Fentanyl and Fentanyl analogues

TFO Dan Heidbreder
ND Department of Corrections
Cass County Drug Task Force
What is fentanyl

• Fentanyl is a powerful synthetic opiate pain killer.

• Fentanyl is a fast acting analgesic that is similar to, but 50 to 100 times more powerful than morphine.

• Fentanyl is used to treat severe pain, often in terminally ill patients. It is prescribed sparingly, due to it’s potency.
Fentanyl

- Fentanyl is delivered via injection, trans dermal patch, or lozenge.

- It is highly addictive.

- Fentanyl works by binding to opiate receptors in the brain, which are located in areas of the brain that control pain and emotions.

- This will drive up dopamine levels and create a sense of euphoria and relaxation.
Fentanyl

- Fentanyl patch
Fentanyl

- Fentanyl lozenge
What is furanylfentanyl

• Furanylfentanyl is an analogue of fentanyl.
• What is an analogue?
  – a chemical compound that is structurally similar to another but differs slightly in composition (as in the replacement of one atom by an atom of a different element or in the presence of a particular functional group)
• In regards to effects of fentanyl, it’s analogues are similar in effects.
What is furanylfentanyl

- Due to the similar molecular structure, the effects of furanylfentanyl are similar to fentanyl.

- However, little scientific information is available, due to the furanylfentanyl not being used in the medical community and due to the newness of the analogue.

- A lot of information is from drug users that have used the product and shared their experiences.
Fentanyl analogues

- There are presently around 30 known fentanyl analogues, with about 12 being produced clandestinely.

- Additional are possible and likely to be produced as legislation is passed banning known analogues.

- Most are produced in laboratories in China, due to availability of precursor chemicals needed, those with the scientific knowledge and ability to manufacture it, and lack of oversights that allow this to be mass produced, marketed, and sold.
Fentanyl analogues

• Most are sold as a “research chemical” but used by consumers as a designer drug.
• When produced, most are a very fine white to off white powder.
Where are these substances obtained?

• They can be obtained via the darkweb.

• Anyone can easily figure out how to access marketplaces selling an array of illegal items, to include drugs, on the darkweb.

• Payment for drugs or other items on the darkweb is done in Bitcoins, which is a virtual currency.

• Once ordered, the drugs are shipped via USPS or parcel service.
Darkweb use signs

• There are many warnings signs of darkweb use.
  – Users must use a unique web browser to access the darkweb.
  – Users must purchase bitcoins via bitcoin brokers or exchanges.
  – Users must track packages as they are shipped.
  – Users must access multiple drug user web forums (reddit, bluelight, drugs-forum, etc) to gather information on darkweb sellers.
Effects of Fentanyl analogues

- Reduces pain and anxiety in low doses
- At higher doses, it has sedative effects
- But, exact scientific data does not exist, due to it having no medical uses, the newness of this substance, and it being sold with the warning “not for human consumption”.
- Most information known is from drug users reporting their experiences on drug user forms.
Dangers of fentanyl analogues

• Fentanyl and its analogues are extremely potent.

• Dosages are micrograms.

• The exact effects that users will experience with analogue use is unknown, due to lack of scientific studies being conducted on use.

• Users can never be certain of what they are obtaining. There is no quality control for those selling illegal items via the darkweb.
Physical effects

• Signs of use:
  – Constricted pupils
Physical effects

• Signs of use:
  – Slow movements and speech or slurred speech
  – Drooping eyelids and sleepiness
  – Fading in and out of consciousness (known as nodding).
  – Impaired cognitive abilities
  – Loss of short term memory
  – Lack of self control or poor decision making
Physical effects

• Signs of use:
  – Increased agitation
  – Irritability
  – Itching
  – Nausea
  – Vomiting
  – Skin irritation or rashes
  – Constipation and use of laxatives
Signs of use

• Signs of use:
  - A distinct change in behavior.
    - Users who have become addicted must frequently use this substance to avoid withdrawals. Withdrawals are painful and difficult for a user to go through.
  - Users will do pretty much anything to support their habit. Supporting a drug habit is expensive.
    - Users will often steal to obtain the money needed to support their habit.
  - Users will often be withdrawn, irritable, or hostile.
    - These are defense mechanisms to try to hide their addiction from those around them. If confronted on usage or the change in behavior, a user will use any means necessary to conceal their usage. It is not unusual to for a user to outright lie about their usage.
Fentanyl in Fargo/Moorhead

– Drug Investigators started seeing an increase in overdoses and deaths of known heroin users in the fall of 2015 and a dramatic increase in overdoses and deaths around the start of 2016.

