

The Public Health Role of Medical Toxicology

Medical Toxicology is a core component of public health, environmental and occupational health and medicine. The pharmacologic and toxicologic education in medical school and residency has advanced throughout the world in the last 40 years. When I first began my training in emergency medicine in the 1970s, there were few early textbooks of emergency medicine and none in medical toxicology. As I began my career, I saw daily overdoses of heroin, caustics, lead, salicylates, hydrocarbons, barbiturates and ethanol. Yet there were no resources or mentors in the field. Poison Control Centers had begun in Europe and the United States but few physicians or pharmacists played critical roles, and case databases, evidence based information and research were nearly nonexistent.

Today many medical schools have transformed pharmacologic education to incorporate medical toxicology, most often taught by emergency physicians who are also subspecialized in medical toxicology. Today many residencies such as Pediatrics and Internal Medicine incorporate education in medical toxicology, whereas almost all residencies in emergency medicine have extensive training in medical toxicology.

We have created a specialty focusing on poisoning and overdose, homicide and suicide and occupational and environmental exposure. Medical toxicology ranges from the care of the neonate suffering abstinence from opioids, the infant unintentionally exposed to a household toxin, an adolescent experimenting with drugs such as amphetamines or cannabinoids, a worker suffering an occupational exposure, a medical error in hospital or a geriatric patient with an adverse drug event. All of these possibilities became the work of the specialist in medical toxicology. Two year Fellowships in medical toxicology have been developed in our department and many others since the early 1980s. These fellowship trained individuals are currently working at the Centers for Disease Control and Prevention (CDC), the Agency for Toxic Substance and Disease Registry (ATSDR), the National Institute of Health (NIH) and the National Institute of Drug Abuse (NIDA). They work in every Poison Control Center in America, almost all academic departments of emergency medicine have medical toxicologists and these individuals work side by side with specialized clinical pharmacists.

These leaders have transformed national standards of care, defined essential antidotes, worked on enhancing awareness, creating laboratories and regulatory services. The goals for all of us in emergency medicine are to create an educational and research environment that will improve development of knowledge and the transmission of evidence to the caregiver who will assure that each patient receives comprehensive integrated care. Each emergency physician, medical toxicologist and poison center is a critical part of the public health system. Each poisoning is an unnecessary event that must be addressed as a failure in the public health system that we endeavor to prevent from reoccurring (1). Our intellectual rigor, clinical excellence and academic commitment in medical toxicology will assist governmental decision making, improve pharmacologic practice and improve the health of our nations (469 of 507).

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