Overdose Deaths a Public Health Emergency

The sudden emergence in 2005 of fentanyl mixed with street heroin caused at least a thousand deaths and countless injuries. Fentanyl is a synthetic opiate that is approximately 50 times more potent than heroin.

Unlike earlier outbreaks, which tended to cluster close to the source of the drug, the 2005-2006 outbreaks occurred almost simultaneously in multiple American cities, large and small (Figure 1). Hardest hit were St. Louis, Chicago, Detroit, Pittsburgh, Philadelphia, and Camden, New Jersey. Overdose deaths linked to fentanyl also were reported in suburban and rural areas of Delaware, Illinois, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, and Wisconsin.

Throughout the epidemic, a dedicated group of public health and public safety officials at the local, county, State, and Federal levels worked tirelessly and cooperatively to understand and respond to the outbreak. Dr. Bertha K. Madras, Deputy Director for Demand Reduction in the Office of National Drug Control Policy, reviewed the Federal response to the 2005-2006 outbreak:

- SAMHSA released an early warning alert to treatment providers nationwide, while ONDCP notified prevention groups and community leaders;
- The Drug Enforcement Administration convened a coordinating meeting in Chicago;
- ONDCP organized a Fentanyl Forum in Philadelphia in July 2006 to bring together public safety and public health officials from the affected locales;
- CDC hosted weekly conference calls to share briefings and situational updates with health and law enforcement officials at the Federal, State and local levels.

In recognition of the gravity of the outbreak, the Center for Substance Abuse Treatment (CSAT) of the Substance Abuse and Mental Health Administration (SAMHSA) determined to learn from the epidemic so as to develop an early warning and response system should a similar situation occur in the future.

Accordingly, CSAT organized a debriefing meeting to bring together public health officials, epidemiologists, clinicians, community outreach workers, regulatory and law enforcement officials, data analysts, and policymakers to analyze the response of Federal, State, county, and local agencies to the overdose epidemic, and to identify practices that ought to be incorporated in future readiness planning.
The “Consultation and Debriefing Meeting on the Response to Fentanyl-Related Overdoses and Deaths – Lessons for Dealing with Future Outbreaks” met August 28th and 29th in Washington, DC.

In his charge to the meeting participants, CSAT Director H. Westley Clark, M.D., J.D., M.P.H., CAS, explained that “CSAT recognizes the need to learn from this experience, and intends to use the discussions at this meeting to help develop an effective early alert, warning, and response system to intervene effectively if we are faced with an overdose outbreak in the future.”

Dr. Clark asked the participants to: (1) develop clear descriptions and case definitions of the outbreaks in various metropolitan areas; (2) review the practices and strategies employed in identifying and responding to the outbreaks through early interventions involving public safety, public health, emergency medical services, community outreach programs, and addiction treatment programs; and (3) identify key elements (analytic, programmatic, policy, logistical, et al.) that should be in place to facilitate early identification of and rapid response to similar problems in the future.

In response, meeting participants applauded the efforts of SAMHSA, ONDCP, DEA and other Federal agencies to bring together experts and stakeholders to address this urgent public health threat, and encouraged the agencies to continue their support for such collaboration. They also suggested a series of strategies and action steps to help prepare for – and hopefully minimize – the public health impact of similar epidemics in the future. Meeting organizer Kenneth Hoffman, M.D., M.P.H., a senior medical advisor in CSAT’s Division of Pharmacologic Therapies, summarized the lessons learned and forward-action strategies as follows:

**Lesson 1. Sophisticated surveillance methods can speed problem identification.** The ability to identify new drugs and drug analogs is the important first step in rapidly identifying and responding to outbreaks of drug overdoses and deaths. Pharmacoepidemiologic surveillance – using data from medical examiners, emergency medical services, hospitals, overdose prevention programs, and law enforcement – can provide a better understanding of the extent of an overdose outbreak and be of great value in targeting responses. Indeed, every stakeholder group has knowledge and skills to detect and respond to an outbreak, but they must be brought together and given sufficient motivation and resources to employ what they know

- Useful notification and alerting systems already exist and are used regularly by enforcement agencies to share information across local, regional and State borders. Public health agencies should learn how to use these notification systems and contribute information as appropriate.

- One or more national coordinating centers is needed, where data from multiple sources can be compiled, analyzed, and rapidly disseminated to public health and law enforcement agencies whenever a drug overdose outbreak occurs.

