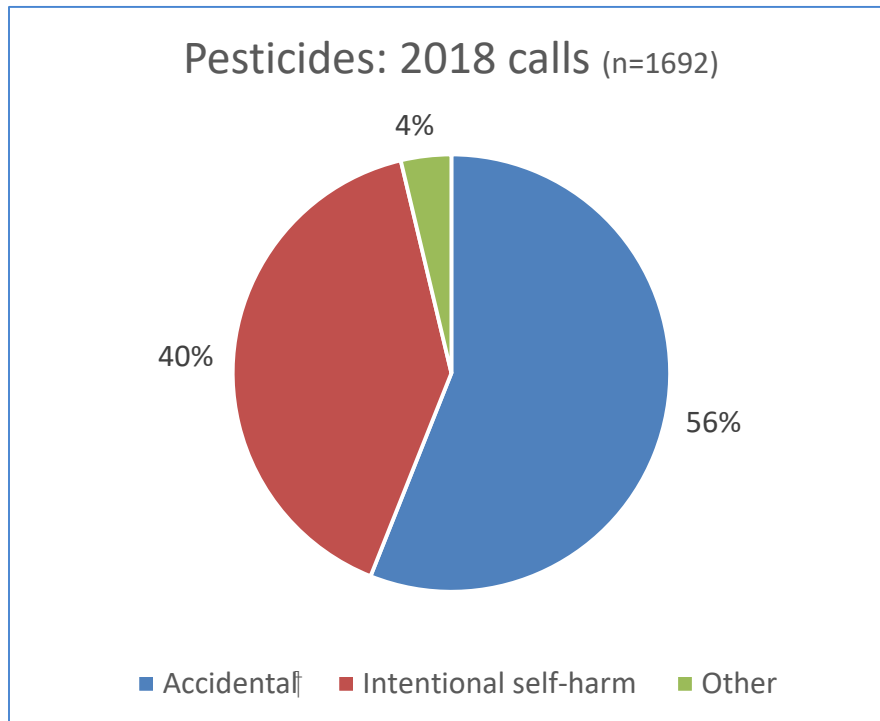
HANDYMAN	No.
Paint thinners, stripper	118
<i>Medium aliphatic petroleum solvent</i>	99
Paraffin	105
Firelighters, fuels	96
<i>Gasoline</i>	36
<i>Ethanol (Methylated Spirits)</i>	22
Oils and lubricants	94
<i>Glycols - Ethylene Glycol</i>	34

Top Single Chemicals - Household

- Sodium hypochlorite 133
- Potassium permanganate 106
- Paraffin 105
- Med aliphatic petr solvent 99

Pesticides: 2018

	ALL	SYMPTOMS	%
HERBICIDES, FUNGICIDES, OTHER	182	129	70.9
INSECTICIDES & RODENTICIDES	1540	789	51.2
TOTAL	1722	918	53.3



PESTICIDE	No.
Pyrethroids - I & II	166
<i>Cypermethrin</i>	39
<i>Deltamethrin</i>	30
<i>Flumethrin</i>	16
<i>Unspecified</i>	17
<i>alpha-Cypermethrin</i>	12
<i>lambda-Cyhalothrin</i>	11
Carbamates	118
<i>Carbaryl</i>	65
<i>Aldicarb</i>	10

	SEVERE	DEATHS
Formamidine (Amitraz)	26	2
Organophosphates	24	1
Unknown	16	1
Aluminium phosphide	2	1

Organophosphates	112
<i>Unspecified</i>	67
<i>Diazinon</i>	13
<i>Mercaptothion</i>	10
Formamidine	72
<i>Amitraz</i>	39
Herbicides	71
<i>Glyphosate</i>	34
<i>Paraquats & Diquats</i>	15
Anticoagulants	63
<i>Brodifacoum</i>	35

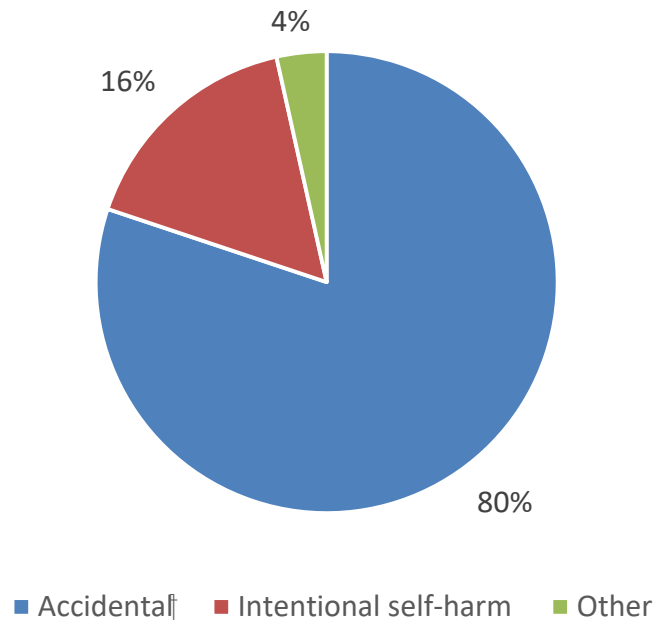
Category of call	Caller category	Age group	Plant (s)
Patient related	Medical personnel		
Patient related	Medical personnel		Preeglon
Patient related	Medical personnel	15-19 yrs	Gramoxone
Patient related	Medical personnel	20-59 yrs	Paraquat
Patient related	Medical personnel	5-<6 yrs	unknown plant (or paraquat)

