Fentanyl, Fentanyl Analogs, Carfentanil, Counterfeit Pharmaceuticals & Other Dangerous Substances

What you do not know can kill you!

DEADLY!
Lieutenant Dan Zsido, Retired
Pinellas County Sheriff’s Office
Narcotics Division
Largo, Florida

- 35 Years Law Enforcement Experience
- 15 Years Narcotics Investigations
- 12 Years Pharmaceutical Investigations
- 12 Years NADDI Membership
- Proactive in Anti-Drug Abuse Organizations

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National Programs

Established 1989
www.naddi.org

Dan Zsido
National Training & Education Coordinator
Focus:
Training
Education
Networking
Partnership:

Law Enforcement
Healthcare
Pharmaceutical
Loss Prevention
Regulatory
Addiction Specialists
Anti-Drug Abuse Organizations
# Upcoming Trainings

<table>
<thead>
<tr>
<th>Event Name</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Basic Diversion School - Virginia Beach, VA</td>
<td>April 24, 2017</td>
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<td>NADDI Maryland Chapter Training - Annapolis, MD</td>
<td>April 28, 2017</td>
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<td>NADDI Mississippi Chapter Training</td>
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<td>NADDI California Chapter Training</td>
<td>August 3, 2017</td>
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<tr>
<td>NADDI Ohio Chapter Training</td>
<td>September 25, 2017</td>
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<tr>
<td>NADDI 28th Annual Conference - Pittsburgh, PA</td>
<td>October 17, 2017</td>
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<td>October 20, 2017</td>
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## Event Pricing

<table>
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<tr>
<th>Event Type</th>
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<tr>
<td>General Registration</td>
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<tr>
<td>Law Enforcement Registration</td>
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<tr>
<td>State Agency/Military/Non-Profit Registration</td>
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<tr>
<td>Speaker</td>
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<tr>
<td>NADDI Corporate Member</td>
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Easy Registration Process
Social Media

- NADDI’s Facebook page
Abused Pharmaceutical Brochure

- Brochures are FREE
- Currently updating
- New brochures and posters this summer
- Link on website to request brochures & posters
• Newly revised website
• February 2017
• Identifies & Grades the current prevention efforts of each State
• Valuable information resource
28th Annual Conference

October 17th – 20th, 2017

Wyndham Grand Pittsburg Downtown
Pittsburg, PA
Florida was named the Epicenter of prescription drug abuse in 2010*

We were known nation wide to have 900+ Pill Mills, 98% of the nation’s top painkiller-prescribing doctors and no PDMP.
Pinellas County, Florida

Pinellas County is the 2\textsuperscript{nd} to the smallest county and is the most densely populated county in the State of Florida. Visitors exceed 48,910 daily and 17,852,361 annually.

Population:
Florida – 20,271,272
Pinellas County – 949,827
(Census July, 1, 2015)
What you do not know can kill you!

DEA:

The United States is in the **midst of a fentanyl crisis**, with law enforcement reporting and public data indicating **higher availability of fentanyls**, increased seizures of fentanyls, and more known overdose deaths from fentanyls than at any other time since the drug were first created in 1959.

DEA:

“Issued a nationwide report indicating that hundreds of thousands of counterfeit pills have been entering the U.S. drug market since 2014, some containing deadly amounts of fentanyl and fentanyl analogs”.

What you do not know can kill you!

ONDCP:

”That illicit fentanyl is an urgent public health threat. Our nation is in the midst of an opioid epidemic, and we have seen a dramatic increase in overdose deaths associated with increased availability and use of heroin and fentanyl”.

Source: Letter regarding illicit fentanyl and it’s effects
By Acting ONDCP Director Richard J. Baum, March 29, 2017
What you do not know can kill you!

Illicit Fentanyl and Fentanyl Precursor Flow Originating from China

Mass-produced in clandestine labs in China and smuggled via traditional distribution routes directly or indirectly into United States.

What you do not know can kill you!

Illicit Fentanyl and Fentanyl Precursor Flow Originating from China

Source: Internet pictures – Drugs from China & Pill Press
What you do not know can kill you!

Pill Press Dies & Machines for Sale

Cost $150 - $10,000

Source: Internet Website pictures www.punchdies.com
What you do not know can kill you!

Video
YouTube
How to make 215pill

1:22

Source: https://www.youtube.com/watch?v=sLfCtGyjAA0
What you do not know can kill you!

Why?

Supply & Demand
What you do not know can kill you!

Whack-A-Mole

Pills

Synthetics

Counterfeits

Changing Drug Trends
What you do not know can kill you!

