

Partnership for a  
Drug-Free New Jersey

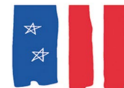
in Cooperation with the Governor's Council on Alcoholism  
and Drug Abuse and the NJ Dept. of Human Services



**NJCARES.gov**  
New Jersey Coordinator for Addiction Responses and Enforcement Strategies

# Fentanyl: What You Need to Know Now

## June 28, 2022



The Partnership For A  
Drug-Free New Jersey

In Cooperation with the Governor's Council on Alcoholism  
& Drug Abuse and the NJ Dept. of Human Services

# Featured Presenters



**Mehruba Anwar Parris, MD**  
**Emergency Physician and Medical Toxicologist**  
**Rutgers University New Jersey Medical School**  
**University Hospital**  
**NJ Poison Information and Education System**

Mehruba Anwar Parris, MD, is a board-certified emergency physician and medical toxicologist at Rutgers University New Jersey Medical School, University Hospital and NJ Poison Information and Education System in Newark. She completed her medical education at Stony Brook University School of Medicine, training in emergency medicine at New York Presbyterian Brooklyn Methodist Hospital, and fellowship in medical toxicology at Emory University/Centers for Disease Control and Prevention (CDC) in Atlanta. Dr. Parris' areas of interest are acute and critical care poisonings, education and public health.



**Special Agent Timothy P. McMahon**  
**Drug Enforcement Administration (DEA) –**  
**New Jersey Division**

Special Agent Timothy P. McMahon has been employed by the Drug Enforcement Administration (DEA) since October 1998 and has been assigned to DEA's New Jersey Division. Prior to becoming a Special Agent with the DEA he spent six years as a trooper with the New York State Police. Special Agent McMahon has been assigned to enforcement and task force groups investigating drug trafficking organizations. He has also served as the Special Agent Recruiter, Demand Reduction Coordinator and Public Information Officer. Special Agent McMahon was promoted to Group Supervisor for the Special Support Unit.



**Marlon Williams, MPH**  
**Forensic Epidemiologist**  
**New York/New Jersey High Intensity Drug**  
**Trafficking Area (HIDTA)**  
**New Jersey Office of the Chief State Medical**  
**Examiner**

For the past seven years, Marlon Williams has been aiming to paint a relatable picture and communicate accurate narratives through the health-related data he analyzes. Marlon received his Bachelor of Arts in Social and Behavioral Science from Seton Hall University in 2016 and later attended Rutgers University School of Public Health, where he received his master's degree in public health concentrating in epidemiology. Currently, Marlon serves as a forensic epidemiologist with the DEA's New York/New Jersey High Intensity Drug Trafficking Area (HIDTA), while also being assigned to the Office of the Chief State Medical Examiner in New Jersey.



## **Mehruba Anwar Parris, MD**

**Emergency Physician and Medical Toxicologist Rutgers University New Jersey**

**Medical School University Hospital**

**NJ Poison Information and Education System**



**RUTGERS**  
BIOMEDICAL AND  
HEALTH SCIENCES

# **Fentanyl**

## **Potency, Clinical Effects and Treatment**

**Mehruba A. Parris, MD**

New Jersey Poison Information and Education System (NJPIES)

Department of Emergency Medicine

Division of Medical Toxicology

Rutgers New Jersey Medical School

June 28,2022



# Objectives

- What is fentanyl?
- Epidemiology and scope of the problem
- Pharmacology and relative potency
- Clinical Effects
- Response to naloxone
- Other concerns