– Since Christmas of 2015, there have been over 60 known overdoses and around 20 deaths.

– Investigation revealed several causes, to include a heroin/fentanyl mixture, a heroin furanylfentanyl mixture, fentanyl powders, and fentanyl in solution.
Fentanyl in Fargo/Moorhead

– Continued investigation led to the discovery of furanylfentanyl in solution. It was seized in a Zicam nasal spray bottle.

– Investigation showed that furanylfentanyl in solution was a large and widespread problem and that those distributing it knew exactly what they were ordering and distributing.

– Furanylfentanyl in solution has since been seized in local high schools and is being used and distributed by high school students.
Fentanyl in Fargo/Moorhead

- Investigation has shown that furanylfentanyl in solution has been extensively trafficked, sold, and used in Fargo/Moorhead for the past couple of years.

- Initially, a core group of individuals were ordering fentanyl anaogues from the darkweb and using them.

- This core group soon realized the ability to make large amounts of money with little risk (due to the inability of tests that can identify fentanyl analogues, the belief that these substances are legal, and the ability to easily conceal these substances in solution.)
Fentanyl in Fargo/Moorhead

– In the recent past, many have learned the ease of ordering these substances and low risk of trafficking and distributing these substance and have started to traffic these substances.

– These substances are popular with young adults, as young as 15 years old (there have been 2 known overdose incidents of 15 year olds).

– Recent arrests have been made, but though interviews, we have learned that we have yet to scratch the surface of this problem.
Use of furanylfentanyl

• Furanylfentanyl is water soluble and dissolves readily in water.

• Due to being water soluble, furanylfentanyl can be dissolved in water and injected.

• Paraphernalia related to furanylfentanyl injection is a vessel to dissolve into solution, cotton balls that are used as a filter, and a syringe for injection.
Injecting furanylfentanyl

• Once used, the vessel will likely contain a white residue.
Injecting furanyl fentanyl

- Cotton balls are used as a filter to filter out larger particles, so the fine syringe is not clogged. Cigarette filters or any other filter can be used.
Injecting furanylfentanyl

- Syringes are used for injection. Syringes can be bought at any pharmacy in North Dakota without a prescription or authorization. Consumers of syringes must provide identification and sign for them in Minnesota.
Effects of furanylfentanyl

• Signs of use:
  – If injecting it, the user will have injection site marks, possibly on the inner elbow. However, it can be injected directly into any vein.
Smoking furanylfentanyl

• When indirectly heated, furanylfentanyl will vaporize.

• This is often done by placing it on a small piece of tin foil, heating the bottom of the foil with a lighter/torch, and inhaling the vapor with a pen tub, straw, or other tube.

• After use, the topside of the foil will have a burnt residue and burn marks are left on the bottom side of the foil.
Smoking furanylfentanyl
Inhaling furanylfentanyl in solution

- Due to furanylfentanyl being water soluble, it can be easily dissolved in water and inhaled nasally.

- It is stored in larger bottles and packaged in smaller bottles for sale and use.

- This appears to be the preferred method of high school students and other young people in the FM area. Zicam bottles seem to be popular, but any will work.

- It can be easily concealed and used with little fear of being caught.
Inhaling furanylfentanyl in solution

• Users of furanylfentanyl in this way can be easily identifiable, if you know what you are looking for.

• Dosage for most nasal sprays is 2 sprays per nostril every 3-4 hours, but not to exceed 5 doses in 24 hours.

• Furanylfentanyl uses will spray multiple sprays per nostril very frequently (much more frequently that a nasal spray dosage).
Inhaling furanylfentanyl in solution
Dangers of exposure

- Fentanyl is very potent. Dosage is in micrograms.

- Fentanyl powder is very fine. It can be stirred up into the air very easily.

- It is also easily absorbed through the skin.

- Exposure to any amount could be fatal.

- Any exposure should be treated as a possible overdose. Medical attention should be sought immediately.
Dangers of exposure

• The effects of exposure may be felt immediately or may take some time to be felt.

• The victim of exposure can never be sure as to the amount or dose that they were exposed to.

• If used with other substances, such as stimulants, the effects may be increased.