**Lesson 2. A proactive communication strategy is vital.** Clear risk communication is vital. Communication mechanisms need to be systematized so that, in the event of a future outbreak, members of all the affected populations and stakeholder groups can be brought together quickly. Application of the Drug Enforcement Administration’s Fusion Center concept could facilitate such communication.

- The media are the ultimate conduits of information and risk communications from law enforcement and public health agencies. Therefore, officials should provide the media with as much useful information as possible.

- Direct outreach to vulnerable populations holds the promise of extending access to drug treatment and providing an opportunity to address related public health concerns, including communicable diseases such as HIV, sexually transmitted diseases, and hepatitis.
Lesson 3. **Addiction treatment is the best overdose prevention.** The early fentanyl overdose victims were not opioid-naïve individuals, but long-term heroin addicts. Stigma prevented some members of this vulnerable population from seeking care, while lack of financial and other resources poses a barrier to care for others. Lack of awareness of treatment options led to additional gaps in the safety net.

- Public health officials also should communicate a policy to the addiction treatment community and other health care providers and payers that drug overdose is a bona fide health care emergency that must be accorded high priority in admissions and reimbursement policies.
- CSAT should develop and disseminate clinical practice guidelines for use by emergency medical services personnel and other health care professionals in identifying and managing overdose, including responsibilities for patient referral, management, and followup.

Lesson 4. **Collaboration and cooperation are vital.** Of all the fentanyl responses described in the meeting, not one involved either law enforcement or public health agencies acting alone. For example, within days of being told by the Cook County medical examiner that a series of overdose deaths in Chicago were linked to fentanyl-laced heroin, the Chicago Police Department formed a task force of local and federal officials. Authorities in Michigan took a similar approach, forming the Detroit-Wayne County Fentanyl Work Group.

- The “task force” approach is a proven strategy for mobilizing resources, ensuring coordination and sharing of information and intelligence, and for maximizing outcomes.
- For jurisdictions that have yet to develop such comprehensive approaches, programs like those developed in Chicago, Pittsburgh and New York City provide useful models of effective collaboration, communication, and community outreach.

Lesson 5. **Preparedness is essential.** Meeting participants agreed that, over the long term, we can expect to see more analogs of fentanyl and other potent drugs manufactured in illicit laboratories within and outside the United States. As with fentanyl, recipes for manufacturing potent drugs of abuse are readily available on the Internet. Indeed, entire chat rooms and websites are devoted to the exchange of information and recipes for making potent substances like fentanyl. These and other challenges make it imperative that all stakeholders work together to identify and respond to problems rapidly, accurately, and effectively.

- To speed the response to future outbreaks, it would be helpful to identify in advance those experts whose participation is crucial so that their involvement in a future response can be assured. Each team should include a DEA forensic chemist, representatives of national enforcement and public health agencies, and a medical pathologist or coroner from the U.S. Public Health Service, who could work alongside local counterparts.
- Drug overdose needs to be recognized as a public health issue and a medical emergency. Addiction treatment professionals and other health care providers need to be alert to the risk of overdose in the patients they treat. EMS personnel need to recognize overdose episodes as acute medical emergencies that require immediate care and subsequent followup with formal addiction treatment services.

These strategies follow an approach recommended to the meeting participants by Dr. Kevin Yeskey, Deputy Assistant Secretary in the Department of Health and Human Services, where he leads the Office of Preparedness and Emergency Operations. Dr. Yeskey explained that, based on after-action reviews of the Federal response to Hurricane Katrina and other disasters, preparedness experts have concluded that effective responses to public health emergencies must involve five components: organization, situational
awareness, communications, regionalization, and evidence-based practices. The ultimate goal of such plans, he added, is to translate “lessons observed” into “lessons learned.”

Dr. Yeskey cautioned that the knowledge gained from the 2005-2006 epidemic should not be ignored until another outbreak occurs. Instead, he said, it should be captured in a working document – an “after action” report – that can be widely disseminated to public health and public safety officials at the State, regional and local levels.

Meeting participants agreed that CSAT and SAMHSA have created a valuable national network, and urged that the necessary steps be taken to sustain it at the national level, as well as to encourage replication of the network at the State and local levels.

**Figure 1: Trends in Fentanyl Overdose Deaths, 2005-2006**

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**Overdose Deaths Related to Illicit Fentanyl**

April 4, 2005 – March 28, 2007

**Total Confirmed Deaths: 1,013**

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Source: DeMia Peters, Drug Enforcement Administration, Meeting Presentation August 29, 2007.