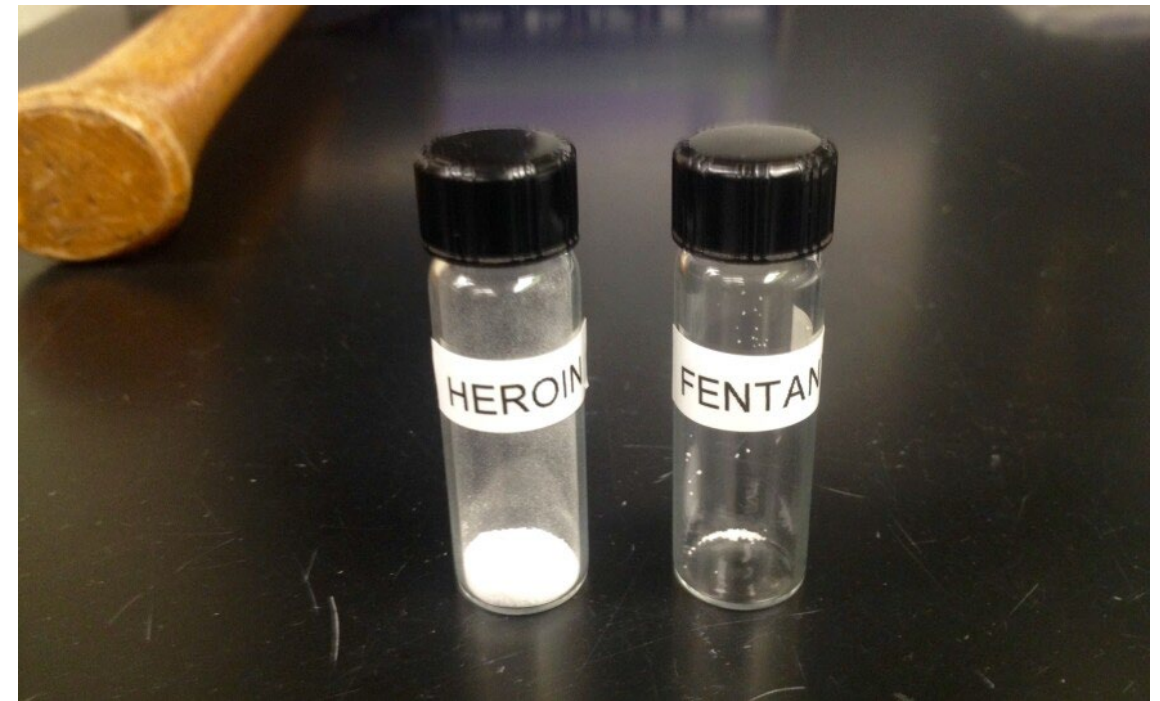
# Disclosure

- I have nothing to disclose.



# Fentanyl

- Synthetic, not derived from opium poppy
- Short-acting opioid
- High-potency
  - 0.75 mg of fentanyl equivalent to 10 mg morphine, 5 mg oxycodone