• But the bottom line is that due to so little scientific data being known about furanylfentanyl, the exact effects could be wide ranging and unpredictable.
Dangers of exposure

• What should you do if you suspect you have been exposed to Fentanyl.
  
  – Call 911 immediately
  
  – Do not wait to try to access the seriousness of the exposure. Any exposure is potentially fatal. Time is of the essence when dealing with a Fentanyl exposure.
Dangers of exposure

• What should you do if you suspect you have found Fentanyl.
  
  – Freeze the scene and move everyone away from the substance.

  – Call local Police, who can safely handle, remove, and store the substance.
Narcan

- Narcan (Naloxone) is an opiate antidote.
- Basically, when administered, Narcan will bind to opiate receptors in brain to stop the body’s intake of opiates.
- Narcan has been used to save lives, but it can give users a false sense of security that if they do overdose they will be saved by Narcan.
- Narcan is not a cure all in regards to an overdose. If not administered in time, the overdose may have already occurred and no amount of Narcan will save the victim.
- Overdoses can result in additional medical problems that Narcan can not reverse.
Narcan

• Narcan is normally found in 2 forms, liquid form in a vial that needs to be injected or in a nasal spray.

• Narcan can be obtained various places, to included the Fargo/Moorhead Good Neighbor project in Moorhead, MN.
  – The Good Neighbor Project provides community outreach, syringe exchange program, Naloxone training and distribution, HIV and Hep C testing, and support groups.
19-03.1-23.4. Overdose prevention and immunity.

An individual is immune from criminal prosecution under sections 19-03.1-22.1, 19-03.1-22.3, 19-03.1-22.5, subsection 7 of section 19-03.1-23, subsection 3 of section 19-03.2-03, and section 19-03.4-03 if that individual contacted law enforcement or emergency medical services and reported that the individual was or that another individual was in need of emergency medical assistance due to a drug overdose. To receive immunity under this section, the individual receiving immunity must have remained on the scene until assistance arrived, cooperated with emergency medical services and law enforcement personnel in the medical treatment of the reported drug overdosed individual, and the overdosed individual must have been in need of emergency medical services. The maximum number of individuals that may be immune for any one occurrence is three individuals. Immunity from prosecution under this section is not applicable for a violation under section 19-03.1-23.1.
Help for those using Fentanyl

- Anyone who uses this substance has a very high likelihood of becoming addicted.
- Tolerance is obtained quickly by users that use it in high doses. Due to this tolerance, users will often increase dosages to attempt to obtain the desire high. This greatly increases the likelihood of overdose.
- Even after several uses, a physical dependence can be developed. Discontinuing use once this physical dependence is developed will result in a very difficult and painful withdrawal.
- Withdrawals are often done in a medical setting, due to the difficulties felt by those coming down. Unsupported withdrawals can be difficult, so much so that many users will use again during the withdrawal process to avoid the difficulties and pain associated with withdrawals.
Help for those using Fentanyl

• Although those experiencing withdrawals do endure a difficult and painful process that can last for multiple days to a week (up to a month in heavy users), the symptoms are non-life threatening.

• However, the physical effects coupled with the psychological effects will often be too powerful and a user experiencing withdrawal will often relapse.

• Withdrawals that can be done in a medical setting are much safer and likely to be successful.
Help for those using Fentanyl

• The bottom line is that anyone that has become addicted to Fentanyl (or other opiate based drugs) must seek help if they wish to successful address their addiction.

• Professionals in the field of addiction can better assess the level of treatment and care that will be needed.

• Family members should also seek help in navigating this difficult and confusing process.
Combating Fentanyl in our communities

• Right now the strategy of Law Enforcement is a very short sighted strategy of trying to prevent the next overdose.
• This involves education on this substance and that this problem exists.
• This is certainly not a viable long term solution.
• This problem can not be arrested away and just acknowledging the problem is not enough.
• The larger long term solution is a solution that involves the entire community.
• A long term solution is being worked on by many within the Fargo/Moorhead community.
Combating furanylfentanyl in our communities

What can you do?

– Secure opiate based pain medications
– Discard unused opiate based pain medications
  • Know where your nearest prescription take back location is located.
– Monitor and report any suspicious activity.
– If you see something, say something!
– Educate others on the dangers of opiate use and the difficulties of addiction.
– If you find yourself or someone you know addicted to these substances, please get help.
Questions?

– TFO Dan Heidbreder – ND DOCR/CCDTF
– 701-239-7268
– dheidbreder@nd.gov