Illicit Synthetic Opioids: Understanding Potential Risks for First Responders

The severity of the opioid crisis has intensified with the introduction of highly potent illicit synthetic opioids[i] into the market. Manufactured in clandestine laboratories without regulation or pharmaceutical standards, illicit synthetic opioids are increasingly implicated in overdose fatalities. The most common varieties are fentanyl, which is 50-100 times more potent than morphine, and carfentanil, which is 10,000 times more potent than morphine. These drugs appear in heroin, MDMA, and cocaine, and are also sold as counterfeit prescription pills.[ii,iii,iv,v] The availability of these substances has contributed to concerns about their unknown potency and the risk of accidental exposure to synthetic opioids among first responders.

ACCIDENTAL EXPOSURE TO ILLICIT SYNTHETIC OPIOIDS

Anyone who comes in contact with someone who has experienced an opioid-related overdose, or who finds themselves in a position to administer naloxone—including professional first responders like law enforcement officers, firefighters, emergency medical services (EMS) providers, public health workers, as well as lay first responders like friends and families of people with opioid use disorders—may be at risk for inadvertent exposure to illicit synthetic opioids. The National Institute for Occupational Safety and Health (NIOSH) has not yet established guidelines or limits for exposure to fentanyl and its analogs, such as carfentanil, making it difficult to know how to assess risk.[vi] However, even with exposure limits in place, the ever-changing make-up and toxicity of illicit drugs makes for unpredictable and potentially unsafe conditions for first responders and others.

REDUCING THE RISK

To reduce the risk of inadvertent exposure, NIOSH suggests the following strategies:[vii]

- Avoid testing drugs in the field; instead transport to a laboratory.
- Use respiratory protection when handling or testing fentanyl or other illicit substances.
- Use gloves when handling unidentifiable drugs.
- Wear eye protection to minimize risk of eye and mucus membrane exposure.
- Consider wearing coveralls, boot covers, and protective sleeves.
- Avoid airborne dispersal of substance during a sweep, and avoid opening/closing suspicious bags or containers.
- Carry an adequate supply of naloxone to use in the case of accidental exposure.

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The American College of Medical Toxicology and American Academy of Clinical Toxicology analyzed risk for exposure to illicit synthetic opioids and concluded the following:[viii]

- Inhalation is less of a concern because airborne concentrations are unlikely to reach threatening levels.
- It is unlikely that limited skin exposure to tablets or powder "would cause significant opioid toxicity, and if toxicity were to occur it would not develop rapidly, allowing time for removal."
- Mucous membrane exposure can be prevented by using OSHA-rated splash protection.

The agencies recommend that "In the unlikely event of poisoning, naloxone should be administered to those with objective signs of hypoventilation or a depressed level of consciousness, and not for vague concerns such as dizziness or anxiety."

LEARN MORE

- **Fentanyl: Safety Recommendations for First Responders**
  Office of National Drug Control Policy
  https://www.whitehouse.gov/ondcp/key-issues/fentanyl/
  These recommendations provide unified, scientific, evidence-based recommendations to first responders so they can protect themselves when the presence of fentanyl is suspected during the course of their daily activities such as responding to overdose calls and conducting traffic stops, arrests, and searches.

- **Influx of Fentanyl-laced Counterfeit Pills and Toxic Fentanyl-related Compounds Further Increases Risk of Fentanyl-related Overdose and Fatalities**
  Centers for Disease Control and Prevention
  https://emergency.cdc.gov/han/han00395.asp
  This CDC Health Alert Network update highlights new developments on the increase in fentanyl-related unintentional overdose fatalities driven by illicitly manufactured fentanyl.

- **Fentanyl: Preventing Occupational Exposure to Emergency Responders**
  The National Institute for Occupational Safety and Health
  https://www.cdc.gov/niosh/topics/fentanyl/risk.html
  This article provides detailed recommendations for first responders who may come into contact with fentanyl or its analogues.

- **European Monitoring Center for Drugs and Drug Addiction's 2017 report:**
  http://www.emcdda.europa.eu/system/files/publications/4541/TDAT17001ENN.pdf_en
  This report provides the latest data on the drug trends and responses in Europe.

