

## DISCUSSION DIGEST

## The Roles and Challenges of Poison Information Centres in Africa in Addressing Pesticide Poisoning

Issue 10 of 2023  
Discussion: 28 Sep 2023

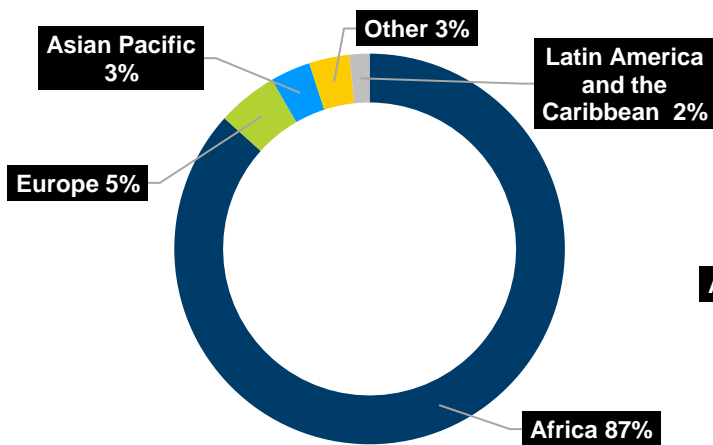
This document is a summary of the University of Cape Town's Division of Environmental Health's Pesticide Community of Practice discussion held on 28 September 2023, titled: "The Roles and Challenges of Poison Information Centres in Africa in Addressing Pesticide Poisoning". This digest presents the issues and points raised and the information shared by participants in response to three questions prepared by the presenters:

- **Dr Cindy Stephen** (Poisons Information Centre, Red Cross War Memorial Children's Hospital)
- **Chilekwa Mibenge** (Ministry of Health, Zambia)

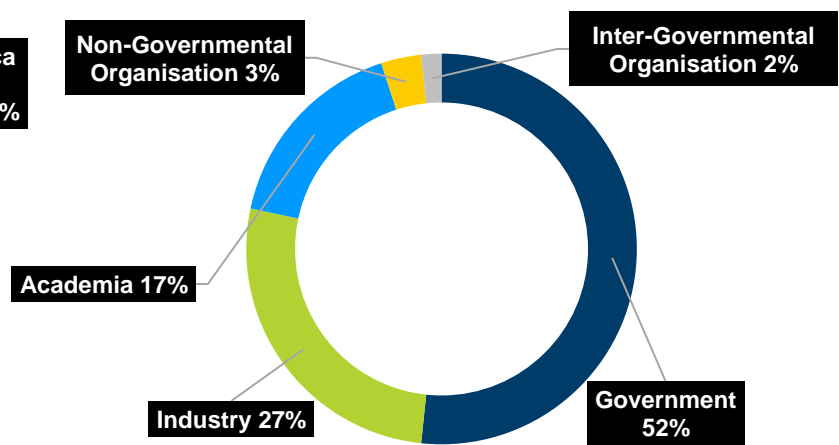
During this discussion, Cindy provided an overview of poisoning cases globally, and illustrated the importance of Poisons Information Centres (PICs). She also described various PIC models, outlined the World Health Organisation's guidelines for establishing PICs, and what PICs can offer in tackling the problem of pesticide poisoning cases. Chilekwa gave an overview of a prevalence survey of poisoning cases in Zambia including challenges in tackling these, highlighting some pesticides that are commonly implicated, and explaining the need for a PIC. View the presentation slides [here](#), and the recording [here](#).

### Breakdown of Discussion Participant Demographics

#### Regional Representation



#### Sectoral Representation



Total = 60 participants live, 3 responses posted prior



## PRESENTERS



**Dr Cindy Stephen**



**Chilekwa Mibenge**

**Dr Cindy Stephen** is the director of the Poisons Information Centre (PIC) at Red Cross War Memorial Children's Hospital in Cape Town, South Africa. After completing her undergraduate degree in medicine at the University of Cape Town (UCT), she worked in Kwa-Zulu Natal for many years in the disciplines of Paediatrics and Child Health, with a focus on improving quality of care. In 2015, Cindy moved back to Cape Town to join the PIC. She has been involved in the further development of AfriTox, the electronic poisons information database used widely to treat poisoned patients throughout South Africa and further afield. She also oversees the collaborative Poisons Information Helpline Line service and database maintenance. Her interests include paediatric and environmental poisonings, particularly pesticide poisoning reduction.

