

Pattern of Chemical Poisoning, Riyadh, cont....

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in agreement with findings worldwide.^{1,2} Pharmaceutical products contributed to most cases of poisoning, which may be due to dispensing of drugs in envelopes instead of child-resistant containers, free medical treatment and easy access to drugs.

Unlike other developing countries where household products represent the most frequent cause of poisoning,⁵ in Riyadh, Pharmaceutical products constituted a greater problem. In a previous study, Pharmaceutical products accounted for 53% of cases of accidental home poisoning and household products for 46%.⁶

Health education for parents and caregivers of young children is recommended. Child resistant containers should be used for packing drugs instead of envelopes to avoid drug-related poisonings. Regional poisoning control centers should be initiated and enforced. Their role in prevention is also imperative through planning, research, and education.

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Biological Warfare: A New Challenge?

There has been increasing concerns on Biological Weapons (BW) in the past few years. Most countries are not well prepared to deal with them.

Early attempts at biological warfare have included the crude use of filth, and cadavers to contaminate wells and water sources. Ships carrying plague-infected refugees sailing through Mediterranean ports are thought to have contributed to the second plague pandemic in 1348. In the 18th century, smallpox was used as a biological weapon against Native - Americans.¹

During World War II, both Axis and Allied Nations devoted efforts to BW research. In Japan, prisoners were infected with anthrax, cholera, typhoid, plague, and Typhus. In Germany, prisoners were forcibly infected with *Rickettsia prowazekii*, Hepatitis A, and *Plasmodium* species, and treated with investigational drugs. In England, bomb experiments of weaponized spores of *Bacillus anthracis* were conducted on Gruinard Island near the Coast of Scotland resulting in heavy contamination.^{1,2} During the Korean war, China and Korea accused the USA leadership of using BW.³ By the late 1960s, the US military had developed a BW arsenal that included numerous bacteria, toxins, and fungal plant pathogens.⁴

In 1972, the "Biological Weapons and Toxin Convention" (BWC) was signed by several nations, prohibiting the development of BW. In spite of that, several signatory have participated in activities outlawed by the treaty.⁵ The true nature of the 1979 anthrax outbreak in Sverdlovsk, former Soviet Union, has been exposed as an accident at a military BW facility.⁶ Recently, appropriate legally binding protocols to strengthen the BWC have been considered.⁵

There are four general types of BW agents: bacteria, rickettsia, viruses and toxins. Each type causes a different complex of symptoms. Only a few organisms found in nature have the combination of pathogenicity, stability and ease of production needed to make effective BW, such as anthrax, botulinum toxin, Variola virus, *Yersinia pestis*, *Francisella tularensis*, and *Brucella*.⁷

The threat of biological warfare with a specific agent is proportional to susceptibility of the population to that

agent. Currently, there are insufficient supplies of medicines and trained personnel to cope with a massive bioterrorist event.⁸

Prevention of BW proliferation requires education, specific protective measures, and environmental modification. Prevention of BW also rests on creating a strong global attitude that rejects their development and use. The medical and scientific communities play an important role in raising global awareness during international conferences, and in continuing research and development of improved diagnostic tools, therapeutic agents, and effective response plans.⁵

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