ROCIC SPECIAL RESEARCH REPORT

Emerging Drug Trends

Zohydro - Gravel - Acetyl Fentanyl - Pump-It Powder

New Heroin - Lemon Drop - Dabs - THC Puppy Chow

Tramadol - Methadone - Suboxone - Krokodil - Bath Salts

Transdermal THC - Spice - Molly - Benzo Fury

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Emerging Drug Trends

By ROCIC Publications Specialist Jennifer Adkins
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New drugs are emerging at an unprecedented rate as manufacturers of "legal high" products use new chemicals to replace those that are banned. These new chemicals take the place of heroin, morphine, and amphetamines. These drugs are highly accessible, touted as legal, and perceived as safe.

However, despite the popularity in designer drugs and legal high products, the abuse of heroin and prescription painkiller medication is still trending throughout the country.

This report is designed to assist law enforcement and first responders in recognizing emerging drug trends and the dangers they pose to their communities and their officers.

Several ROCIC Special Research Reports are referenced in this document and can be downloaded from the ROCIC Publications webpage at rocic.riss.net/publications. Additional resources for the drugs discussed in this report can be found on the ROCIC Emerging Drug Trends website at rocic.riss.net/publications/emerging-drug-trends. Sources of information for this report are listed on the last page of this document.

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Opioid Abuse

The introduction of the powerful new opioid painkiller Zohydro has spotlighted the nation's growing prescription drug abuse problem. Opioids are the most commonly abused prescription drug. Opioids are synthetic chemical substances made by drug companies that act in the body similar to the opiates, i.e., drugs derived from the opium plant, such as heroin, morphine, codeine. Examples of opioids include fentanyl, oxycodone, methadone, and hydrocodone.

Zohydro

A powerful new prescription painkiller known as Zohydro ER hit the market in March 2014 amidst widespread concern that the drug could trigger a disastrous spike in overdoses and deaths. Zohydro is a potent extended-release formulation of hydrocodone without the additives of aspirin or acetaminophen and without anti-abuse formulation.

The FDA has stated the drug is safe if used correctly and is a necessary alternative for patients who built up a tolerance to other opioids; but with the deadly heroin and pain pill epidemic occurring throughout the United States, the potential for abuse is apparent.

"The last thing we need is another prescription opiate on the street," said Sgt. John McGuire with the Louisville, Ky. P.D. "There is no lack of prescription pain medication out there, so, I guess the one question that comes to mind is, why do we need another one?"

Law enforcement fears that the medication will be diverted and fall into the wrong hands and that drug addicts will crush the capsules and consume the medicine at full strength rather than as it was intended. The effects of hydrocodone are similar to heroin, and Zohydro contains 10 times the amount found in other painkillers, as much as 50mg of hydrocodone in a dose.

A single oxycodone pill costs $30 on the street; $100 buys a gram of heroin. Synthetic heroin products are even cheaper.

Zohydro can be crushed, chewed, or mixed with alcohol and still retain full potency. Users can also simply separate the halves of the capsule and snort it; or solubilize with saline and inject.

Consequently, the abuse of Zohydro ER has the potential of becoming the next major medical epidemic when it comes to substance abuse, stated an FBI Situational Information Report. There will more than likely be an increase in pharmacy robberies, overdose patients, and a need for addiction treatments.

Zohydro is a Schedule II drug and has no tamper-resistant features. Hydrocodone belongs to the opioid family of medications, a highly addictive group of drugs that includes morphine, codeine, methadone, and oxycodone.

Because of the risks of abuse, Zohydro is said to be limited to patients for whom alternative treatment options are ineffective or would otherwise inadequately provide sufficient pain management.

"The thought is it won't be used illegally, but it will be," said Sgt. McGuire.

Fentanyl

Fentanyl is a prescription narcotic used to relieve severe or chronic pain, commonly used for cancer patients or as a last-resort pain medication. It's available as a skin patch, lozenge, pill, shot, and a dissolvable film strip. As a recreational street drug, fentanyl may be referred to as China White.

A batch of white heroin mixed 50:50 with fentanyl was recently responsible for approximately 100 deaths in the United States, with 36 occurring in Pennsylvania in January 2014. The drugs were contained in bags labeled Bud Ice, Income Tax, and Theraflu.

There was even speculation that Philip Seymour Hoffman was killed by a similar blend when the actor was found dead in January 2014. The drug envelopes found in his apartment were marked Ace of Spades and Ace of Hearts.

Acetyl Fentanyl

Mixing fentanyl with heroin isn't new; however, the development of a synthetic fentanyl has just started to make headlines. Three overdose deaths in North Carolina have been linked to acetyl fentanyl, a designer opioid drug closely related to the prescription pain killing opioid fentanyl. Two deaths occurred in Jefferson Parish, La. due to the drug and the use of acetyl fentanyl seems to be spreading throughout the country.

Acetyl fentanyl is often marketed as heroin but it is five times more potent than heroin, 16 times more potent than morphine. Therefore, it is leading to many overdose deaths, particularly in Rhode Island and Pennsylvania. The pills are also peddled as oxycodone.

The prescription drug fentanyl is actually even more potent but is safe to use in pharmaceutically-controlled dosages. A specific antidote, naloxone, can be administered to block the effects of heroin, morphine, fentanyl, and other opioids.

Acetyl fentanyl is difficult to detect and easy to miss in drug overdose cases. Other drugs were detected in most cases, including opioids, alcohol, and benzodiazepines; however, one person died solely from acetyl fentanyl.