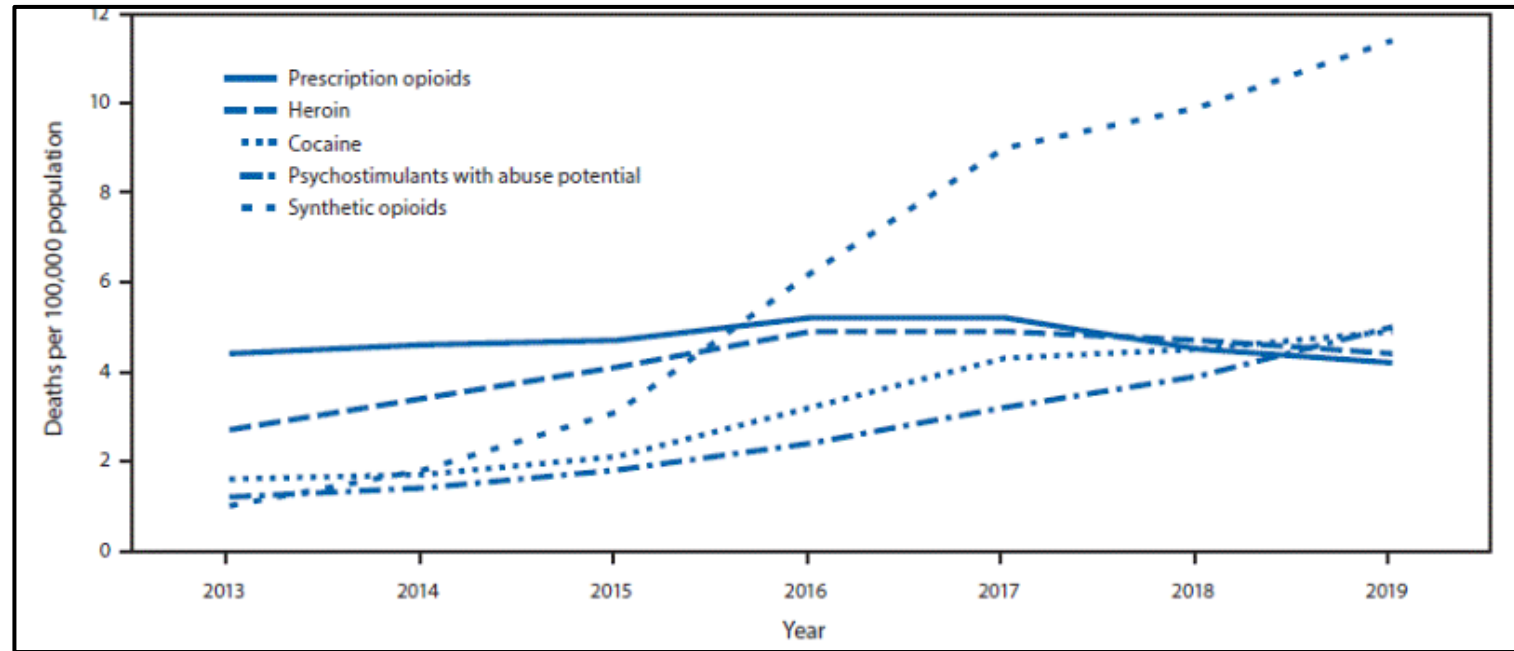
# Fentanyl

- Well absorbed via transmucosal intranasal and intravenous route
  - Not dermally absorbed except through patch
  - Inhalational absorption is poor unless large quantities



# Drug Overdose Deaths – Synthetic Opioids

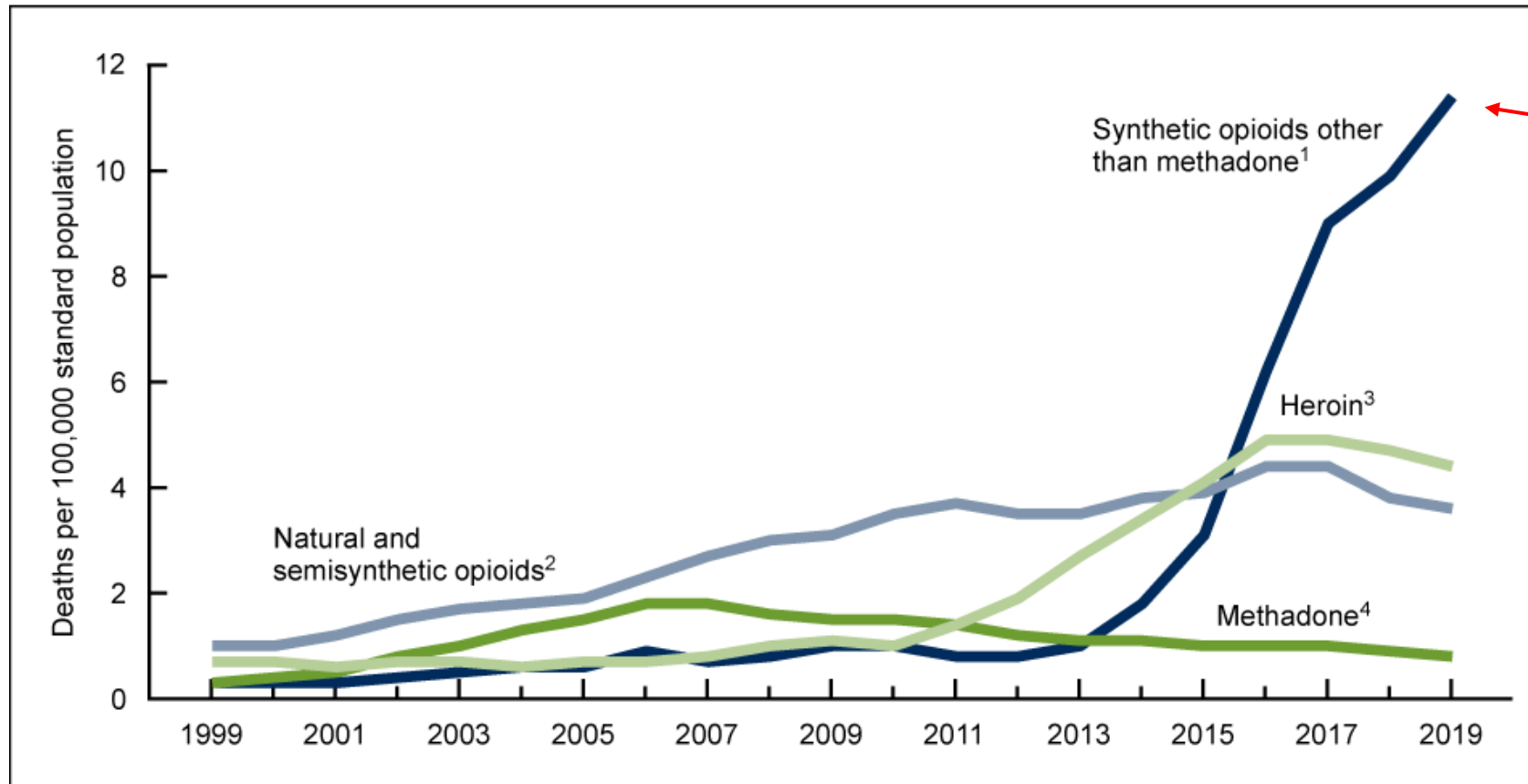
FIGURE 1. Age-adjusted rates\* of drug overdose deaths† involving prescription opioids,§ heroin,¶ cocaine,\*\* psychostimulants with abuse potential,†† and synthetic opioids other than methadone§§,¶¶ — United States, 2013–2019



