J. Med. Toxicol. (2013) 9:6–8
DOI 10.1007/s13181-012-0284-5

EDITORIAL

Practice or Perish: Why Bedside Toxicology is Essential to the Survival of Our Specialty

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Published online: 29 December 2012
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Introduction

One of the medical toxicologists in our group was recently asked a shocking question. She was providing recommendations via telephone to a rather upset and flustered emergency physician, when the caller interrupted her by asking, "Excuse me, are you even a *clinician*?" Working on a toxicology service that admits and consults on more than 1,200 patients per year, my colleague was understandably taken aback. Hearing the story later, I was dismayed but not surprised. Based on the current practice of many toxicologists, how can we fault the emergency physician for asking such a question? Medical toxicology has become a specialty in which the telephone has largely replaced the stethoscope as the primary tool of our trade.

This is in no way meant to diminish the importance of poison control centers. Not only was the establishment of poison centers instrumental in the development of medical toxicology as a subspecialty [1], there is no doubt as to the public health benefit and system-wide cost savings engendered by poison centers [2–7]. My concern is the role played by toxicologists in our healthcare system. Presumably, fellowship training in medical toxicology allows us to make clinical recommendations and advise caregivers at a level beyond that of the emergency physician and poison information specialist. If this is true, how many patients does the medical toxicologist have to treat at the bedside to ensure the validity of our advice? What happens when the emergency physician on the other end of the telephone has laid hands on more poisoned patients in the preceding *week* than the toxicologist has in the preceding *year*? If we do not examine patients, treat them at bedside, and learn from our experience, what is it that distinguishes us from Poisindex™ or a poison information specialist?

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Practice Patterns

In 2007, White et al. surveyed diplomates in medical toxicology regarding their practice. At that time, 88 % of respondents were noted to be "clinically active," seeing or consulting on at least ten patients over the two preceding years. In fact, the majority of respondents saw less than 100 patients per year with acetaminophen toxicity and less than 50 patients per year with antidepressant and antipsychotic toxicity, despite these being the top three reported diagnoses [8]. Although the American Board of Medical Specialties defines clinically active as "any amount of direct or consultative patient care provided within the last 24 months" [9], I believe most of us would apply a much more stringent definition to those involved in our own care or that of our families.

Fellowship Training

The most recent published survey on fellowship training in medical toxicology found that, on average, clinical time composed 55 % of time in training [10]. Only 48 % of that 55 % was spent on inpatient or outpatient encounters, with the remainder composed of poison center consultation. In light of this, it is not surprising that roughly half of the surveyed toxicologists felt that they had too little direct patient care in fellowship, while 91 % felt poison center time was sufficient [10]. To view these data another way, the mean total number of patient encounters per year was 204

(median 150; range 5–1,000). Assuming that a fellow could take call every third day, this leaves each fellow with 68 primary patient encounters per year or one every 5 days. In reviewing the 2012 Core Content of Medical Toxicology, the better of three pages are devoted to clinical assessment and therapeutics [11]. How does one master the breadth and depth of that content by seeing only a single patient every 5 days?

Payment and Compensation

My former fellow often joked, "The best thing about being a toxicologist is being able to draw complex biochemical pathways on the back of a cocktail napkin." "The worst thing," he added, "is that the passengers riding in your cab don't really care." Indeed, concerns about finances after fellowship completion plague graduating fellows. In the only published reimbursement profile for a private toxicology practice, the overall reimbursement rate was low (34 %), and the average hourly charges and collections were $66.00 and $26.19, respectively. However, this study referred to a solo private practice [12]. Various models of bedside group practice, both academic and private, have proven financially sustainable in Phoenix, Pittsburgh, San Diego, Calgary, Denver, and Hershey, to name a few. In the academic world, emergency physicians trained in toxicology earn higher salaries on average than non-fellowship faculty, without respect to academic rank. In addition, directors of toxicology services or poison centers receive higher salaries than their faculty counterparts who practice only emergency medicine [13]. This should allow for bedside toxicology practice or "buy-down" of emergency department shifts without a net loss of income.

For better or worse, in the USA, we have an established model in which poison center-based consultation is typically provided without charge. Despite the valiant efforts of US poison centers to secure long-term funding from various sources over the years, it seems unlikely that direct physician compensation for their telephone consults will occur, even if private insurance companies and hospitals are called upon to pay for cost savings that they currently enjoy for free. This means that for medical toxicologists to get compensated for patient care, we have to go to the bedside and *do* something, not just *say* something.

Credibility and Survival

In order for medical toxicology to survive, it is important that we maintain our credibility as experts in our field. The simplest way to do this is to provide direct, high-quality clinical care in a manner visible to our colleagues. If we persist in making telephone recommendations far in excess of our time at the bedside, we will continue to lose ground, as busy emergency physicians and others call us less frequently. One might look to the recent history of interventional radiology as an example. Vascular surgeons and cardiologists have rapidly expanded their skill set and credentialing to perform a larger number of minimally invasive procedures, effectively waging a "turf war" on interventionalists [14–16]. The number of peripheral vascular interventions performed by vascular surgeons and cardiologists are on the rise, and interventionalists' market share for peripheral arterial intervention is rapidly falling [17]. One interventional group reported annual decreases from 40–55 % in referrals from peripheral vascular surgeons, cardiovascular surgeons, and cardiologists [18]. As a busy emergency physician, it is often simpler and more effective to place a single call to an internist or intensivist who will assume care of the patient than to attempt to execute telephone advice from a consultant who subsequently provides no bedside services.

In the fellowship training survey discussed above, one respondent commented: "Radical changes are needed, or the subspecialty will become a hobby"[10]. How can we prevent this remark from ringing true? Despite its relative youth as a recognized subspecialty, medical toxicology has seen tremendous growth and recognition in recent years. At a time when prescription opioid abuse is a national epidemic, pharmaceutical development occurs at an unprecedented pace, and concerns over environmental and occupational health make frequent headlines, we are poised as a field to take giant steps forward. As a subspecialty, we need to go to the bedside to ensure highest-quality training, to maintain clinical competence, to be fairly compensated for our efforts, and to ensure that our colleagues in other fields recognize us, respect us, and call on us frequently for our expertise. No matter which of the many branches of toxicology we choose to practice, it is our ability and experience taking care of patients that distinguishes us from non-toxicologists. This is what we must work tirelessly to preserve.

Conflicts of Interest None

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