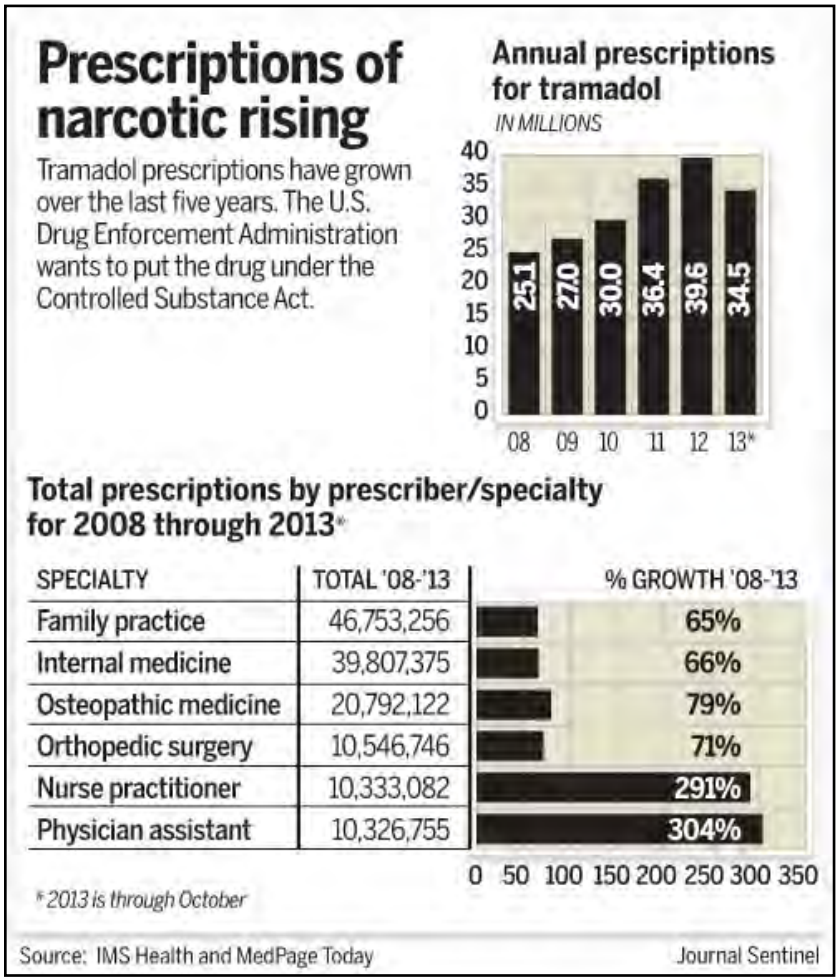
Acetyl fentanyl is not scheduled under the Controlled Substance Act. With heroin use skyrocketing in the United States, authorities worry that without any control over acetyl fentanyl that more overdose deaths can be expected.

Tramadol

Tramadol is a Schedule IV opioid analgesic used to treat pain, similar to codeine. Recreational use can be dangerous due to the possibility of convulsions with higher doses. When taken orally, rather than injected, it produces opiate-like effects similar to oxycodone. Tramadol costs $1-2 for a 50mg tablet on the street.

Adverse effects include dizziness, nausea, constipation, vertigo, headache, and vomiting. In extreme cases it may cause hypertension, hallucinations, tremors, respiratory depression, blurred vision, liver swelling, and speech disorders.

In 2011, the drug was linked to 20,000 emergency room visits throughout the country. In Florida, there were 379 overdose deaths from Tramadol. In most of the cases, Tramadol was combined with other drugs or alcohol. Also in 2011, 2.6 million people ages 12 and older used Tramadol for nonmedical purposes, according to the DEA.



Methadone

More than 15,500 people die every year of prescription drug overdoses, and nearly one-third of those overdoses involve methadone, according to the Centers for Disease Control (CDC). Methadone has been used for decades to treat drug addiction, but in recent years it has been prescribed to relieve pain.

Methadone is available as a low-cost generic drug. The synthetic opiate is taking a toll in Northern Kentucky and other parts of the country, as heroin addicts try to detox themselves, self-dosing with methadone and overdosing. Methadone is also used for a heroin fix.

For more information on the heroin epidemic, read ROCIC's Special Research Report *The Heroin Resurgence: A Painkiller Epidemic.*

Since 2005, prescriptions written for methadone in Kentucky have decreased; however, the CDC reported that most users are finding their methadone on the street.

Taking methadone improperly can slow breathing. Death could occur if the breathing becomes too weak. It can also increase the effects of alcohol. On the street, methadone costs $0.50-$1 per mg.

With the surge in popularity for methadone, pharmacy burglaries have increased in some areas. To share information about pharmacy burglaries occurring in your area, go to ROCIC's Pharmacy Burglary website at https://rocic.riss.net/publications/pharmacy-burglaries.

Suboxone

Similar to methadone, Suboxone is used to treat drug addiction and is sometimes prescribed for chronic pain management. In 2012, Suboxone generated $1.55 billion in sales in the United States, surpassing well-known medications like Viagra and Adderall. Its success was partly fueled by the nationwide opioid-abuse epidemic.

Buprenorphine, an opioid in Suboxone, can produce euphoria and cause dependency. Its effects are milder than methadone, making overdose deaths less likely. Despite this, it was suspected in 420 deaths since its emergence in 2003, according to the FDA.

Although widely available by prescription, cash-only buprenorphine clinics have developed that cater to addicts, recreational users, and inmates who use it as "prison heroin" – especially in a new dissolvable filmstrip that is ideal for contraband.

"It's a thin strip they'll put it in the Holly Bible, let it melt, and eat a page right out of the good book," said Ken Mobley, a jailer in Whitley County, Ky., who randomly screened 50 inmates recently and found 21 positive for Suboxone.

On the street, Suboxone costs $5-$8 per pill. Side effects include slow breathing, dizziness, liver problems, nausea, sweating, stomach pain, and constipation. For more information on prescription drug abuse, read ROCIC's Special Research Report *Prescription Drug Abuse: Unsafe, Illegal, and Escalating.*

Opiate Abuse

Opiates, such as heroin and codeine, are derived from the poppy plant, which contains opium. Heroin is the most popular opiate, and has flooded the U.S. and reached a large market of American pain-pill addicts seeking a less-expensive high. Overdoses and emergency room visits have skyrocketed across the country, and more abusers are dying from a drug whose purity can be hard to judge. Codeine appears in dozens of different formulations, including cough syrup. Some users use scams to obtain prescription-strength cough syrups from doctors, others burglarize pharmacies, and others purchase syrup that has been smuggled in from Mexico.