Number of Fentanyl Exhibits in NFLIS 2004-16 (Sept)

Submission Increases 1,641%

(NFLIS) National Forensic Laboratory Information System

Source: NFLIS Fentanyl Exhibits 2004-2016 (Sept)
Antonio Guzman, DEA Associate Section Chief
What you do not know can kill you!

Potential Revenue Generated from Fentanyl Pill Sales Using 1 Kilogram of Fentanyl within United States

<table>
<thead>
<tr>
<th>Amount of Fentanyl Per Pill</th>
<th>Price Per Pill</th>
<th>Price Per Pill</th>
<th>Price Per Pill</th>
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<tbody>
<tr>
<td></td>
<td>$10</td>
<td>$15</td>
<td>$20</td>
</tr>
<tr>
<td>1.5 milligrams (666,666 pills)</td>
<td>$6.6 million</td>
<td>$9.9 million</td>
<td>$13.3 million</td>
</tr>
<tr>
<td>1 milligram (1 million pills)</td>
<td>$10 million</td>
<td>$15 million</td>
<td>$20 million</td>
</tr>
</tbody>
</table>

Source: DEA

1 Kilogram weighs 2.2 pounds or 1,000 grams or 1,000,000 milligrams

What you do not know can kill you!

Do The Math

One kilogram = 1,000,000 milligrams X $10 each = $10,000,000
One ounce = 28,349.5 milligrams X $10 each = $283,495
One gram = 1,000 milligrams X $10 each = $10,000

TO

The initial Investment of 1 kilogram of Fentanyl (analog) cost $1,700 to $3,500 each
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Fentanyl vs. Fentanyl Analogs

**Fentanyl** is a powerful synthetic opiate analgesic similar to, but more potent than Morphine. Pharmaceutical Fentanyl is available as a skin patch, lozenge, pill, injection, a film that dissolves in your mouth, nasal spray, or by IV (intravenous).

**Pharmaceutical Fentanyl** is approximately 80 to 100 times more potent than Morphine. The estimated lethal dose of Fentanyl in humans is 2 milligrams.

Source: European Monitoring Centre for Drugs and Drug Addiction
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**Fentanyl vs. Fentanyl Analogs**

**Pharmaceutical Fentanyl**

The estimated lethal dose of Fentanyl in humans is **2 milligrams**.

Question: a packet of sugar weighing 1 gram (1,000 milligrams) would contain how many lethal doses?

500 lethal doses
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Fentanyl vs. Fentanyl Analogs

Pharmaceutical Fentanyl

Potential Lethal Dose
Fentanyl vs. Fentanyl Analogs

Non-pharmaceutical Fentanyl, and its analogs, are designer narcotics illegally produced and manufactured by chemists in clandestine laboratories worldwide.

In some instances, Fentanyl analogs can be up to 10,000 times more potent than Morphine. There is no information available on the lethal dose of Fentanyl analogs; however, it is suspected to be micrograms compared to the potency of pharmaceutical Fentanyl.

Source: European Monitoring Centre for Drugs and Drug Addiction

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What you do not know can kill you!

Fentanyl Analogs

Some re-emerging Fentanyl and Fentanyl analogs and other synthetic opioid substances:

- Fentanyl
- Acetyl fentanyl
- Butyryl fentanyl
- Furanyl fentanyl
- Valeryl fentanyl
- Carfentanil
- Thiafentanil
- U47700
- Etc. etc. etc.

TOXIC
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**Fentanyl**

Potent, synthetic opioid analgesic with a rapid onset and short duration of action. Fentanyl was first synthesized by Paul Janssen in 1960.

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**Acetyl fentanyl**

Opioid analgesic drug that is an analog of fentanyl. **No medical use and sold as a designer drug since the late 1980s.**

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**Butyryl fentanyl**

Potent short-acting synthetic opioid analgesic drug and is an analogue of fentanyl. *No medical use, sold as a designer drug and analgesic studies were published in 1987.*

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Furanylfentanyl

Opioid analgesic that is an analog of Fentanyl. **No medical use and sold as a designer drug (no date).**

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Valeryl fentanyl

Opioid analgesic that is an analog of Fentanyl. No medical use and sold as a designer drug (no date).

Source: DEA https://www.swgdrug.org/monographs/valeryl%
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Carfentanil
Veterinary Analgesic

Carfentanil

Carfentanil or carfentanyl (also known as 4-carbomethoxyfentanyl) is an analog of the synthetic opioid analgesic fentanyl. Carfentanil was first synthesized in 1974 by a team of chemists at Janssen Pharmaceutica which included Paul Janssen. It is marketed under the trade name Wildnil as a general anaesthetic agent for large animals.

* Not approved for human consumption.