- **Canadian Community Epidemiology Network on Drug Use bulletin:**
  https://ndews.umd.edu/sites/ndews.umd.edu/files/CCENDUBulletin.pdf
  This bulletin provides information on novel synthetic opioids in counterfeit pharmaceuticals and other illicit street drugs.

- **Fentanyl Law Enforcement Submissions and Increases in Synthetic Opioid-Involved Overdose Deaths — 27 States, 2013–2014**
  Centers for Disease Control and Prevention
  http://www.cdc.gov/mmwr/volumes/65/wr/mm6533a2.htm?s_cid=mm6533a2_w
  This report provides an overview of the number of drug products obtained by law enforcement that tested positive for fentanyl during 2013–2014.

- **Increases in Fentanyl-Related Overdose Deaths — Florida and Ohio, 2013–2015**
  Centers for Disease Control and Prevention
  http://www.cdc.gov/mmwr/volumes/65/wr/mm6533a3.htm?s_cid=mm6533a3_w
  This report provides an analysis of 2013–2015 data from Florida and Ohio on the increase in fentanyl-related deaths.

- **SAMHSA Opioid Overdose Prevention Toolkit**
  Substance Abuse and Mental Health Services Administration
  https://store.samhsa.gov/shin/content//SMA16-4742/SMA16-4742.pdf
  This toolkit offers strategies to health care provides, communities, and local government for development practices and policies to prevent opioid related overdoses and deaths.

- **ACMT and AACT Position Statement: Preventing Occupational Fentanyl and Fentanyl Analogue Exposure to Emergency Responders**
  The American College of Medical Toxicology and American Academy of Clinical Toxicology
  http://www.acmt.net/_Library/Fentanyl_Position/Fentanyl_PPE_Emergency_Responders_.pdf
  This document provides the official position statement for the American College of Medical Toxicology (ACMT) and the American Academy of Clinical Toxicology (AACT) on the risk for exposure to fentanyl and its analogs for first responders.

- **Recommendations for Laboratory Testing for Acetyl Fentanyl and Patient Evaluation and Treatment for Overdose with Synthetic Opioid**
  Centers for Disease Control and Prevention
  http://emergency.cdc.gov/han/han00350.asp
  This CDC Health Alert Network update provides an overview of recommendations for public health agencies, emergency departments, state laboratories, medical examiners, and coroners regarding patients with symptoms consistent with opioid overdose and laboratory results showing an enzyme-linked immunosorbent assay (ELISA) positive for fentanyl.

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[i] Alternate terms for these substances are non-pharmaceutical/novel synthetic opioids (NSO), illicitly manufactured fentanyl (IMF), and non-pharmaceutical fentanyl (NPF).
[ii] Rudd RA, Seth P, David F, Scholl L. Increases in Drug and Opioid-Involved Overdose Deaths — United States, 2010–2015. (2016) *MMWR. Morbidity and Mortality Weekly Report.* 65:1445–1452.
[iii] Somerville NJ. Characteristics of Fentanyl Overdose—Massachusetts, 2014–2016. (2017) *MMWR. Morbidity and Mortality Weekly Report.* 66.
[iv] Gladden RM. Fentanyl law enforcement submissions and increases in synthetic opioid–involved overdose deaths—27 states, 2013–2014. (2016) *MMWR. Morbidity and Mortality Weekly Report.* 65.

[v] Centers for Disease Control and Prevention (2016). Reported Law Enforcement Encounters Testing Positive for Fentanyl Increase Across US. Retrieved from: https://www.cdc.gov/drugoverdose/data/fentanyl-le-reports.html
[vi] The National Institute for Occupational Safety and Health (NIOSH). (2017). Fentanyl: Preventing occupational exposure to emergency responders. Retrieved from: https://www.cdc.gov/niosh/topics/fentanyl/risk.html
[vii] The National Institute for Occupational Safety and Health (NIOSH). (2017). Fentanyl: Preventing occupational exposure to emergency responders. Retrieved from: https://www.cdc.gov/niosh/topics/fentanyl/risk.html
[viii] The American College of Medical Technology and the American Academy of Clinical Toxicology (2017). ACMT and AACT position statement: Preventing occupational fentanyl and fentanyl analog exposure to emergency responders. Retrieved from: http://www.acmt.net/_Library/Fentanyl_Position/Fentanyl_PPE_Emergency_Responders_.pdf