Sorting Out The Opium Alkaloids

Opium is the dried latex from the poppy plant and contains 12 percent morphine, plus other analgesic (painkilling) alkaloids such as codeine and thebaine. Opium has been used as a painkiller since ancient times. Illegal painkilling drugs derived from opium are known as narcotics. Morphine, codeine, and thebaine are three of six medically significant alkaloids produced in the opium poppy plant. (The other three do not work as painkillers.)

Morphine is the most abundant opiate found in opium. It was the first active ingredient purified from a plant source, originally isolated in 1804 in Germany. Morphine was widely used after the invention of the hypodermic needle in 1857. It acts directly on the nervous system to relieve pain and has a high potential for addiction and dependence.

Codeine was isolated in 1832 in France, and is now the most widely used opiate in the world. Codeine can be directly extracted from opium, but most codeine is synthesized from the more abundant morphine. Codeine is commonly available through prescription-based cough syrups and tablets.

Heroin was synthesized in 1874 in Germany by mixing morphine with two types of acids. Twenty three years later, Bayer pharmaceutical company claimed to have originated heroin while trying to produce codeine. The company marketed heroin as a "miracle drug," more effective than codeine as a cough medicine and better than morphine as a pain killer. In 1913, the number of heroin addicts began to skyrocket and heroin became banned in many countries.

Oxycodone (OxyContin) is a semi-synthetic opioid derived from thebaine. It was developed in 1916 in Germany shortly after Bayer had stopped mass production of heroin. It was hoped that a thebaine-derived drug would retain the analgesic effects of morphine and heroin with less dependence. The U.S. accounts for 82 percent of the world's consumption of Oxycodone.

Hydrocodone is a semi-synthetic opioid derived from codeine in Germany. By itself, hydrocodone is a Schedule II drug; however, it is almost always combined with another medication – often a painkiller such as acetaminophen. Four pharmaceutical companies are developing extended-release formulations of hydrocodone by itself, including the Zogenix product Zohydro that was launched in March 2014. In 2007, 99 percent of the worldwide supply of hydrocodone was consumed in the U.S.

Hydromorphone (Opana) is a semi-synthetic derivative of morphine. Hydromorphone is to morphine as hydrocodone is to codeine.

Methadone is a synthetic opioid developed in 1937 in Germany as an alternative to morphine. During World War II, a team of German scientists began synthesizing a substance caled Hoeschst 10820 as a result of short supplies of morphine. It was introduced into the U.S. in 1947 as an analgesic. Methadone is mainly used in the treatment of opioid dependence, such as with heroin. Abuse of methadone results in 5,000 overdose deaths per year.

Fentanyl was first synthesized from pethidine at a pharmaceutical company in Belgium. Pethidine was one of the first synthetic opioids created to replace morphine. The fentanyl transdermal patch and the flavored lollipop were introduced in the 1990s. To date, more than 12 different analogues of fentanyl have been produced and trafficked into the U.S. Fentanyl analogues may be hundreds of times more potent than heroin and morphine. Some dealers mix fentanyl powder with heroin to increase potency or to compensate for low-quality heroin, causing an outbreak in overdose deaths beginning in 2006 in the northeast U.S.

Drug	Dosage	Street Price
Morphine	15-60 mg pill	$5-$15
Codeine	8oz bottle	$200-$300
Heroin	50 mg bag	$10-$22
Methadone	10 mg pill	$5-$8
Hydrocodone	10 mg pill	$5-$8
Oxycodone	10 mg pill	$10-$15
Fentanyl	50mcg patch	$20-$30

Source: Various public drug forums

Heroin

Law enforcement officials across the Southeast note that heroin use is on the rise everywhere, across all demographics, in some places verging on an epidemic. The resurgence of heroin seems to be directly related to the decrease in the availability of opioid prescription drugs (due in large part to stricter laws, pharmaceutical advances, and increased law enforcement) and the availability of lower-cost, higher-quality heroin from Mexico.

Three percent of U.S. high school students have tried heroin, according to a 2013 survey by the Centers for Disease Control. Nearly 50 percent of young people who used heroin reported using prescription painkillers such as Oxycontin or Vicodin first.

Heroin most often kills by causing respiratory failure. An overdose causes the breathing to slow, and eventually stop entirely.

In contrast to the 1970s and 1980s, when it ravaged inner-city neighborhoods, heroin is taking hold in rural communities that are unprepared to deal with the fallout, according to the 2013 White House National Drug Control Strategy report. The reemergence of heroin has affected most states in the Southeast, from Florida to Virginia and Texas to North Carolina, according to the report.

Most agencies report the primary heroin user to be Caucasian, age 17-25. There is no socio-economic limit on heroin users; it is no longer confined to the poor city areas or drug hubs.

Heroin overdoses frequently occur when the grade of heroin exceeds the user's normal purity percentage. Or they combine heroin usage with something else, such as prescription pain killers or alcohol.

"The increased effort on the pill problem may have increased the amount of heroin being used, but I believe the increase of pills is the cause of the heroin epidemic," said Sgt. Gene Donegan, Metro Nashville, Tenn. PD. "After they build up a tolerance to the pills, they are looking for a better high."

Heroin purity increased as the price per milligram decreased between 2010 and 2011. An 80mg Oxycodone is $80, while a half gram of heroin is approximately $60, less if the user is a steady customer.

For more information on heroin, read ROCIC's Special Research Report *The Heroin Resurgence: A painkiller epidemic.*

Purple Drank

Purple Drank or Lean, a mixture of Sprite, Jolly Ranchers, and codeine, is consumed by youth. If prescription codeine is unavailable, DM cough syrup is often substituted.

Purple drank originated in the Southern hip hop community, specifically Texas. Other names include sizzurp, syrup, drank, barre, purple jelly, Texas tea, and Tsikuni. Cough syrup containing promethazine and codeine are usually purple in color, but there are other colors of cough syrup that work the same way, including a golden-colored hydrocodone-based syrup.

The prescription-only cough syrup is a controlled substance with widespread recreational use. It is not unusual to see large quantities of the substance being sold and transported, according to the DEA. It is usually obtained by doctor shopping, forged prescriptions, and pharmacy theft.