CDC Wonder Database, [wonder.cdc.gov](https://wonder.cdc.gov)



# Drug Overdose Deaths – Synthetic Opioids



Fentanyl/analogues,  
Tramadol



RUTGERS

# Teen drug overdose deaths rose sharply in 2020, driven by fentanyl-laced pills


April 12, 2022 - 1:11 PM ET



HEALTH

## Driven by fentanyl, rates of fatal teen overdoses doubled in 2020



By [Andrew Joseph](#)  April 12, 2022

[Reprints](#)



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# Pharmacology of Opioids

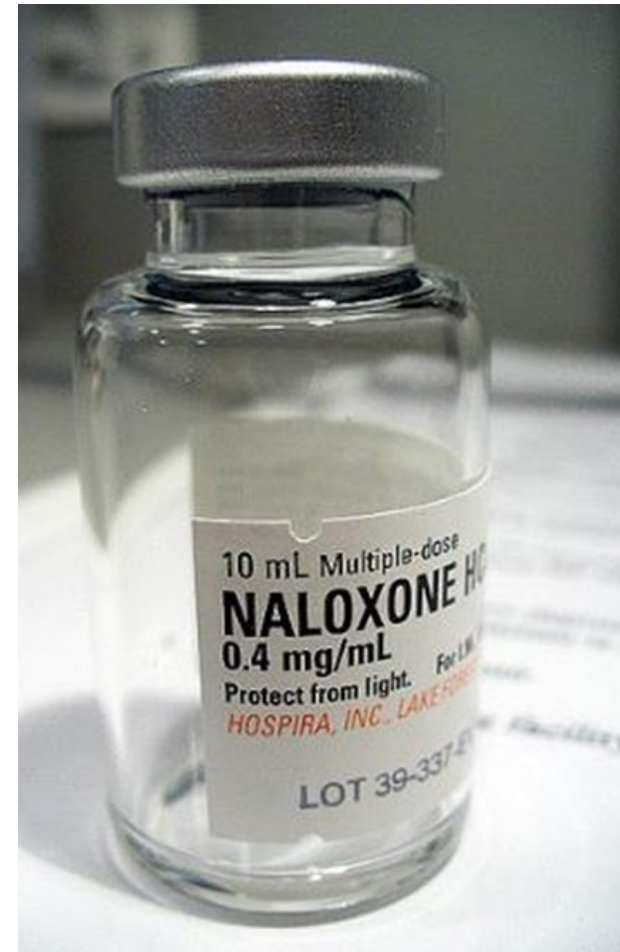
- 3 primary opioid receptors
  1.  $\mu$  (mu)
    - $\mu_1$  : analgesia, euphoria, dependence
    - $\mu_2$  : resp depression, miosis, dependence, pruritis
  2.  $\kappa$  (kappa)
    - dysphoria, miosis, sedation
  3.  $\delta$  (delta)
    - antidepressant, convulsant



