

## CESAR FAX: July 3, 2006 (Vol. 15, Issue 26)

### *Internet Provides Prescription Drug Abusers Information on Tampering Methods*

Prescription drug abusers often attempt to physically or chemically change a drug to enhance the drug's effects and to increase the speed of onset of effects. The internet is a "prime source of information on drug tampering and offers a broad sweep of information on methods that spans from vague to highly descriptive, inaccurate to accurate, and scattered to organized" (p. S37). A recent review of tampering methods reported on the Internet for selected pharmaceutical products found four main methods of tampering:

- **Altering dosage forms to allow alternate routes of administration.** This is most often achieved by crushing the tablets and then snorting or injecting the drug.
- **Removing the active drug from high-dose formulations, such as patches.** For example, "methods of removal of fentanyl from patches include squeezing the fentanyl gel out of the patch, removal with a syringe, and extraction with various solvents" (p. S34).
- **Separating narcotic drugs (codeine, hydrocodone, oxycodone) from undesirable drugs (aspirin, acetaminophen, ibuprofen) or inactive ingredients.** The techniques most often discussed involve water- or acid-based extraction.
- **Overcoming time-release formulations.** Many prescription drugs use beads or layers to enable time-release of the drugs. Techniques for overcoming these barriers, such as crushing the beads or separating the layers, are frequently discussed on the internet.

Knowledge of tampering practices is not only important for the identification of prescription drug misuse, but also offers developers of these drugs "an opportunity to assess the strengths and limitations of their products in light of how recreational drug users may approach their products" (p. S38). There are numerous ways that prescription medicines can be designed to hinder tampering and thus discourage drug misuse. A pill that is very hard and therefore difficult to crush is less likely to be abused. Making the drug insoluble in water or including wax-based bindings can hinder extraction of the active drug. Wax-based bindings that gum up when heated can also make it difficult to inject drugs. The authors conclude that "the development of successful formulations that inhibit or prevent drug/formulation tampering with drugs of abuse should take into consideration the scope and practice of tampering methods available to recreational drug users in the Internet." (p. S31)

SOURCE: Adapted by CESAR from Cone, E.J. "Ephemeral Profiles of Prescription Drug and Formulation Tampering: Evolving Pseudoscience on the Internet," *Drug and Alcohol Dependence* 83(S1):S31-S39, 2006. For more information, contact Edward Cone at [Edward.cone@comcast.net](mailto:Edward.cone@comcast.net).

## CESAR FAX: July 10, 2006 (Vol. 15, Issue 27)

### ***Fentanyl Linked to Recent Clusters of Drug Overdoses and Deaths in U.S.***

*Illicitly manufactured fentanyl combined with heroin (and, to a lesser extent, cocaine) is believed to be the cause of a recent outbreak of overdoses and deaths reported in a number of East Coast and Midwest cities, including Delaware, Illinois, Maryland, Michigan, Missouri, New Jersey, New York, Ohio, Pennsylvania, and Wisconsin. While regional outbreaks of fentanyl/heroin overdoses have occurred before (most recently in the early 1990s in New York, Maryland, and Pennsylvania), the recent overdoses and deaths are of concern because they have occurred in numerous states.*

**What is fentanyl?** Fentanyl is a synthetic opioid that is at least 50 times more potent than morphine or heroin. It is a Schedule II prescription narcotic (sold under the brand names Actiq®, Duragesic®, and Sublimaze®) that can be legally prescribed to manage pain during surgery and for severe or chronic pain relief. It can also be illicitly produced in clandestine laboratories.

**What are the slang names for fentanyl?** While slang names may vary from region to region, some of the slang names that have been identified for fentanyl include the bomb, China girl, China white, dance fever, drop dead, Incredible Hulk, infamous, Fat Albert, flat line, friend, good fella, jackpot, lethal death, lethal injection, murder 8, the omen, snow man, suicide packets, Tango and Cash, TNT, and tsunami. It has been sold as heroin under the brand names Flatline and Capone.

**What does it look like?** Fentanyl is available with a prescription as a transdermal patch, an oral lozenge, and as an injection. It is manufactured illicitly as powder or tablets.

**Where does it come from?** While some fentanyl is illicitly produced in the U.S. (from 1990 to 2005 at least 9 clandestine fentanyl labs were seized in the U.S.), Mexico is likely the source of at least some of the fentanyl associated with recent overdoses. In February of 2006, U.S. Customs and Border Protection agents seized 2.6 pounds of 83% pure fentanyl powder in California, just north of the U.S.-Mexico border. More recently, seizures of fentanyl-laced heroin have been reported in New York and New Jersey.

**Who uses fentanyl?** Fentanyl is typically used by heroin users in specific drug markets. It is often sold as or mixed with heroin and, less often, with cocaine. Users may or may not be aware that they are purchasing and using fentanyl.

**What are the effects of fentanyl use?** The effects of fentanyl are similar to other opioids, and include euphoria, drowsiness, nausea, confusion, constipation, low blood pressure, sedation, respiratory depression, irregular heart beat, inability to breath, unconsciousness, coma, tolerance, and addiction. Effects may be more pronounced when fentanyl is used in excessive amounts or with heroin or cocaine. Overdose effects occur rapidly, and include sudden death through respiratory arrest, cardiac arrest, severe respiratory depression, cardiovascular collapse, or severe anaphylactic reaction. Suspected overdoses should be treated rapidly with an opiate antagonist, such as naloxone.

**Can it be detected by toxicology tests?** Routine toxicology screens for opiates will not detect fentanyl. Since the only way of detecting fentanyl in blood or urine is by gas chromatography, many fentanyl overdoses may initially be classified as heroin overdoses.

SOURCES: Adapted by CESAR from Maryland Poison Center, "Fentanyl," *ToxTidbits*, May 2006 (available online at: <http://www.mdpoison.com/Site/PDFs/ToxTid/May%202006%20Toxtidbits.pdf>); National Drug Intelligence Center, U.S. Department of Justice, *Fentanyl: Situation Report*, 2006 (available online at <http://www.usdoj.gov/ndic/srs/20469/index.htm>); and Substance Abuse and Mental Health Services Administration, *Fact Sheet: Heroin Fentanyl*, 2006 (available online at [http://www.samhsa.gov/news/newsreleases/06%20Fentanyl\\_heroin.pdf](http://www.samhsa.gov/news/newsreleases/06%20Fentanyl_heroin.pdf)).