Source: https://en.wikipedia.org/wiki/Carfentanil
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Carfentanil

Carfentanil is the most potent known and the most potent commercially used opioid. Just 2 milligrams is needed to sedate a 14,000-pound elephant.

Carfentanil has the potency approximately 10,000 times that of Morphine and 100 times that of Fentanyl. There is no medical use for Carfentanil in humans and only minute amounts in picograms, one trillionth of a gram, can be fatal.

Source: Director Reta Newman
Pinellas County Forensic Laboratory
http://www.pinellascounty.org/forensics/
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Carfentanil

To put this in perspective, wild African elephants—an animal that Carfentanil is used on—weigh between 5,000 and 14,000 lbs as reported by National Geographic, which is roughly 26 to 72 times the weight of your average adult male of 195.5 lbs.

Source: Open Internet Sites
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Carfentanil

Actual seized sample containing Carfentanil, Heroin & Benadryl, Pinellas County, Florida 8-24-16

Gravel Appearance

Picture provided by CFHIDTA
Newsletter 2QTR 2016
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Carfentanil

OPIOID POTENCY EXAMPLE

- Carfentanil: 10,000x
- Fentanyl: 100x
- Heroin: 2x
- Morphine: 1x

Source: Opioid Potency/KGW.com
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**Thiafentanil**

An emerging replacement for Carfentanil

No picture available as of 2-18-17

Source: DEA Feb 2017
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Thiafentanil

On August 26, 2016, Thiafentanil, \textit{opioid also known as A-3080}, was approved as a Schedule II Controlled Substance under 21 USC 8119h). \textbf{Thiafentanil is a highly potent and fact acting opioid used to anesthetize wildlife animals.} It closely resembles Carfentanil, but differs in the rapid onset action and significantly shorter duration period.

Veterinarians are currently depleting their Carfentanil inventory while they wait for Thiafentanil to become available.

**What you do not know can kill you!**

**Thiafentanil**

Thiafentanil is slightly less potent than Carfentanil, which is 100 times more potent than fentanyl and 10,000 times more potent than morphine. Thiafentanil is a potent fentanyl analogue. Thus, it is reasonable to assume that there will be potentially significant diversion of Thiafentanil from legitimate channels by people who have access to it, and that Thiafentanil would be used without medical advice, therefore causing substantial hazards to the users or to the safety of the community if not controlled.

* Not approved for human consumption.

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**U-47700**

Opioid analgesic drug developed by a team at Upjohn in the 1970s. U-47700 is 7.5 times the potency of morphine in animal models. **No medical use (no date).**

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Fentanyl-Related Compounds

Fentanyl

Acetylfentanyl

Butyrylfentanyl

Furanylfentanyl

Valerylfentanyl

Carfentanil

What you do not know can kill you!

**Alprazolam (Xanax) “G3722” Pills**

Counterfeit pills identified as Alprazolam and Fentanyl analogs.

The counterfeit white rectangle pill which bear the “G3722” imprint are slightly thinner and flat on the surface compared to the authentic “G3722” pill which have a raised beveled edge.

Source: Pinellas County Forensic Laboratory, Feb 2016
What you do not know can kill you!

Oxycodone “A 215” 30 mg Pills

Counterfeit pill identified as a Fentanyl analog

The counterfeit slightly blueish round pill which bear the “A 215” imprint had a rough surface compared to the authentic “A 215” pill.

Source: Pinellas County Forensic Laboratory, Feb 2016
What you do not know can kill you!

Alprazolam (Xanax) “R039” Pills

Counterfeit pills identified as NEW substance Desmethylsulazepam

The counterfeit yellow and white rectangle pill which bear the “R039” imprint are slightly thinner and cubed on the surface compared to the authentic “R039” pill which have a raised beveled edge.

Source: Pinellas County Forensic Laboratory, Sept 2016
What you do not know can kill you!

2016 Top 5 NPS Identifications by Laboratory

Source: Synthetic Drug Threats in the United States: 2017 Update
Jill M. Head, Supervisor Chemist, May 15, 2017
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Many dealers do not know what they are selling…

Many users do not know what they are buying…

Russian Roulette
What you do not know can kill you!

Outcome

Users:
✓ Did or did not obtain the desired drug?
✓ Some drug users are now seeking Fentanyl.

Dealers:
✓ Did or did not know they were selling some other kind of drug?
✓ Purposely added other drug(s) and additional substances to increase the profit.
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Outcome

Resulting in a **toxic level** and **drug overdose(s)**

Headline News

- “Macomb County Sheriff Reports “large number” of Drug Overdoses”, February 6, 2016
- “This is unprecedented: 174 Heroin Overdoses in 6 Days in Cincinnati”, August 29, 2016
- “Amid Opioid Overdose, Ohio Corner’s Office Runs Out of Room for Bodies”, February 2, 2017
- “Louisville Rocked By 52 Overdose Calls In Just 32 Hours”, February 10, 2017
What you do not know can kill you!