7 Paraquat deaths: 2015-19

Industrial Chemicals: 2018

	ALL	SYMPTOMS	%
INDUSTRIAL	459	203	44.2
TOTAL	459	203	44.2

Industrial Chemicals: 2018 calls (n=458)



	ALL	SYMPTOMS	%
Desiccant	127	14	11.0
Batteries and their ingredients	78	37	47.4
Other industrial products	76	54	71.1
Petroleum products, solvents	49	34	69.4
Anti-freeze	36	22	61.1
Mercury, lead and heavy metals	29	5	17.2
Tear gas and riot control agents	20	18	90.0
Ice bricks and freezer pack fillers	19	2	10.5
Cement, adhesives and fillers	13	5	38.5
Carbon monoxide, exhaust fumes	8	8	100.0
TOTAL	459	203	44.2

Top Single Chemicals - Industrial

- Ethylene Glycol 21
- Sulfuric acid 20
- Benzene 10

ANIMAL POISONINGS DATA



Animal Poisoning Data

- GRIFFON POISON INFORMATION CENTRE: Dr Gerhard Verdoorn
- Established in 2003
 - wildlife poisoning reporting and incident management
 - currently for human, domestic animal, wildlife and environmental exposure, envenomation and disaster management
- Self-funded operation
 - information resources, communication costs (mobile phone supplied by Nokia Mobile Devices)
- 24/7 service
 - general public, health professionals, veterinary profession, industry, law enforcement agencies and regulators via calls, text messages, e-mails
- Average of 830 enquiries per month
 - only about 15% (100-125) are exposure incidents*, few envenomation incidents, rest is technical advice

***PIH has > 950 exposure calls per month (98.5% are human exposures)**

Dogs, Cats, Predators

DOGS	No.
Aldicarb (deliberate) (93% F)	>100
Bromadiolone (misuse) (near F)	>30
Brodifacoum (misuse) (near F & F)	>20
Coumatetralyl (misuse)	>10
Hydramethylnon (misuse)	>10
Fipronil (misuse)	>10
Sodiumcacodylate (misuse) (no S&S)	>10

CATS	No.
Aldicarb (deliberate)	>3
Unknown (deliberate)	>3

Aldicarb crisis!

PREDATORS	No.
Aldicarb (all over) (incl. canned predators)	Many
Terbufos (FS and NW) (canned predators)	3
Carbofuran (EC, MPU, KZN)	Many
Sodiummonofluoroacetate (Karoo)	Many
Brodifacoum (MPU)	Several

CONCLUSION

In Summary

- Poisons services in South Africa
- Valuable 'real-time' data source
 - 2018
 - Household (1708): bleach, KMnO_4 , paraffin
 - Pesticides (918): amitraz, organophosphates
 - Industrial (203): ethylene glycol

– Surveillance

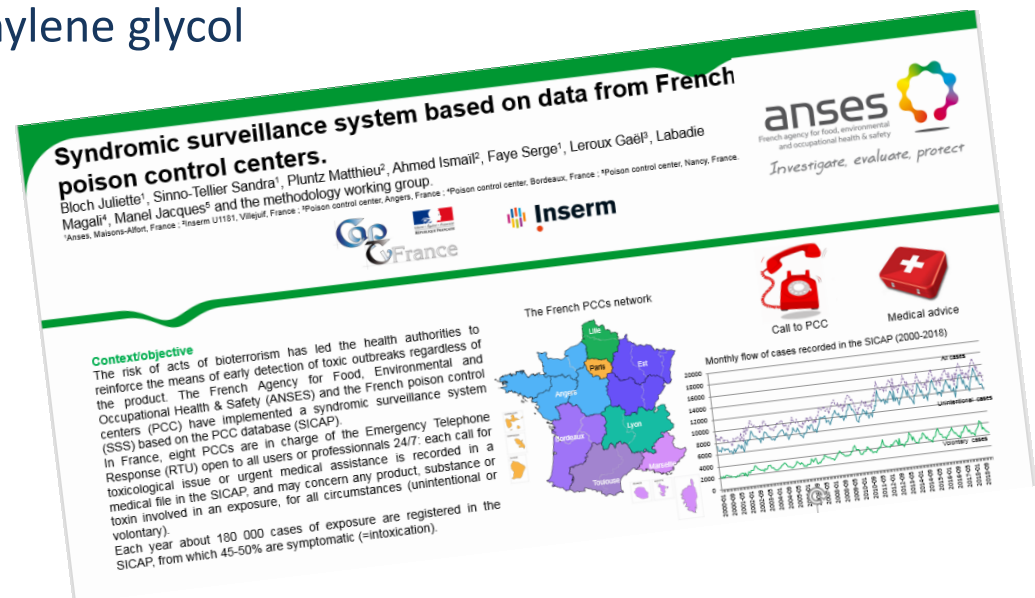
- Limitations

– Calls only

– Provincial bias

– Under represented

- Best we have!!



THANK YOU