Demand for the syrup has sent its price soaring on the streets. Syrup that typically costs $12 per pint is sold to street dealers for $300 per pint. Dealers sell it by the ounce for $40-$80.

The drink produces euphoria and causes motor skill impairment that make users move slowly or lean over. Overdosing on the syrup is potentially fatal. Too much codeine, which is produced from morphine, can depress the central nervous system and stop the heart and lungs.

Anti-Energy Drinks

Commercial bottlers have now produced non-codeine based legal drinks such as Sippin Syrup and other anti-energy drinks (Drank, Unwind, Mary Janes Relaxation Soda) to replace Purple Drank. Anti-energy drinks have the opposite effect of energy drinks, like Red Bull, and are marketed as "extreme relaxation beverages."

Anti-energy drinks are typically sold as a dietary supplement since its ingredients (melatonin and kava kava) aren't FDA approved food additives. Users report effects similar to alcohol intoxication or cold medication/syrup.

The manufacturers of Sippin Syrup also sell a dessert-style brownie called a 1/2 Baked Brownzz, which contains the same ingredients contained in Sippin Syrup.

Although the products have no illegal ingredients, there is concern that the anti-energy drinks could be abused by young people in a manner similar to cough syrup or cold medicine. The label on the drinks warns users not to exceed two servings within a 24-hour period, and not to drive or operate heavy machinery.

Lemon Drop

Lemon drop is a homemade hallucinogenic drug produced by mixing a painter's solvent(Naphtha) with over-the-counter drugs, such as Robitussin cough syrup, Sucrets, or Vicks Formula 44. Lighter fluid can be used to replace Naptha but is usually not preferred due to the bad aftertaste.

Once the solvent is mixed with the drugs, the mixture is heated to extract the DXM (Dextromethorophan) from the drugs. The by-product of this process is mixed with either lemon juice or Country Time powdered lemonade mix and cooled, which causes the juice to bond with the DXM. Lemonade is used if the lemon drop product is to be ingested orally and real lemon juice is required if the lemon drop is to be swallowed via capsule form.

Instructions for extracting DXM can be found via the Internet, including dextroverse.org. The mixture can be found offered for sale on retailing sites or personal sales ads.

Krokodil

Desomorphine is another drug replacing heroin, and is the main ingredient in Krokodil, aka the zombie drug. Krokodil is the street name of a synthetic heroin product that's extremely popular in Russia, aka Crocodile. It is used by injection; however, it rots the flesh around injections, turns the flesh grey, green, and scaly until the skin peels away and the bone is exposed – leading to amputated limbs and death. Krokodil addicts' life expectancy runs one to three years once they start on the drug.

Desomorphine is a synthetic morphine derivative, made from codeine processed with gasoline, lighter fluid, industrial cleaning fluid, paint thinner, and red phosphorus. The cooking process takes 30 minutes and is similar to the manufacture of methamphetamine. The resulting drug is injected for a 90-minute high with similar effects to heroin. The production of Krokodil leaves several pounds of hazardous waste, similar to methamphetamine.

Desomorphine is much cheaper than heroin and ten times more potent than morphine. It costs $6 to $8 per injection.

"This is really frightening," said Dr. Aaron Skolnik, a toxicologist at Banner Good Samaritan Poison and Drug Information Center in Arizona. "This is something we hoped would never make it to the U.S. because it's so detrimental to the people who use it."

A few cases have been reported in the U.S. but remain unverified by the DEA. For more information on Krokodil, read ROCIC's Special Research Report *Krokodil: Horrific flesh-eating drug (desomorphine) stronger, cheaper than heroin.*

Synthetic Cathinones and other Designer Drugs

Synthetic cathinones have one or more synthetic chemicals related to cathinone, an amphetamine-like stimulant found naturally in the Khat plant. Chemically they are similar to amphetamines (such as methamphetamine) as well as to MDMA (ecstasy). In 2012, the President signed legislation making many chemicals used in synthetic drugs illegal. However, manufacturers are expected to respond to the new law by producing new chemicals to evade legal restriction.

Bath Salts

Until recently, bath salts were legal and considered cheap substitutes for cocaine and amphetamines.

Bath salts are typically a white or brown crystalline powder sold in small plastic or foil packages labeled "not for human consumption." They are sometimes marketed as plant food, jewelry cleaner, or phone screen cleaner, and are sold online and in drug paraphernalia stores under a variety of names, including Ivory Wave, Cloud Nine, Lunar Wave, Vanilla Sky, White Lightning, and Scarface.

The synthetic cathinone bath salts should not be confused with products such as Epsom salts that are sold to improve the experience of bathing. The latter has no drug-like properties.

Bath salts are taken orally, inhaled, or injected. The hallucinatory effects reported by users are consistent with other drugs such as MDMA or LSD.

Negative reactions include cardiac symptoms and psychiatric symptoms, including paranoia, hallucinations, and panic attacks. They may also produce a syndrome known as "excited delirium" resulting in dehydration, breakdown of skeletal muscle tissue, and kidney failure. Bath salts have even been linked to incidents involving zombie behavior.

For more information on Bath Salts, read the ROCIC Special Research Report *Bath Salts: Deadly New Designer Drug.*

Gravel

Gravel is a highly addictive form of synthetic cathinone. Its primary component, alpha-PVP, is often used in combination with other drugs. Seizures of the drug have been found to contain methamphetamine, Klonopin, and bath salts.

Mail delivery systems are used for the transportation and distribution of alpha-PVP in bulk quantities purchased overseas. It is often labelled as plant fertilizer.

Rat poison and ammonium are used to dilute the alpha-PVP, producing the rock-like substance. It is often in the form of small rocks or pieces of salt that can be injected or smoked. Side effects include increased blood pressure, elevated heart rate, paranoia, hallucinations, and brain damage.

The injection of Gravel can result in the deterioration of the tissue in and around the injection site, leaving gaping holes in the body tissue that can be inches deep.

