

Synthetic pot generates national warning to ER docs

healthnewscolorado.org/2014/01/22/synthetic-pot-generates-national-warning-to-er-docs

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By Katie Kerwin McCrimmon

Colorado researchers are warning ER doctors around the country to prepare for potentially deadly outbreaks from the use of new types of synthetic marijuana known as K2, Spice and Black Mamba.

In August and September, 263 people flooded Colorado ERs after using the designer drugs, and officials at [Colorado's Department of Public Health and Environment](#) suspect at least one Colorado death may have been linked to the synthetic pot. Several patients suffered seizures and dozens needed ventilators and had to be hospitalized in intensive care units.

In a study of the outbreak to be published in the [New England Journal of Medicine](#) on Thursday, Dr. Andrew Monte and fellow researchers at the University of Colorado and Rocky Mountain Poison and Drug Center shared findings about the dangerous synthetic marijuana.

Colorado lawmakers also are considering new legislation to crack down on the sale of the chemical products that are easy to buy in convenience stores and head shops. Many are marketed as incense and say they are not for human consumption.

But that's exactly why people buy them, said Monte, an assistant professor in emergency medicine and medical toxicology at the [CU School of Medicine](#).

While legalization of recreational marijuana has made Colorado a hotspot for cannabis, synthetics are far more dangerous, Monte and public health officials say.

"A lot of these patients were having seizures. We're not aware of marijuana causing this type of effect," Monte said. "There's a misconception that this can be safe, but these synthetics can be much more dangerous (than pot).

"Synthetic marijuana is not a very apt name for it. That name may contribute to the perceived safety of these drugs," he said. "These can be much more dangerous and much more severe."

Monte said the drugs can be up to 1,000 times stronger than traditional marijuana. And the newest types of synthetics seem to be having more complex and harmful effects on the brain, leading to delirium, seizures and strokes.

"Synthetic marijuana is illegal under DEA law, but companies that make it are a step ahead with new chemicals and packaging on standby all the time," said Monte.

Because of increased use and more dangerous health effects, state health officials aggressively have tried to spread the word among young men — who are the primary users of synthetics — that the fake pot is much more akin to meth than plant-based cannabis.



A sample of Sample of synthetic marijuana recovered from a patient. Image courtesy of Dr. Andrew Monte.

“You don’t know what you’re getting,” said Mike Van Dyke, toxicology section chief for the Colorado Department of Public Health and Environment (CDPHE).

Van Dyke said one Colorado death is suspected of being linked to the synthetic marijuana. In other states, synthetics have caused fatalities, he and Monte said.

During Colorado’s outbreak, doctors worked together with the U.S. Centers for Disease Control and Prevention and the CDPHE. To try to prevent poisonings, Van Dyke and other health experts met with young people to talk about their perceptions of synthetic pot.

“Kids associated it with a more natural product and were thinking it’s not much of a problem. We told them, ‘This isn’t natural. This is a synthetic chemical that’s sprayed on plant material. You don’t know what you’re smoking,’” Van Dyke said.

Fearing an extended outbreak last fall, health officials quickly created ads for buses and bar bathrooms that warned: “Fake pot, real danger.”

While health officials have deemed the Colorado outbreak to be over, Monte and colleagues continue to see people poisoned by the synthetics. Because blood tests don’t detect the chemicals and there is no reporting requirement in hospitals, health officials are not formally counting additional cases.

“We’re absolutely continuing to see people. It’s more common now than it was even two years ago. This is going to continue to be a problem,” Monte said.

In fact, while working this week at the University of Colorado Hospital’s Emergency Department, Monte cared for a patient suspected of using the synthetic pot.

“I took care of guy having seizures. In some respects, I think this is the desired effect. Obviously it’s not good business for someone making these products to be killing off users,” he said. “But there’s a group that’s looking to get high.”

Others use the synthetics because they are trying to pass drug tests and the synthetics don’t show up.

“If they’re being drug-tested in the military or they’re on parole or getting tested for work, there is no clinical test for these agents,” Monte said.

It’s unclear whether the synthetics that caused the August-September outbreak were a bad batch or stronger by design.

“There’s no way to know. It’s unclear why this batch was worse than others. Maybe the molecule is a bad one or maybe the concentration was high,” Monte said.

Originally created by pharmaceutical companies as possible alternatives to marijuana, synthetics have been evolving over time and getting more dangerous, Monte said.

Among the study’s findings:

- Between Aug. 21 and Sept. 19, the synthetic marijuana made 263 people severely ill.
- The median age of victims was 28, older than the average pot user, which led researchers and public health officials to think that many were trying to evade drug testing.
- The vast majority of the 263 cases — 76 percent — were male.



- Most of the cases surfaced in the Denver area and in Colorado Springs, with 76 surfacing at Denver Health and University of Colorado Hospital.
- Many patients were agitated and fought care.
- 15 percent suffered seizures.
- Most had dangerously fast heart rates, then within hours some suffered dangerously low heart rates.
- About 13 percent had to be placed on ventilators and admitted to ICUs.

Van Dyke said Colorado already has relatively strong laws to prohibit synthetics, but manufacturers simply change the chemical makeup of the drugs to bypass laws.

“Our laws are some of the strongest in the country to prevent this stuff, but enforcement is difficult and this stuff still gets sold,” he said.

During the outbreak, police raided stores suspected of selling synthetic marijuana, including a store called Os Tobacco Shop on East Colfax Avenue.

An analysis of Zip codes for the sick patients showed that the problem was greatest in East Denver, Aurora and Colorado Springs.

Billboards targeted those areas and some ads remain on buses. While the number of illness has certainly declined, Van Dyke said it's impossible to know whether the public health campaign helped decrease usage.

It's also unclear how pot legalization will affect use of synthetics.

“I think that legalizing marijuana is going to reduce the perception of risk for using marijuana. I don't know how that translates to synthetic marijuana,” Van Dyke said.

Public health officials are trying to give young people a clear message that the two are very different.

“This is not like marijuana. This is a completely different drug. This is a chemical ... and you have no idea what drug you're taking when you get one of these packages.”

Monte fears that outbreaks will continue to become more severe throughout the U.S.

“We're going to continue to see this. It's available on the Internet and is easy to market in convenience stores and on the streets,” he said. “Ultimately, we need a better way to track all of these toxic exposures.”

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