

Prescription Drug Overdose and Misuse: Data from Carolinas Poison Center

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Carolinas Poison Center is a telephone resource center that provides confidential triage, information, and management advice to a wide spectrum of callers in North Carolina. As a result of these calls, Carolinas Poison Center has a dataset of self-reported information from the public and medical information from health care providers about the substances involved in poisonings, their clinical effects, and the management of these cases. The calls can relate to anything that causes toxicity—including medications, illicit drugs, chemicals, gases, venoms, and plants.

A widely held perception is that Carolinas Poison Center receives calls mainly from parents of small children who are exposed to toxic substances in the home. Although children younger than 6 years of age do account for just under half of calls related to human exposures, the most complicated poisoning cases involve adults who have been exposed to multiple drugs, and opioids are increasingly involved in these latter cases.

In calendar years 2011 and 2012, Carolinas Poison Center handled 98,115 calls involving humans who were exposed to prescription or nonprescription pharmaceutical substances. The top 5 categories of such agents were analgesics; sedatives, hypnotics, and antipsychotics; cardiovascular drugs; antidepressants; and antihistamines. Prescription pain medications containing opioids, either alone or in combination with acetaminophen or salicylates, accounted for 6,137 of these calls, representing 29.8% of all calls regarding human exposure to analgesic medications. The top 3 opioids implicated in these cases were (in rank order) hydrocodone, oxycodone, and tramadol.

In the majority of the prescription pain medication cases reported to Carolinas Poison Center, the involved individual underwent treatment in a health care facility; naloxone was administered in 22.0% of these cases. Of the cases managed in a health care facility that involved opioids only (without acetaminophen or aspirin), 7.6% had an outcome of death and/or major effects, such as respiratory depression, and/or moderate effects that responded rapidly to therapy, such as hypotension. Only 32.5% of prescription pain medication cases were managed at the site of the caller, outside a health care facility.

The increased use of extended-release products, long-acting substances such as methadone, and partial agonist/antagonists such as buprenorphine can make management of opioid-related poisonings difficult. Even when naloxone is administered, the duration of action of the

opioid is often much longer than that of naloxone, which necessitates longer observation times and possibly additional doses or continuous infusions of naloxone. Health care providers must also monitor for nonopioid effects of these agents. Carolinas Poison Center staff members assist health care providers with management recommendations and monitoring advice.

In addition to providing services to the general public, health care providers, law enforcement professionals, schools, and other agencies, Carolinas Poison Center also engages in research and awareness campaigns to help prevent poisoning injuries. For example, Carolinas Poison Center is currently working with the Injury Prevention Research Center at the University of North Carolina at Chapel Hill to study the effectiveness of a care coordination program to prevent prescription drug overdoses. This randomized controlled trial will evaluate the efficacy of a care coordination plan for patients who have made numerous visits to 13 emergency departments for treatment of chronic, subjective pain that is not associated with cancer or sickle-cell disease. This study is being conducted in conjunction with the Centers for Disease Control and Prevention.

Finally, Carolinas Poison Center is also conducting a campaign aimed at reducing the misuse and abuse of prescription medications by teenagers. This campaign, which debuted in April 2013, was created with the assistance of teen focus groups. It primarily targets middle school students, who are deemed to be most open to awareness outreach, but it will also be used in high schools. NCMJ

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