In August 2013, Sullivan County, Tenn. deputies responded to a domestic disturbance at an apartment complex. A man, who had reportedly taken Gravel and appeared paranoid, became enraged with his girlfriend and claimed she had him under surveillance.

"We're not seeing the crazy rages (like with bath salts), but the paranoia is the worst we've seen from any drugs," said Vice Detective Nathan Elliott with the Kingsport, Tenn. P.D. "And the effects on the body, the user's appearance, those are the worst. We don't know if they'll have cancer in five years, or fall over dead."

Gravel costs $80 to $200 a gram, depending on purity. Extreme paranoia is the trademark tendency for users of Gravel, but other odd behaviors can be exhibited. In another Kingsport incident, two neighbors reported an unknown shirtless man banging on doors and running through yards. The suspect was found hiding in a tree. He jumped down, and ran away. He was taken into custody when he decided to lay down in a yard, on his own volition, and roll around in the grass.

Gravel users also display a higher tolerance to pain, and may not feel it at all. One suspect became combative with Kingsport police. Due to his seeming imperviousness to multiple pressure-point techniques applied by police, a lengthy struggle ensued before he was taken into custody.

"There's horror stories we're hearing about this stuff," Det. Elliott said. "It's worse than bath salts, in relation to women waking up in a room surrounded by men, not knowing what happened."

Gravel use is also linked to a rise in property crime, and Kingsport authorities expect it to grow. One arrested gravel dealer had multiple iPads and flat-screen TVs in his possession.

Pump-It Powder

As the chemicals in synthetic drugs are designated controlled substances, chemists are actively inventing new compounds to circumvent legal restrictions. One such product that has replaced bath salts is Pump-It Powder, marketed as an enhanced plant vitamin.

Geranamine, aka methylhexanamine, is the active ingredient similar to an amphetamine and decongestant found naturally in the geranium plant. Methylhexanamine is a legal substance.

Users report effects similar to bath salts. Some users have suffered seizures, hallucinations, and paranoia. It produces effects considered to be more powerful than cocaine and methamphetamine. It is particularly popular in the Midwest and Plains states, and is sold in gas stations and head shops.

It is easy to find and relatively cheap, $30 for a tin container packed with the powder. The drug can be snorted, injected, or smoked. The high is somewhat delayed, which may cause users to double or triple the dose if the effects are not felt right away, resulting in a likely trip to the hospital.

"Getting a lot of calls from parents of kids who end up in the hospital," said Sgt. Brad Dumit with the Tyler, Texas P.D. "They can snort it, smoke it, and put it in their food. Basically, they can take it any way they want to take it."

Symptoms include the acceleration of the heart and blood temperature. There may be dilated pupils and piloerection (gooseflesh or goose pimples). The high could last four to six hours, although some claim to have felt the effects 12 hours or longer.

MXE

Methoxetamine or MXE is a new designer "research chemical product" often taken for its hallucinogenic and dissociative effects and is relatively new to the recreational drug culture in the United States. MXE is considered to be an analog to the drug Ketamine, classified as a dissociative anesthetic originally used as a powerful tranquilizer on animals. The packaging reads "research chemical" and "not for human consumption."

MXE is marketed as a safe alternative to Ketamine and is sold as a white powdery substance. It is currently unscheduled in the United States but may emerge as a popular synthetic drug of abuse. Users report effects including hallucinations, euphoria, warmth, enlightenment, and being detached from the world around them. Increased heart rate and blood pressure, involuntary eye movement, loss of balance and coordination, and slurred speech have been reported. It has been linked to deaths in Europe and placed under temporary class drug control in Great Britain.

It takes 10-15 minutes for the effects of MXE to be felt and can sometimes take 60-90 minutes, causing some users to double dose and die from overdose. MXE is usually snorted or ingested in capsule. It is primarily sold online under the names MXE, M-Ket, Kmax, or Mexxy.

Cannabis and SYNTHETIC CANNABINOIDS

Cannabinoids are chemical compounds that act on cannabinoid receptors on cells that repress neurtransmitter release in the brain. The most notable cannabinoid is THC, the primary psychoactive compound of cannabis (marijuana). Synthetic Cannabinoid are psychoactive designer drugs and the most commonly used of the emerging drugs discussed in this report. Ingredients in synthetic cannabinoid mimic THC. The so-called synthetic marijuana products are thinly veiled as incense or potpourri, but they are laced with synthetic laboratory research chemicals that may be more powerful than those in marijuana. Synthetic cannabis is claimed by manufacturers to contain a mixture of traditionally used medicinal herbs, each of which produce mild effects that overall result in a cannabis-like intoxication.

Spice

Spice is a mixture of herbs combined with synthetic cannabinoids that produce a high similar to marijuana. Spice may refer to the actual dominant brand of synthetic marijuana but is generally used to describe all herbal blends with synthetic cannabinoids added. It is often marked as herbal incense; however, some brands market their product as herbal smoking blends.

Other names include K2, Black Mamba, Bombay Blue, Fake Weed, Genie, Zohai, Bliss, Blaze, Yucatan Fire, Skunk, Moon Rocks, JWH-018, -073, and -250.

Adverse effects are often more severe than marijuana, and include hypertension, cardiac symptoms, agitation, vomiting, hallucinations, psychoses, seizures, convulsions, and panic attacks.

For several years, Spice was easy to purchase in head shops, gas stations, and via the Internet. Because the chemicals used in Spice have a high potential for abuse and no medical benefit, the DEA designated the five active chemicals most frequently found in Spice as Schedule I controlled substances, making it illegal to sell, buy, or possess them.

Spice products are sold as incense but more closely resemble potpourri. It is abused mainly by smoking to promote mood elevation, relaxation, and altered perception.

Dabs (BHO)

A highly concentrated version of THC known as Butane Hash Oil, Dabs, or Wax is made using highly explosive butane. A clear, golden-brown cannabis derivative, BHO has little smell, either in its solid form or when vaporized. It sells on average for $50 a gram. BHO is 15 percent THC, and a drop or two can be as potent as a joint. It is said to be so potent that it will keep a person high for more than a day.