Most desirable and  
undesirable effects at the  
mu receptor

# Fentanyl: Naloxone Response

- Narcan®
- First approved by FDA in 1971
- Pure competitive opioid antagonists at the  $\mu > \kappa, \delta$  receptors
- Can be administered IV, IM, SQ, IN
- Higher doses not required for fentanyl



# Bystander/Law Enforcement Exposures



## ACMT Releases Safety Precautions for Emergency Responders in Case of Fentanyl Exposure

Fentanyl exposure safety precautions based on the experience of physicians who specialize in medical toxicology.

PHOENIX, JULY 19, 2017—On July 12, 2017, the American College of Medical Toxicology (ACMT)

The ACMT fentanyl statement recommends that for “routine handling of these drugs, nitrile gloves provide simple protection” and that masks and face shields are only needed in very exceptional circumstances. According to the statement, “Toxicity cannot occur from simply being in proximity of the drug.” In the event drug powder gets on skin, ACMT recommends simply washing it off.

ACMT contends that emergency responders should exercise reasonable caution around unknown drugs. However, excessive personal protective equipment (which has been recommended by some safety organizations) may be harmful because bulky, unnecessary equipment could potentially interfere with vital tasks that emergency responders perform.

The ACMT fentanyl statement recommends that for “routine handling of these drugs, nitrile gloves provide simple protection” and that masks and face shields are only needed in very exceptional circumstances. According to the statement, “Toxicity cannot occur from simply being in proximity of the drug.” In the event drug powder gets on skin, ACMT recommends simply washing it off.

ACMT hopes that this guidance will reassure emergency responders. “Police and emergency medical technicians have challenging jobs,” said Andrew Stolbach, MD, a physician at Johns Hopkins, board member of ACMT and lead author of the statement. “We want these professionals to know that simple commonsense practices, such as wearing gloves, are more than sufficient to protect them. It’s just not plausible that getting a small amount of fentanyl on your skin is going to cause significant opioid toxicity.”



# Thank you!



RUTGERS



**Special Agent Timothy P. McMahon**  
**Drug Enforcement Administration (DEA) –**  
**New Jersey Division**



**DEA**

# **Knock Out Opioid Abuse Day Learning Series Webinar**



## **Fentanyl: What You Need to Know Today**

**ONE  
PILL CAN  
KILL**



# DEA

## DEA Mission

- The men and women of DEA identify, investigate, disrupt, and dismantle major drug trafficking organizations and those who facilitate them; remove drugs and violent criminals from our neighborhoods; and identify and detect the diversion of licit pharmaceutical drugs and listed chemicals.
- The mission of DEA's Office of Diversion Control is to prevent, detect, and investigate the diversion of controlled pharmaceuticals and listed chemicals from legitimate sources **while ensuring an adequate and uninterrupted supply for legitimate medical, commercial, and scientific needs.**

**ONE  
PILL CAN  
KILL**





# DEA

## DEA Domestic Offices



DEA has 222 offices in 23 Divisions

## DEA Foreign Offices



DEA has 91 offices in 71 countries

ONE  
PILL CAN  
KILL



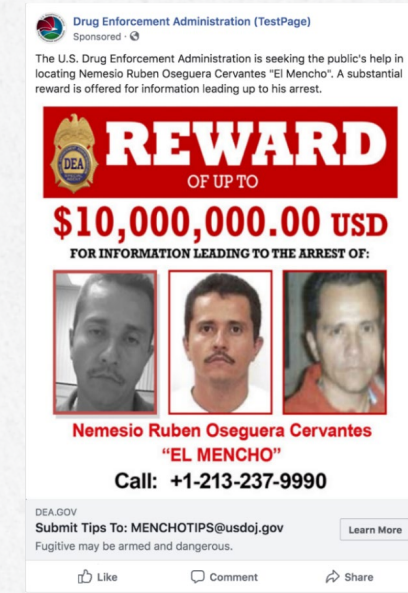


# DEA

## Mexican Transnational Criminal Organizations

- Significant Mexican TCOs Currently Active in the United States

- Sinaloa Cartel
- Cartel Jalisco Nueva Generación (CJNG)
- Beltran-Leyva Organization (BLO)
- Los Zetas and Cartel del Noreste (CDN)
- Guerreros Unidos (GU)
- Gulf Cartel
- Juarez Cartel and La Linea
- La Familia Michoacána (LFM)
- Los Rojos



