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# Best Practices

## IN EMERGENCY SERVICES

## Biosurveillance Technology Used to Combat Drug Abuse

Quick Look

By Jenifer Goodwin

The Cambridge (Mass.) EMS system is putting biosurveillance technology to novel use: combating drug abuse. In Massachusetts, overdoses from heroin and prescription drugs such as oxycodone, codeine and methadone increased sixfold from 1990 to 2007, according to the Cambridge Prevention Coalition, a drug abuse prevention agency that's part of the Department of Human Service Programs. Cambridge was one of 15 cities to receive state funding to evaluate the issue and find ways to reduce the problem.

For help, the Coalition turned to Pro EMS, a private company that provides emergency response in the city in conjunction with the Cambridge Fire Department. About a year ago, Pro EMS began using biosurveillance technology provided by FirstWatch of Encinitas, Calif., to monitor real-time trends in H1N1 and other hazards, as well as to track the geographic distribution of 911 calls to help with deployment decisions. By integrating FirstWatch software with the electronic health record tablet already in use, Pro EMS could give the Coalition real-time alerts about drug overdose situations, as well as trends and patterns. Pro EMS is also helping the Coalition track underage drinking trends and incidents.

Early detection means early intervention and action, says Gisela Rots, director of the Cambridge Prevention Coalition. "Using the FirstWatch system allows us to complete the picture of our data analysis," she says. "Having real-time data

that let us track the number of overdoses, the geographic area, the kind of drug, and other important information helps in achieving our goals, which is to reduce the overdoses and provide help to those users and their families."

Privacy laws prohibit Pro EMS from sharing names or exact addresses with the Coalition, says Pro EMS CEO Bill Mergendahl, but the company can provide information on the streets in which overdoses occur, as well as the age, gender and other demographic information about addicts. Those data help the Coalition focus its interventions and initiatives where they're most needed and where they will have the most

impact. For example, if the data show a trend in people overdosing on some new combination of drugs, the Coalition can alert the community about the danger, as well as

“Early detection means early intervention and action.”

— Gisela Rots, Director of the Cambridge Prevention Coalition

the local shelters and hospitals, Rots says.

Ultimately, reducing drug overdoses could also benefit the EMS system by leading to decreased numbers of overdose-related 911 calls and transports, Mergendahl says. For example, in 2007, for every opioid-related death, there were 47 non-fatal incidents treated at Massachusetts acute care hospitals, according to the Coalition. "It's extremely important for EMS to be connected with public health issues in the community that we serve, and drug abuse has always been a big one in our area," he adds.

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## In Cambridge, data entry work can help save lives

The Boston Globe

By Meghan E. Irons, Globe Staff | May 22, 2010

CAMBRIDGE — When paramedic Rachid Sbay arrived in Harvard Square that day, the pregnant young woman was barely breathing. The tracks on her arms were a clue to the reason.

"She had OD'd on heroin," he recalled recently.

Sbay and his partner administered aid to the woman, took her to a local hospital, then used a laptop computer to enter a mass of information about her, including her age, history of overdoses, the drugs she had used, and the place she was found.

Facing a difficult drug problem and one of the state's highest death rates from opioid overdoses, Cambridge is collecting details about drug problems from first responders, who enter them in a database originally used to track swine flu cases. The city is using the system to pinpoint drug hotspots and alert health officials to trends, helping them to allocate law enforcement, treatment, and aid. Harvard and MIT have adopted the system to get a clearer picture of student drug and alcohol problems.

"Part of the information sharing is to help us get a clearer picture of what is going on on our campuses so that we can address it," said Daniel Trujillo, associate dean in charge of MIT's substance abuse prevention programs.

Cambridge's drug problems mirror those across the state, where overdose fatalities from drugs such as oxycodone and heroin rose from 94 in 1990 to 600 by 2007, according to the most recent figures available. In Cambridge, 22 people died of opioid-related poisoning from 2004 to 2006, the state figures show.

The database in Cambridge alerts officials at the Cambridge Prevention Coalition, a community group that works closely with the city, sending computer-generated e-mail each time a responder enters data about drug-related problems.

Gisele Rots, who directs the coalition, has been analyzing data from the system and then informing police, fire officials, schools, and shelters about the shifting landscape of drug use in the city.

She found that many overdoses involved people who did not live in Cambridge, a fact that led officials to believe users were coming to Cambridge to tap into a plentiful and potent supply of drugs. She also discovered a trend, that users were mixing heroin with Xanax, a potentially deadly combination.

"If we know that people are mixing the drugs, then we give a heads up to our outreach workers," Rots said.

She receives the information within minutes of an incident, instead of days or weeks, as in years past. That kind of speed has helped officials quickly recognize trends and formulate responses.

Fire Chief Gerald Reardon said the data is helping his emergency responders spot areas of concern. He said he hopes the city's team approach will serve as a model. "Prevention is what we want," he said. "If the whole state did this, we will get a handle on the problem."

Cambridge's database is part of an effort initiated two years ago when the city was tapped by the state to devise a community-wide effort to stamp out the problem because of its high number of opioid deaths, said Michael Botticelli, who heads the state's Substance Abuse Program.

The state gave the city a five-year, \$150,000 grant to track and stop the overdoses. Boston, Brockton, Worcester, Springfield, and Lynn also received grants, Botticelli said.

"One of the things that we require is that communities convene schools, police, and hospitals to do an analysis of who is overdosing, who is using, and what factors are triggering overdoses," Botticelli said.

The cities have found a few trends. One is that many opioid users fear calling 911 because of concern about being arrested, and another is that many overdose in the company of friends and family.

Sbay sometimes wonders about the pregnant woman he found on the streets of Harvard Square, dirty, angry, and lost.

In his 17 years as a paramedic for Professional Ambulance service, he has noticed that the overdose population is getting increasingly younger and that opioid use does not discriminate.

"One of the misconceptions is when people talk about heroin users, they talk about the homeless people," he said. "But you'd be surprised. It's the mother, the father, the son. It's everyone."

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