The process for producing BHO is extremely dangerous. The finely ground marijuana is stuffed into an extractor, which is a tube or cylinder made of glass or stainless steel. The cylinder is then filled with liquid butane, which extracts the active ingredients from the marijuana and drips down out of the cylinder. The butane is evaporated from the mixture using a hot water bath. What's left is the concentrated hash oil.

Butane is so flammable that a spark can set off an explosion. On the East Coast, there have been incidences of fires and explosions that have blown out windows, walls, and caused numerous burn injuries. First responders should receive training to identify items used in hash oil extraction as it can be mistaken for pipe bombs or meth lab explosions. But the creation process is not the only dangerous thing about BHO.

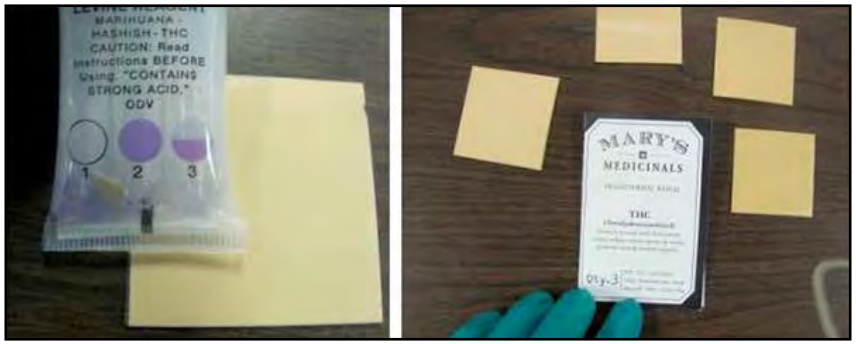
"We have seen people have an onset of psychosis and even brain damage from the exposure to that high concentration of THC," said Gary Hill, assistant special agent in charge at the DEA's San Diego office. "Our concern is that this is going to spread before we get it under control."

For more information, read ROCIC's Special Research Report *The Dab Danger: Using butane to produce hash oil can be highly explosive.*

Transdermal Patches

State troopers are seeing more marijuana hash-infused transdermal patches (similar to a nicotine patch) being purchased from Colorado and crossing state lines. Once removed from the package, the patches have no markings. They do have a slight odor of marijuana and easily test positive for THC.

These patches are a effective method of delivering cannabinoids into the body as they enter the bloodstream directly. The patches are 1.5 inches square and can be cut for smaller doses. THC levels can vary drastically with time. If the suspect has a patch on during a traffic stop, they could be getting higher as the stop continues. Additionally levels could vary from the time when the suspect is pulled over to when they are tested.



THC Puppy Chow

On Feb. 5, 2014 a Grand Chute, Wis. police officer conducted a vehicle stop, during which a K9 alerted to the presence of marijuana.

The driver was questioned and disclosed information about the sale of "puppy chow" containing THC in the Fox Valley, Wis. area. He further stated that the product moves very fast and often can't keep up with demand.

Puppy chow is a common party food made by melting chocolate and butter and combining it with powder sugar and Chex cereal. The THC oil is added to the butter during the cooking process. Users are also mixing the THC oil with Cinnamon Toast Crunch cereal.

The high lasts approximately five hours and costs $10 per cup. Marijuana is not visible on the product. It does have a faint odor of marijuana, which grows stronger when the bag is shaken.

PHENETHYLAMINES

Phenethylamines are trending among youth, particularly the consumption of the 2C-I and 2C-B drug types, which have psychedelic qualities. Effects of Phenethylamines are similar to amphetamines and MDMA. Molly, a "pure" form of MDMA (Ecstasy), has become the drug of choice to combine with heroin. Phenethylamines are often marketed as research chemicals and may be sold in bulk, which can be resold as individual dosages.

Sorting Out The Phenethylamine Alkaloids

Phenethylamine was first isolated in 1847 in Poland. It is an organic compound with many diverse classes well known for psychoactive drug and stimulant effects. Phenethylamine is present in mammals and found in many other organisms and food, such as chocolate, and is widely distributed throughout the plant kingdom. Phenethylamine derivatives include stimulants and psychedelics. Phenethylamine drugs include amphetamines, methamphetamine, and pseudoephedrine.

Amphetamine was first synthesized in 1887 in Germany but its stimulant effects were unknown until 1927. During World War II, it was used extensively by Allied and Axis forces for its stimulant and performance-enhancing effects. It is now used for the treatment of Attention Deficit Disorder (Adderall) and is a Schedule II drug. Recreational doses are generally much larger than prescribed doses. Amphetamine is the parent compound of Ecstasy and methamphetamine.

Ephedrine is structurally similar to methamphetamine and adrenalin (a neurotransmitter). It differs from meth only by the presence of hydroxyl. The chemical synthesis of ephedrine was first accomplished in 1885 in Japan from the herb Ephedra. Recreationally, it is used to create methamphetamine. Ecstasy may also contain ephedrine combined with other chemicals.

Pseudoephedrine is a synthetic ephedrine. It's used as a nasal/sinus decongestant (Sudafed), as well as a stimulant, and is found in many over-the-counter drugs. The similarity to amphetamines has made pseudoephedrine a sought-after chemical precursor in the illicit manufacture of methamphetamine and methcathinone. As a result, pharmaceutical firms have reformulated the medications.

Methamphetamine hydrochloride was first synthesized in 1919 via reduction of ephedrine. During World War II, methamphetamine was used extensively by the Allied and Axis forces for its stimulant effects. It later became a popular diet pill known as Obetrol in America. As the addictive properties became known, methamphetamine became a Schedule II drug.

MDMA (Ecstasy) is made from safrol (sassafrass tree) and was first synthesized in 1912. It is similar to meth and mescaline. MDMA first became popular among psychotherapists, for personal use and clinical use. Subsequently, the drug emerged in clubs and raves in the 1980s. It became a Schedule I drug in 1985. After MDMA was criminalized, most medical use stopped but its popularity ensued among college students.

