

TAIWAN EXPERIENCE IN THE MANAGEMENT OF AN ANTIDOTE SUPPLY NETWORK

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Objectives: Antidotes may save lives and shorten the period of treatment in patients with poisonings. However, studies indicate that antidotes that are infrequently used, expensive or have a short shelf-life are often inadequately stocked, making them unavailable when needed. In many countries, the antidotes may not even be manufactured or imported. Although many studies have documented these issues, none focuses on overcoming the problem through an institutional and systematic approach via establishing an antidote supply network.

Methods: A network for the control and administration of specific antidotes in emergencies was established in 2000 in Taiwan with funding from the Department of Health. Four antidotes of highest priority that were lacking but in-demand in the country, including physostigmine, methylene blue, cyanide antidote and chelators (EDTA, DMSA, DMPS) were collectively imported initially, and digoxin immune fab and fomepizole were introduced later. Distribution sites were selected according to the probability of poisonings and suitability for stocking, and the antidotes were distributed according to their level of urgency requirement. The distribution was completed in January 2001.

Results: Between 2001 and 2010, the network consisted of one central control center, 3 main supply centers and 58 hospitals. It is overseen by a committee that monitors and evaluates its utilisation and efficacy. Budgeting, procurement and replenishment of antidotes was carried out each year according to the usage and expiration of the antidotes. A mechanism and procedure for the urgent allocation of antidotes in toxicological emergencies such as chemical accidents was established, including a website for sharing instantaneous information about antidote reserves, together with a reporting system for the update of stocking status, future distribution, data collection and usage evaluation. The control and supply centers also provide relevant information and consultation to hospitals, companies and governmental offices, and organise educational and training programs. The programs changed over the years according to the stages of development of the network. Altogether 417 people benefited from the timely availability of these special antidotes, among which 37% of patients who presented with severe poisoning recovered completely.

Conclusions: The establishment of a nation-wide network of antidote stock facilitates the supply and distribution of less available but lifesaving antidotes, and relieves difficulties faced by hospitals in toxicological emergencies. The network allows for better identification and understanding of the local incidences and geographic distribution of poisonings, and the knowledge gained can then be applied to the training, control and prevention of poisonings.