**Chilekwa Mibenge** holds a Master of Science in both Chemical Risk Management and Environmental Science. Her undergraduate degree was in environmental health, during which she conducted research on environmental pollution from the insecticide Dichlorodiphenyltrichloroethane (DDT), highlighting the lack of environmental safeguards during operations. She is employed as a Chief Environmental Health Officer under the Ministry of Health Headquarters (Zambia) and is responsible for pollution control, chemical management, occupational health, and environmental risk management. She has been working on health and environmental issues including the development of policy guidelines and regulations to facilitate smooth operations and practices in environmental health and provide legal advice on public health matters. She has worked closely with the Zambia Environmental Management Agency (ZEMA) and other key stakeholders on various projects regarding chemical management and pollution matters related to health. She has co-ordinated two projects with ZEMA, the African Chemical Observatory project and the Elimination of Lead from Paint project, both funded by the United Nations Environment Program, and has also been committed to establishing the Zambia Poison Information Centre.



**DISCLAIMER:** The information below represents the opinions of members, participating from different countries, expressed during the discussion, and shall not necessarily be taken to reflect the official opinion of the Division of Environmental Health, University of Cape Town, or the Swedish Chemical Agency.

**PRESENTED BELOW ARE THE THREE QUESTIONS AND RESULTING DISCUSSION INPUTS FROM PARTICIPANTS**

**Question 1: In your opinion, do Poison Information Centres (PICs) play a role in preventing pesticide poisoning? Give examples in your response**

**Yes**

- Reducing extent of harm from poisoning by providing timely interventions
- Poison centres are a good resource for preventing poisoning by conducting educational campaigns on best practices - including PPE, mixing, use, and disposal
- For people to know that there are call centres in their countries means they are aware of issues that may be associated with use of pesticides
- PICs play a role of awareness-raising
- PICs collect and provide data on pesticide poisoning which can be used in prevention campaigns and regulations
- Public awareness needs to be enhanced for PICs to be effective
- PICs help provide guidance in the management of exposure such as diagnosis, advice and required antidotes, including recommendations for decontamination
- Help with capacity-building

**No**

- They are not involved in awareness-raising
- Their numbers are only on the pesticide containers and users can only contact them after accidental poisoning
- In some countries, there is not much information on pesticides or preventing pesticide poisoning. For the general public, this may be a huge gap, considering the popular use of pesticides in the country
- A PIC may not have enough resources or personnel to cover the entire country/region

**Question 2: What is the role of Poison Information Centres in the reduction of pesticide poisoning cases?**

**Emergency Assistance**

- PICs offer immediate assistance to individuals, healthcare professionals, and first responders when incidents occur
- They provide guidance on first aid measures which can help minimise severity of poisoning and improve the chances of a positive outcome
- Advise on appropriate referral and management
- Providing triage of pesticide poisoning cases

**Data Collection**

- Epidemiological surveillance and toxicovigilance
- Collect data on number of poisoning cases, which pesticide products are commonly implicated in poisoning, where these cases occur
- Analysing data on which pesticides are more available or accessible to people
- Collect information poisoning cases caused by illegal pesticides
- Informing regulations
- Provision of data for future research

**Awareness-Raising**

- Empowering communities on management of poisoning
- Education on first aid of pesticide exposure/poisoning
- Conducting outreach programmes educating on things like responsible storage and use
- Advocacy



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## Other

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- Collaborating with industry and retailers
  - Provide accurate and up-to-date information to health providers about pesticides including their toxicology, routes of exposure, and their associated antidotes
  - Support and training for health care workers on pesticide exposures and toxicological information of the most commonly used pesticides used in pesticide poisonings
  - Provide input into labelling of pesticides
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## POLL RESULTS

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### Does your country have a PIC, and if so, how does it play a role in pesticide poisoning? Include your country in your response

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- **Iran:** Yes, and there is a specialised hospital (Loghman), they are connected to each other
  - **Malawi:** No
  - **South Africa:** Yes
    - It facilitates information exchange with government on pesticides causing harm
    - They do not have a relationship with regulatory bodies especially the Ministry of Agriculture responsible for pesticide registration in South Africa
    - The PIC assists with procedures to be followed when exposed to poisons or toxins
  - **Zimbabwe:** No, the system is fragmented between the medical facilities and the police
  - **Kenya:** Yes, it had gone quiet for a long time but is now up and running
  - **Lesotho:** No, we would benefit from developing one as there are cases of pesticide poisonings
  - **Eswatini:** No, but medical practitioners contact the IPC in South Africa for assistance and guidance
  - **USA:** Yes, our poison centres are key repositories of information and poisoning prevention for pesticides
  - **Zambia:** No, we need help to set one up
  - **Nigeria:** One was launched in 2019 but we do not see activity from it
  - **Ethiopia:** No, we have an emergency centre for burns, which also works with poisoning
  - **Gabon:** No
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### What are the main barriers for why your country does not have a PIC or challenges to current PIC in your country? Include your country in your answer