Mescaline is a naturally occurring psychedelic alkaloid of the phenethylamine class known for its hallucinogenic effects similar to those of LSD and psilocybin. It shares structural similarities with dopamine (a natural neurotransmitter in the brain). It is found in the peyote cactus, as well as other members of the Cactaceae plant family and Fabaceae bean family. Mescaline was first isolated and identified in 1897, although peyote has been used for thousands of years. Its suggested medical usage includes alcohol and depression treatment. Mescaline is legal only for certain religious groups in the U.S., such as the Native American Church.

Drug	Dosage	Street Price
2CB	16-24 mg pill	$10-$30
Adderrall	10mg pill	$20-$25
Sudafed	30mg tablet makes 10-20mg meth	$25-$30 box
Methamphetamine	1/4 g bag	$20-$30
MDMA	75mg pill	$10-$20
Mescaline	1g pure	$20-$30

Source: Various public drug forums

Molly

Sometime in the past decade, Ecstasy returned to clubs as Molly, a powder or crystalline form of MDMA that implied greater purity and safety: Ecstasy re-branded as a gentler, more approachable drug. And thanks in part to that new moniker, MDMA has found a new following in a generation of conscientious professionals who have never been to a rave and who are known for making careful choices in regard to their food, coffee, and clothing.

Molly is said to be the purest form of MDMA or Ecstasy, an upper. It is a psychoactive drug of the phenethylamine and amphetamine classes of drugs. MDMA is crossing the Canadian border and reemerging on university campuses as a common party drug.

Heroin, a downer, is a favorite combination for MDMA. Users drop MDMA first, and, when reaching the peak, shoot heroin. Users do not shoot heroin before MDMA because the user's body temperature would go up so high that he or she would, in the words of an abuser, "experience evil shivers like hot pins and needles through the blood stream that you'd curl up in a ball wrapped in wet towels to ride out the rushes" or in worst-case scenarios drown in excess body fluids. Heroin most often kills by causing respiratory failure. An overdose causes the breathing to slow, and eventually stop entirely.

Heroin is also considered better to use after MDMA than cocaine because cocaine would end the euphoric feeling rather than prolong it. Some users profess in online forums that they would never take MDMA, cocaine, amphetamines, or psychedelics without heroin again.

2C-I or India

The synthetic drug 2C-I or India is replacing bath salts as the new hallucinogen of choice among teenagers. The drug is derived from phenethylamine. It is sometimes confused with 251-NBOMe, aka Smiles.

India is usually sold as a fluffy, sparkling-white powder, which can be pressed into a pill and taken orally, snorted, smoked, or taken rectally.

It is sold from several online vendors of research chemicals in the United States. It is often misrepresented as mescaline when being sold on the street; however, it has a much greater potency by weight, resulting in a higher likelihood of overdose if taken as mescaline.

Effects occur within two hours of ingestion and last four to 12 hours. Desired effects include psychedelic or hallucinogenic effects similar to LSD or MDMA. Symptoms include dilated pupils, high energy, and muscle relaxation.

Benzo Fury

Benzo Fury is a party drug similar in structure to MDMA and usually taken in pill form. It takes effect within 45 minutes to an hour. Desired effects include euphoria and an energy surge that may last up to ten hours, plateauing at two hours.

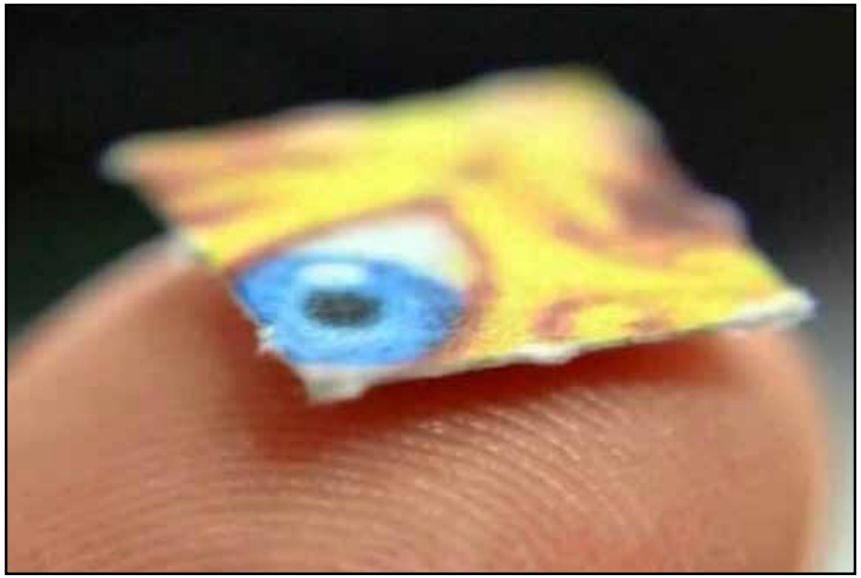
Benzo Fury was marketed over the Internet as a research drug. It became briefly popular in clubs, bars, and convenience stores in the United States and Britain before being banned in June 2013. It is priced at $15.35 per pill. It is a compound of the phenethylamine and amphetamine classes.

Bromo Dragonfly

Bromo Dragonfly is a psychedelic drug related to the phenethylamine family. It is slightly less potent than LSD and 200 times the potency of mescaline with a normal dose of 200 pg to 800 pg. Effects could last several days; however, they may not take effect for up to six hours, leading users to take multiple doses. Bromo Dragonfly is sold in the form of blotters, and is often mistaken for LSD.

In September 2011, two college students died after using Bromo Dragonfly in Konawa, Okla. Six other young adults were sickened, some near death. The victims of the overdoses thought they had taken 2C-E, also derived from phenethylamine. A typical dose of 2C-E is 10 to 20 mg – more than 10 times higher than a dose of Bromo Dragonfly, which resulted in the overdoses.

n-bomb



N-bomb refers to any of the synthetic hallucinogens 251-NBOMe, 25C-NBOMe, and 25B-NBOMe. It may be referred to as Legal Acid, Smiles, or 25I, and is also derived from phenethylamine.