- What if?
  - Someone you know suddenly becomes ill while or after handling a drug substance?
  - Where is the nearest medical facility?
  - What is EMS response time?
  - How to avoid cross-contamination?
  - Do you have protective equipment?
  - Is a First Aid kit available (Narcan/Naloxone)?
What you do not know can kill you!

Video
YouTube
DEA Warning
to Police Officers
About Fentanyl

2:54

Source: https://www.youtube.com/watch?v=zMKvJ7sE0io&t=7s
What you do not know can kill you!

Adverse effects may include but are not limited to:

- Blurred vision
- Confusion
- Severe Stomach pain
- Chest pain
- Hallucinations
- Severe Headaches
- Severe Drowsiness
- Swelling of the mouth
- Seizures
- Irregular Heartbeat
- Shortness of breath
- Unconsciousness

DEATH!
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Extreme caution must be utilized when handling any narcotic substance, particularly fentanyl analogs, as particles can become airborne or absorbed through the skin causing an adverse incident and/or DEATH!

Immediate medical attention must be sought if there is any suspected exposure or any of these adverse effects are observed.
What you do not know can kill you!

Drug and Substance Abuse

11 Connecticut cops sickened during heroin and fentanyl bust

September 14, 2016  Associated Press
Broward County Sheriff’s Office (FL) Canine Unit

“Exposed to Heroin potentially laced with Fentanyl during the execution of a narcotics search warrant”

October 27, 2016

During the search warrant (3) canines were deployed to sniff the interior and exterior of the residence. Prior to the search, the handlers conducted a walk through and did not observe any obvious hazards.

After the canines were used at residence, the handlers recognized symptoms in their dogs that indicated a drug exposure.

What you do not know can kill you!
Broward County Sheriff’s Office (FL) Canine Unit

These symptoms consisted of; drowsy behavior, difficult standing, disinterested in attention and the canines did not react to their handlers. The canines would not drink water and ultimately became unable to stand or move. Further, the canines eyes were open (blank stare) and appeared to be conscious, but showed no signs of reacting to their surroundings.

The canines were rushed to an Animal Hospital and were treated for a suspected opioid exposure where Naloxone (Narcan) was administered to the animals. All (3) canines made a full recovery with no lasting effects.
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Broward County Sheriff’s Office (FL) Canine Unit

Detective Andy Weiman & K9 Primus
Broward County Sheriff’s Office, FL
What you do not know can kill you!

Human scent glands vs. Canine scent glands?

Human – up to 5 million
Canine – 125 to 300 million
What you do not know can kill you!

Human scent glands vs. Canine scent glands?

Intranasal Naloxone (Narcan)
What you do not know can kill you!

Pinellas County Sheriff’s Office (FL) Jail

Carfentanil

A suspect that was booked into the jail two days prior had smuggled a white powder substance into the detention facility. The suspect shared the substance with (2) other inmates who became ill showing signs of an overdose and were immediately treated with Naloxone (Narcan) by the medical staff. The suspect was charged with additional charges and the other inmates made a full recovery.
A police officer observed a possible drug transaction and attempted to stop the vehicle. The suspects fled and tried to dispose of the drugs by dumping the white powder inside the vehicle. The suspects were apprehended and the officer processed the vehicle while wearing gloves and a protective mask.
Later back at the police department, the officer noticed he had some white powder on his uniform shirt and instinctively he brushed it off.

Within an hour, the officer passed out and paramedics were immediately summoned providing Naloxone (Narcan). The officer was transported to a hospital and made a full recovery.
What you do not know can kill you!

DEA: New Fentanyl Analogue Could Be Narcan-Resistant
Pennsylvania, May 3, 2017

New Fentanyl Strain Makes Overdoses Harder to Treat
Illinois, May 10, 2017

Acrylfentanyl

A new analogue of the synthetic opioid fentanyl has made its way into western Pennsylvania and, while it's too early to say for sure, officials believe the drug could be resistant to the overdose-reversal drug naloxone.
What you do not know can kill you!

**Extreme caution** must be used when handling or **field testing** any unknown powder. Gloves should be worn at all times, particle masks are recommended when significant amounts of un-packaged powders are encountered or handled.
What you do not know can kill you!

Being educated and prepared on today’s emerging drug trends is the start to protecting oneself and others...

Dan Zsido
September 3, 2016
Fentanyl, Fentanyl Analogs, Carfentanil, Counterfeit Pharmaceuticals & Other Dangerous Substances

Questions

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