

## Short Communication on Current Role of Poison Information Center and Poison Control Center

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### ABSTRACT

In biology, poisons are chemicals, which will cause death, injury, harm to organs, tissues, cells, and DNA, commonly by chemical reactions or other molecular activities. Poison control centers' major purpose has always been to enhance poisoned patients' care and poison prevention. The requirement to complete this task necessitates the completion of several responsibilities and duties. Developing countries have many centers that are multifunctional and offer a wide range of toxicological information. However, the obstacles for poison control centers in underdeveloped nations remain treatment knowledge, formal training, laboratory service accessibility, and antidote supply. PCs will continue to play a significant part in the population's health protection in the future.

**Keywords:** Poison; Information center; Control center

### DESCRIPTION

Poisons are chemical substances that, when inhaled in large amounts, can cause death, damage, or impairment to organs [1].

A poison is typically distinguished from a toxin and venom in the realms of medicine (especially veterinary medicine) and zoology. Toxins are poisons generated by living organisms, whereas venoms are toxins introduced into the body by bites or stings (this is exclusive to animals). The injecting strategies of venom are different from other toxins [2].

Poisonous compounds are used in industry, agriculture, and other industries for reasons other than toxicity. The majority of dangerous industrial chemicals has material safety data sheets and is classified as hazardous substances. Hazardous compounds are subject to rigorous regulation in the areas of occupational safety and health, public health, drinking water quality requirements, air pollution, and environmental protection. Many hazardous substances easily migrate into biological tissues, air, water, or soil on a molecular scale due to the mechanics of molecular diffusion. Chemical contamination is often costly or impossible to reverse due to the concept of entropy unless appropriate chelating agents or micro-filtration procedures are available. Chelating drugs sometimes have a greater scope than the acute target; therefore their administration demands close medical or veterinary management.

Pesticides are a class of chemicals whose primary goal is to kill insects and other animals considered pests (such as rats and cockroaches). For thousands of years, natural insecticides have been utilized for this purpose (e.g. concentrated table salt is toxic to many slugs). Many animals, particularly birds, utilize insects as a key food source, and bioaccumulation of chemically produced agricultural pesticides is a serious concern. As all living organisms on land share underlying biochemistry, selective toxicity, controlled application, and controlled biodegradation are major challenges in herbicide and pesticide development, as well as chemical engineering in general; organisms exceptional in their environmental resilience are classified as extremophiles, and these, for the most part, exhibit radically different susceptibilities.

Poisoning is a major public health issue that ranks 45th in the globe in terms of total deaths. Each year, about a million people die by suicide, and it is estimated that purposeful pesticide consumption kills 3,70,000 individuals. Unintentional poisoning claimed the lives of an estimated 1,93,460 individuals globally in 2012, according to WHO figures. 84 percent of these deaths took place in low- and middle-income nations. Over 10.7 million years of healthy life were lost due to accidental poisoning in the same year [3].

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India has one of the highest rates of poisoning in the world. Every year, it is estimated that over 50,000 individuals die as a result of hazardous exposure. According to the National Poisons Information Centre in New Delhi, the most common cause of poisoning is household agents (44.1%), followed by drugs (18.8%), agricultural pesticides (12.8%), industrial chemicals (8.9%), animal bites and stings (4.7%), plants (1.7%), unknown (2.9%), and miscellaneous groups (2.9%). (5.6%). Pesticides, such as organophosphates, carbonates, chlorinated hydrocarbons, pyrethroids, and aluminum or zinc phosphide, are the most prevalent cause of poisoning in underdeveloped nations. Agriculture-based economics, poverty, dangerous practices, illiteracy, misinformation, and the ready availability of very harmful pesticides are all contributing factors. The majority of poisoning victims come from lower socioeconomic backgrounds [4].

The primary mission of poison control centers has always been an improvement in the poisoned patients' care and poison prevention. The main of this mission implies that many functions and roles must be accomplished. However, the main challenges of poison centers in developing countries are still treatment information, formal training, laboratory services accessibility and availability of antidotes. At the same time, poison centers from developing countries need to accomplish their public health mission through strengthening and expansion of some well-defined roles like toxic surveillance and environmental health monitoring according to the prevailing and future toxicological problems. Poison control centers from developing countries continue to face old challenges but cannot ignore the new ones that appear in the globalized world. Poison centers have a vital role in environmental exposure surveillance systems for sentinel event detection. Poison centers offer real-time and continuous data needed for preparation and response during such events and also offer a means to report health concerns. Centers from South America were involved in some of the most important environmental health problems of the region e.g., lead contamination (children), children 'occupational' poisoning, and flour contamination with *Fusarium* toxins. Furthermore, poison centers can be the markers of risk factors or identifiers of the vulnerable population e.g., changes in drugs prescription patterns, unusual

patterns of addiction, unexpected product uses, children abuse scenarios or undetected sources of environmental contamination. In an era of evidence-based medicine and research, toxic vigilance based on the millions of cases registered by poison centers every day acquires more and more importance. A new approach to the toxic vigilance and preventive roles of poison information centers lies in their ability to contribute to risk assessment methodologies with their human data. The data routinely collected by poisons centers could contribute to risk assessment documentation and define priorities for risk assessment of the harmful chemicals. Although there is some skepticism about the value of poison centers data, the shared volume of human data could validate this information. The international effort of the IPCS/INTOX program, on harmonization of data collection and terminology for the comparable recording of observational human data, has been a great advancement towards handling this problem [5].

## CONCLUSION

Poison centers will continue to play a key part in the population's preventive care in the future. As a result, their mobilization to maintain conventional activities, launch new activities, learn new skills in toxicology, methodology, and quality assurance, recruit and educate new employees, and secure appropriate funds to continue and extend their operations is critical.

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