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- **South Africa:**
    - Lack of financial resources and support from government
    - Some pesticides are not properly identified at clinics and are thus listed as “other”
  - **Iran:** Diversity in land, remote areas, lack of access of countryside and villages
  - **Nigeria:** Lack of human resources, policy, and understanding of the issues
  - **Kenya:**
    - Lack of coordination by agencies regulating chemicals
    - Lack of awareness from users
    - Capacity in manning the centre
  - **Zimbabwe:**
    - Lack of political will and legislation
    - Fragmented system
  - **Zambia:**
    - Lack of resources
    - Not a priority
    - Policymakers lack information on the importance of a PIC
  - **Gabon:** Lack of political will, funding, and resources
  - **Eswatini:** Lack of expertise in the field
  - **Ethiopia:**
    - Lack of financial and technical resources
    - Health strategic plan implementation gap
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- Absence of a telephone network in rural areas
- **Lesotho:**
  - No laws or proper regulatory frameworks that would enhance the urgency to focus on establishing PICs
  - Lack of funding and well-developed research centres

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### **How can some of these challenges/barriers be addressed or overcome?**

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- **Political will**
  - Government prioritisation and commitment (through sensitisation, data, and advocacy)
  - Government investment in PIC programmes
  - Ongoing funding from governments
  - Cooperation and collaboration with related UN agencies and private sector/industry
- **Research**
  - Additional research on the pesticides that can be used in suicide, and awareness-raising around these
  - Collect data from hospitals to engage governments and convince them of the need for PICs
- **Advocacy**
  - Raise political awareness of the merits of this approach
  - Policy recommendations
  - Awareness-raising campaigns for public and regulatory bodies
  - Showing the health burden on LMICs and globally
- **Pesticide Industry**
  - Collaborate with government/regulatory bodies and PICs
  - Take responsibility
- **Capacity-building**
  - Of personnel in charge of the poison centres, and awareness creation to the public on the PIC
- **Other**
  - Technical support from WHO
  - There is a stewardship program called the Safe Use Ambassador programme

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### **What policies and regulations are in place to prevent and respond to pesticide poisoning, or what gaps are there? Name your country in your response**

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- **Kenya:** Pesticide packaging labels are required to have first aid instructions and a toll-free number to the PIC
  - **South Africa:** Hazardous Chemical Agents Regulations, 2021 and the Notifiable Medical Conditions of the Department of Health which records all pesticide poisonings in a national database and makes it mandatory. Notifiable medical conditions is a legal requirement, but implementation is poor, and awareness-raising is needed for health worker
  - **Malawi:** No specific regulations or policies that deal with pesticide poisoning, but other issues are addressed by the Pesticide Act e.g. providing for measures to prevent pesticide poisoning. There are data challenges and a lack of resources
  - **Eswatini:** We have the Pesticide Management Act, we need to improve it by having a pesticides management policy and influence our political will to be vibrant on issues of chemicals safety
  - **Zimbabwe:** The legislation is weak on poisoning. It is strong on the trade side of the pesticides
  - **USA:** There are licensing and training requirements for use of restricted pesticides that are on the market which cover PPE, mixing, application, and disposal, as well as design mechanisms to prevent exposure
  - **Nigeria:** Unaware of policies and regulations to prevent and respond to pesticide poisoning. The gaps are clearly obvious, data and information are unavailable.
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- **Lesotho:** No well-known policies and regulations to prevent and respond to pesticide poisonings. The absence of regulations is a gap in establishing PICs
  - **Zambia:** Environmental Management Act No. 12 of 2011 and the Environmental Licensing Regulations. There are provisions in the regulations for proper hazard communication, and requirements that only trained people distribute pesticides. Requirements to train users would also help.
  - **Gabon:** Unaware about poisoning policy
  - **Ethiopia:** There is the hazardous waste management proclamation by the Environmental Protection Agency, but it has no information about policy and regulation on pesticide poisonings
  - **Tanzania:** We have Plant Health Regulations 2023, Section 55, which states the establishment and role of pesticide poisoning centres
  - Policies and regulations are very important gaps that must be filled
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### **How can banning and/or changing the formulation of pesticides reduce suicide cases/pesticide poisoning?**

