

Toxicology Fellow's Perspective: Filling a Void in Medical Education Regarding Opioids

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The misuse of prescription opioids in the USA is undeniably a substantial problem. The causes of this “prescription opioid epidemic” are multifactorial, with numerous opinions existing on how the country can best curtail the problem. While sectors of the healthcare administration have deified the goal of complete pain alleviation, healthcare providers are conflicted with the feeling that they are too often prescribing addictive medications to control pain [1]. Public health advocates publicize the dangers of prescription opioids and advocate minimizing prescription medication abuse, while pain specialists worry that these are cumbersome checks that hinder patients from receiving the medication they need [2]. As the medical community's views on prescription opioids are not in agreement, it is not surprising that healthcare providers in training are being taught conflicting information on the use of prescription opioids.

A recent study in the *Journal of Pain* found that over 20 % of US allopathic medical schools do not offer educational sessions dedicated to pain or pain medication [3]. In those schools where pain education was offered, the topics most commonly taught were focused on the systems-based clinical presentation of pain (e.g., abdominal pain or back pain) and the neuroscience of pain. Substance abuse and addiction ranked as 26th on the list of 30 topics, with less than 20 % of these schools providing instruction on the addictive potential of pain medication. This is particularly alarming when it has previously been shown that, after alcohol, opioids are the second most commonly abused substance among healthcare professionals [4]. While the *Journal of Pain* paper appropriately argues that medical

school education on the physiology and management of pain is inadequate, even more upsetting is an apparent avoidance of education on the dark sides of opioids—their drug-specific toxicities and their addictive potential.

As medical students advance through their clinical training, these educational deficiencies are not necessarily compensated for in graduate medical education. Studies have shown that residents and fellows are also uncomfortable treating patients in pain and feel undereducated in the management of pain. In one study, 59 % of respondents rated their medical school education on pain management as “fair” or “poor,” and 36 % said the same about their residency education [5]. This is understandable when the literature on pain management education for physicians-in-training appears so contradictory and, oftentimes, agenda-driven. While one publication describes educating resident physicians on “the evidence refuting the routine use of pain scales” and how to “identify red flags...in patients with aberrant drug-related behavior,” another grades resident performance on an “opiophobia” score that takes points off for reserving opioids for severe pain or identifying concerns with addiction [6, 7]. One feature that appears to be common, however, is a relative avoidance of graduate medical education on the risk–benefit of various opioid medications and the management of overdose.

Drug toxicity education, however, does appear to be expanding for post-training practicing physicians. One approach is in the form of Risk Evaluation and Mitigation Strategies (REMS) which are policies mandated by the US Food and Drug Administration for use with drugs that are considered to have significant risk of adverse outcomes [8]. REMS currently exist for extended release and long-acting opioids, transmucosal immediate-release fentanyl products, and buprenorphine-containing products. The focus is on prescriber education as well as methods “to assure safe use.” However, the concern exists that these assurances,

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such as certification requirements for physicians, would only divert prescribing patterns away from the use of medications on a REMS list without necessarily assisting physicians in making a more educated or cautious choice of pain medication. Hopefully, enhanced physician awareness with this more wide-reaching toxicity education, in conjunction with data provided by state prescription drug monitoring programs, could screen for abuse and help identify patterns of use that put patients at risk for toxicity.

Unlike recent major public health threats in the USA, such as obesity and tobacco abuse, the medical community still has no unified stance on the prescription opioid problem. It is clear that trainees are receiving inadequate or conflicting information on the use of prescription opioids. More expansive and innovative methods of educating medical professionals, such as REMS and prescription monitoring programs, improve awareness and help identify at-risk individuals, but a void in medical education still exists. This is where we, as medical toxicologists, can provide the greatest influence.

One of the most important responsibilities of the medical toxicology community is to ensure continued education to healthcare providers, patients, and policymakers on the risks and benefits of all drugs, including opioids. From the epidemiologic monitoring capabilities of the poison centers, to the expert advice toxicologists provide with respect to drug delivery forms, toxic combination products, drug interactions, and drug-specific toxicities, toxicologists have the resources and expertise to play an important role in subduing the prescription opioid epidemic. As medical toxicologists, we are trained teachers, and it is at every stage in medical education that I would propose our specialty could

make the greatest influence on the opioid epidemic in the USA.

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