NBOMe is a clump white powder with a notably bitter and metallic taste. It is often sold as LSD or mescaline. It may be snorted, or made into a liquid and soaked into blotter paper (like LSD) or laced on something edible. It is most often taken on breath strips and dissolves quickly in the mouth.

NBOMe has a high potency. Extremely small amounts can cause seizures, heart attack, arrested breathing, and death. Desired effects are similar to LSD and can last six to ten hours.

During November 2013, the DEA used their emergency scheduling powers to add NBOMe as a Schedule I drug for two years.

NBOMe has been reported in Georgia during the last several months of 2013. While there have been no known deaths in Georgia (at least 19 deaths occurred nationwide in 2013), law enforcement officials reported that users get aggressive and uncooperative.

In some cases it has taken three or four police officers or EMTs to force an aggressive abuser into handcuffs, said Rick Allen, director of the Georgia Drugs and Narcotics Agency.

Party Pills

Harmless fun or a dangerous drug?

With concerns being raised about the safety of legal party pills, the government is considering clamping down on the sale of the "herbal highs." But others say the pills are a safe alternative to drugs such as P, and are as popular among housewives and 40-somethings as young partygoers.

PARTY PILLS

The original ingredient in party pills or "herbal highs" was benzylpiperazine (BZP) but the ingredients have since expanded to a wide variety of compounds with various effects. BZP was listed as a Schedule I controlled substance in 2002. It is still legal in Canada, also home to the largest supplier of party pills. BZP is widely used in New Zealand and has been seen in California since the 1990s.

BZP can be purchased through chemical supply agencies and formed into tablets or capsules. It is often marketed as a dietary supplement to avoid stricter laws applied to medicines and drugs. Other retailers claim it is a natural product that produces a natural high; however, the drug is entirely synthetic.

The effects of BZP are largely similar to amphetamines and MDMA. Users report alertness and euphoria. The high typically lasts four to six hours. Side effects include dilated pupils, blurred vision, dry mouth, headache, dizziness, anxiety, vomiting, insomnia, hallucinations, hypertension, hyperventilation, hyperthermia, respiratory failure, and seizure.

A range of other piperazine derivatives have been sold mixed with other ingredients, including caffeine, 5-HTP, Oxedrine, Camelia sinensis, and a range of vitamins and minerals.

The new legal ingredients found in party pills are untested and unregulated substances that are difficult to monitor. Often no one knows what's really in them. Legal party pills are likely to be combined with alcohol and possibly illegal drugs. One study said that vomiting and memory loss are four times more likely to occur when combining legal party pills with alcohol than alcohol alone.

Common party pills include Xplode, which is marketed as a six-hour energy legal alternative to amphetamines. It is legal to sell, possess and use, even getting a feature in *Men's Health* magazine.

XTZ is another herbal product marketed with effects similar to Ecstasy. Cok-n is an herbal product marketed as providing cocaine-like stimulant effects. Cok-n contains HBWR, which when extracted, contains the psychedelic chemical LSA.

Herbal Drugs of Abuse

Some herbal products are emerging as popular drugs for recreational abuse. Plant and herbal supplements used recreationally can have a wide spectrum of clinical effects ranging from euphoria and stimulation to hallucinations. Despite the potential for abuse, addiction, and serious adverse effects, there may be a false perception that these products are all safe, legal, and organic.

Kratom

Kratom is a tropical evergreen tree in the coffee family located in Southeast Asia, particularly Thailand. Its leaves are used for medicinal purposes and produce psychoactive effects when chewed. It may also be drunk like a tea (50 grams of dried kratom leaves boiled in one liter of water). It behaves similar to an opioid such as morphine.

Most illegal cases involving kratom have occurred when combined with other drugs. Some users consume kratom along with dextromethorphan-containing cough syrup, amphetamines, or benzodiazepines. Kratom use is increasing among those who have been self-managing chronic pain with opioids purchased without a prescription. Compulsive use has been reported among drug users who inject opioids. Side effects include loss of appetite, weight loss, constipation, and darkening of the skin color of the face.

Kratom is not regulated in the United States; however, it once was listed by the DEA as a "drug of concern." Indiana is the only state to ban the chemicals in Kratom – mitagynine and 7-hydroxymitragynine. Because it is not on the banned plants list nor is it a synthetic, kratom is still legal in Indiana and the rest of the United States.

Kratom can be purchased online at botanical shop websites. It may also be sold as incense resembling Bath Salts and Spice.

Angel's Trumpets

Angel's Trumpets, aka moonflowers or daturas, are flowers cultivated in the United States. They are short-lived perennials of various colors. All Datura plants contain tropane alkaloids in their seeds and flowers. Because of these substances, Angel's Trumpets have been used in some cultures as a poison and a hallucinogen.

There can be a 5:1 toxin variation between plants, making it exceptionally hazardous as a drug. There have been multiple incidents of adolescents and young adults intentionally ingesting Datura and dying or becoming seriously ill.

It is consumed as a tea for the hallucinogenic effects. Desired effects include a sense of euphoria; however, it may actually cause hyperthermia, bizarre behavior, and severely dilated pupils. Pronounced amnesia may also occur.

Salvia Divinorum

Salvia Divinorum is a perennial herb in the mint family native to certain areas of Mexico. Salvinorin A is believed to be the responsible ingredient for the plant's hallucinogenic effects, typically when chewed or smoked.

Effects appear in five to ten minutes when chewed and maintained in the cheek area. Smoking pure salvinorin A, at a dose of 200-500 micrograms, results in effects within 30 seconds and lasts 30 minutes. Psychic effects include perceptions of bright lights, vivid colors and shapes, as well as body movements and body or object distortions. Other effects include dysphoria, uncontrolled laughter, a sense of loss of body, overlapping realities, hallucinations, incoordination, dizziness, and slurred speech.

Neither Salvia Divinorum nor Salvinorin A are controlled under the Controlled Substances Act. It is estimated that 1.8 million persons aged 12 or older have used Salvia Divinorum in their lifetime, most commonly by young adult males.

It is sold as seeds, plant cuttings, whole plants, fresh and dried leaves, extract-enhanced leaves, and liquid extracts at head shops and via the Internet.

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