



LETTERS TO THE EDITOR

Evolution of chemical accidents and mass poisonings in Cuba: an analysis from 2010-2024

Evolución de los accidentes químicos e intoxicaciones masivas en Cuba: un análisis de 2010-2024

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Dear Director:

In recent years, Cuba has experienced a series of chemical accidents (CAs) and mass poisonings (MPs) that have drawn particular interest due to their impact on health, the economy, and the environment. Moreover, these events

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require critical analysis from the perspectives of Public Health and inter-institutional management, given their complexity and repercussions. It is noteworthy that the authors of this research have participated in toxicological advising or direct care of the affected individuals, providing a practical and in-depth perspective on these incidents.

According to the authors, various factors have contributed to the occurrence of chemical accidents, including industrial infrastructure obsolescence, lack of personnel training, and insufficient compliance with safety regulations.

Chemical Accidents and Mass Poisonings in Cuba during the Period 2010–2024

One of the most notable events by the number of affected individuals was the mass methanol poisoning that occurred on July 29, 2013, when several citizens, mostly residents of the Balcón de Arimao Popular Council, arrived at the Cristóbal Labra Polyclinic in La Lisa during the night. Methanol is a highly toxic alcohol for the human body, with complications from poisoning including blindness and even death. ^(1,2)

A significant and recent event was the fire at the Matanzas Supertanker Base in August 2022. This incident involved fuel storage tanks, resulted in the evacuation of thousands of people, caused multiple injuries, and had environmental implications in the affected area. The magnitude of the incident revealed deficiencies in prevention and emergency response measures for chemical emergencies, including within healthcare institutions. Generally, healthcare personnel in the country are trained to treat and recover isolated poisoned patients under normal circumstances. However, it is necessary to improve preparedness for mass events, where such personnel risk their lives due to possible secondary contamination depending on the chemical involved. ^(3,4)

Another event occurred on November 22, 2022, when an ammonia leak was reported due to a pipe rupture inside a refrigeration chamber at the Copmar company in Havana's port. Fortunately, both workers and nearby residents were unharmed. Likewise, on July 12, 2022, at the Tílima Beer Factory in Camagüey, a safety valve was activated, releasing small amounts of ammonia. The substance was detectable at the Máximo Gómez Báez mixed center, and as a preventive measure, 12 asymptomatic students with allergy histories were placed under clinical observation. ^(5,6,7)

Similarly, on April 7, 2023, a partition collapsed in the chimney area of the Antonio Guiteras Thermoelectric Plant. The greatest danger was inhalation of soot and toxic substances, including vanadium, a heavy metal. After completing work at this facility, more than 40 patients, including Red Cross personnel and firefighters, were admitted to the Military Hospital "Dr. Mario Muñoz Monroy" with clinical manifestations related to chemical exposure. Most exhibited mild to moderate symptoms, and one required hospitalization. Additionally, on June 15, 2023, an ammonia leak occurred at the Santa Clara pasteurizer due to debris falling on a pipe supplying the refrigeration unit. ^(7,8)

Regarding these events, the authors agree that the population is affected during chemical emergencies. Therefore, raising awareness about the dangers associated with these incidents and preparing people to provide first medical aid is a priority.

Looking ahead, it is imperative that Cuba adopts a proactive approach to managing responses to chemical accidents and acute poisonings. Inter-institutional collaboration among health, civil defense, environment, communications, industry, and other sectors is essential to comply with legislation governing responses to such emergencies. Finally, the authors propose developing a management model for responding to chemical accidents and mass poisonings in the Matanzas territory, with the potential to generalize these results to other regions of the country in the future.

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CONFLICT OF INTEREST



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