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- Reduces exposure and eliminates the risk of suicide
  - People might use alternative pesticides which may be less hazardous
  - It is debatable. If there is a ban/change on formulation, people will resort to attempting suicide with different methods
  - Enhances the use of appropriate application methods and reduces the toxic effect of active ingredients. For example, in the case of phosphine (rice tablet), tablets are easily available and easy to swallow, but other formulations are not. In Nepal, an ongoing study shows reduction in deaths after formulation change
  - Improve formulations and design containers that minimise exposure
  - Banning toxic pesticides is effective at preventing suicides in South Asia
  - The hierarchy of control shows that eliminating a hazard can reduce that hazard. Banning a pesticide or substitution with a less toxic pesticide will remove the hazard of poisoning
  - We have a challenge with porous borders, so banning some highly toxic pesticides has not really helped
  - Banning pesticides can assist in ensuring that pesticides are not traded unless illegally Import and export of banned pesticides can be prohibited from countries that are members of conventions
  - Bans lead to an increase in counterfeit production and unregulated use, which leads to uncertainty in what patients have ingested
  - New research suggests that China's pesticide bans have contributed to a substantial fall in the country's suicide rate
  - A new study from the National University of Malaysia has provided early evidence that the country's 2020 ban on a deadly pesticide has helped
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### **How can PICs increase awareness about pesticide poisonings among policy makers and the public?**

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- **Data Collection**
    - Collecting pesticide poisoning data and regularly submitting to government
    - Data can be made accessible to policymakers
    - This way there is tangible proof of the danger of pesticides in communities, and the health and economic costs of poisoning cases
  - **Public Education**
    - Use social media platforms and other media platforms to educate public
    - Radio interviews
    - Provide resources like education materials and other support like expertise
  - **Policymaker Engagement**
    - By writing policy briefs, making infographics, and creating audio and visual awareness campaigns
    - Workshop presentations and trainings for policymakers
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- Presentation of findings and sharing information can give policymakers a cause for concern to come up with solutions
- Provide interfaces with policymakers through policy briefs and conducting stakeholder meetings
- **Stakeholder Engagement**
  - Collaboration with other stakeholders like media, health, environment, community, and schools etc. to spread the information
  - Partnering with pesticide suppliers and retailers
- **Other**
  - It would be very easy to include additional labels on packaging highlighting the dangers and what to do or whom to call if poisoned
  - Collaboration with other health organisations to raise awareness about pesticide poisoning

## RESOURCES

1. World Health Organisation (WHO) Guidelines for Establishing a Poison Centre  
<https://www.who.int/publications/i/item/9789240009523>
2. Kamaruzaman NU et al. Epidemiology and risk factors of pesticide poisoning in Malaysia: a retrospective analysis by the National Poison Centre (NPC) from 2006 to 2015. *BMJ Open* 2020;10:e036048. doi:10.1136/bmjopen-2019-036048  
<https://bmjopen.bmj.com/content/10/6/e036048>
3. Centers for Disease Control and Prevention National Environmental Public Health Tracking - Pesticide Exposure  
<https://www.cdc.gov/nceh/tracking/topics/PesticideExposure.htm>
4. Olson DK, Sax L, Gunderson P, Sioris L. Pesticide poisoning surveillance through regional poison control centers. *Am J Public Health*. 1991 Jun;81(6):750-3. doi: 10.2105/ajph.81.6.750. <https://pubmed.ncbi.nlm.nih.gov/2029045/>
5. Goel A, Aggarwal P. Pesticide poisoning. *Natl Med J India*. 2007 Jul-Aug;20(4):182-91. PMID: 18085124. <https://pubmed.ncbi.nlm.nih.gov/18085124/>
6. Knipe, D.W., Gunnell, D. and Eddleston, M., 2017. Preventing deaths from pesticide self-poisoning—learning from Sri Lanka's success. *The Lancet Global Health*, 5(7), pp.e651-e652.  
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<https://forms.gle/NzYH5REfUruL3jdm6>

The **Division of Environmental Health (DEH)** Pesticide Discussion Forum is a bi-monthly online seminar for pesticide regulators and resource persons, as well as students in the postgraduate Professional Masters in Chemical Risk Management (MCRM) and Diploma in Pesticide Risk Management (DPRM). Our aim is to provide support for managing pesticide risks and implementing risk reduction strategies.

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