- The Most Influential TCOs in Mexico are the Sinaloa Cartel and CJNG

- Sinaloa Cartel presence in 15 of the 32 Mexican states
- CJNG presence in 23 of the 32 Mexican states

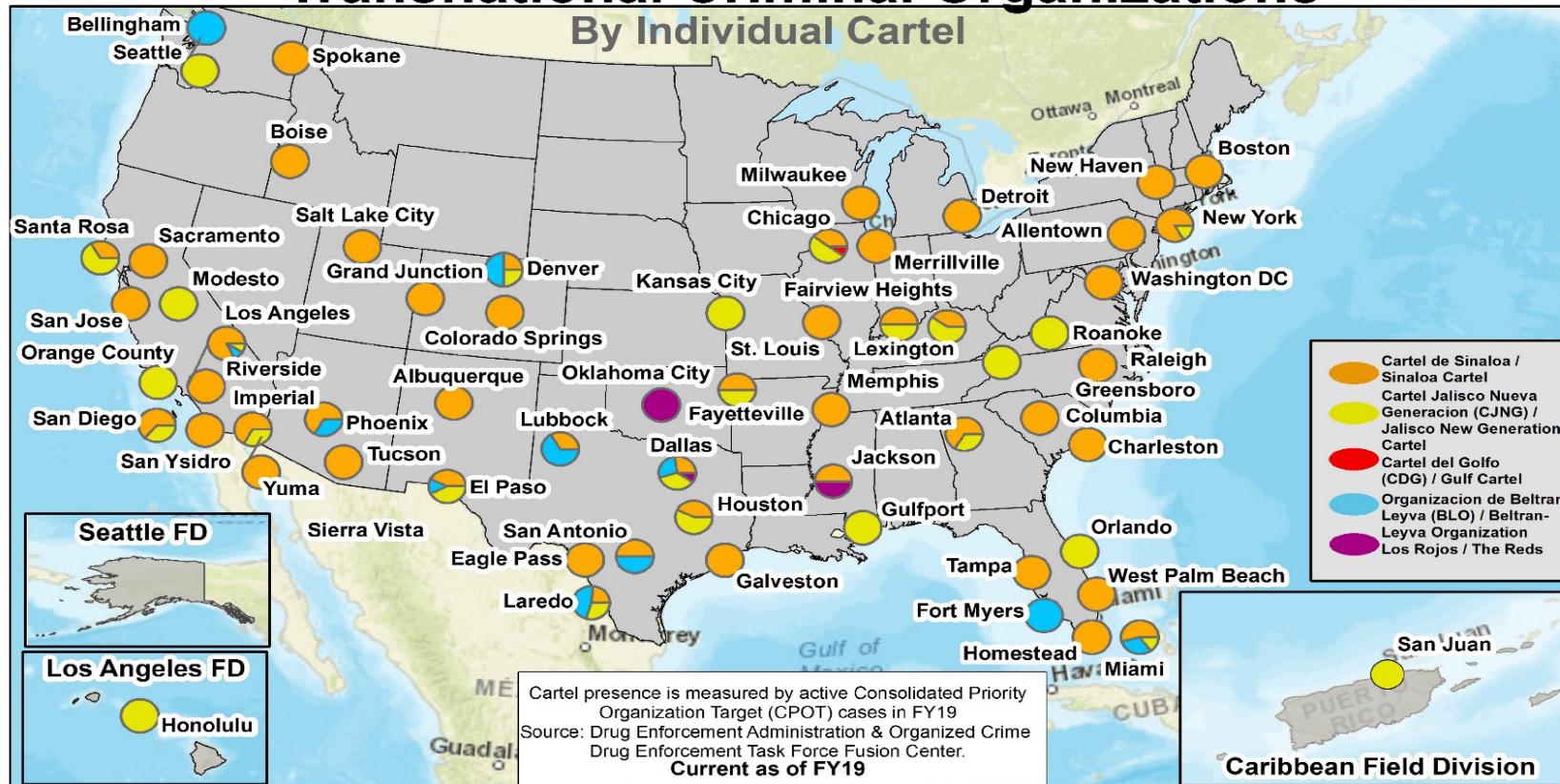
**ONE  
PILL CAN  
KILL**





# DEA

## (U) United States: Areas of Influence of Major Mexican Transnational Criminal Organizations



**ONE  
PILL CAN  
KILL**

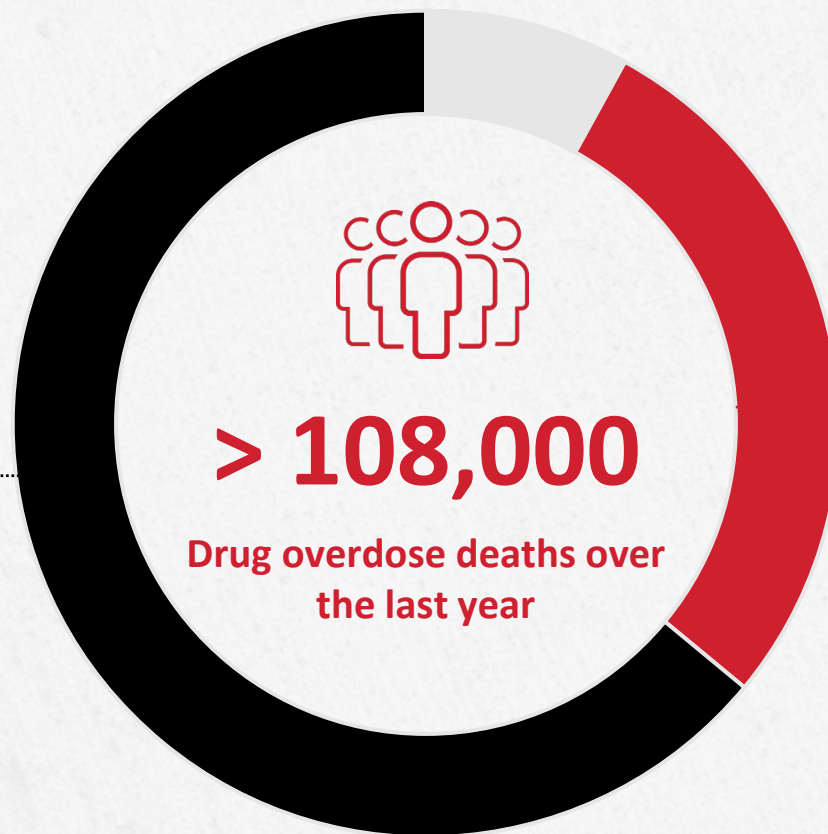




# DEA

## Overdose Deaths

**66%** involved synthetic opioids,  
primarily fentanyl



**26%** involved psychostimulants,  
primarily methamphetamine

**ONE  
PILL CAN  
KILL**

Source: Centers for Disease Control and Prevention





# DEA



**195  
PEOPLE**

die every day from  
a fentanyl/opioid  
overdose



**295  
PEOPLE**

die every day  
from all drug  
overdoses

**ONE  
PILL CAN  
KILL**

Centers for Disease Control and Prevention

UNCLASSIFIED





# DEA

## What is Fentanyl?

- Fentanyl is a synthetic opioid typically used to treat patients with chronic severe pain or severe pain following surgery.
- Fentanyl is a Schedule II controlled substance that is similar to morphine but about 100 times more potent.
- Under the supervision of a licensed medical professional, fentanyl has a legitimate medical use. Patients prescribed fentanyl should be monitored for potential misuse or abuse.
- Two milligrams of fentanyl can be lethal depending on a person's body size, tolerance and past usage.



**ONE  
PILL CAN  
KILL**

UNCLASSIFIED





# DEA

## Fentanyl



**ONE**  
**PILL** ~~CAN~~  
**KILL**





# DEA

## Types of Fentanyl

- White powder
- Counterfeit pills
- Black tar
- Pharmaceutical forms (patch, lozenge)
- Derivatives (“analogs”)
- Varies Colors-marketing



**ONE  
PILL CAN  
KILL**

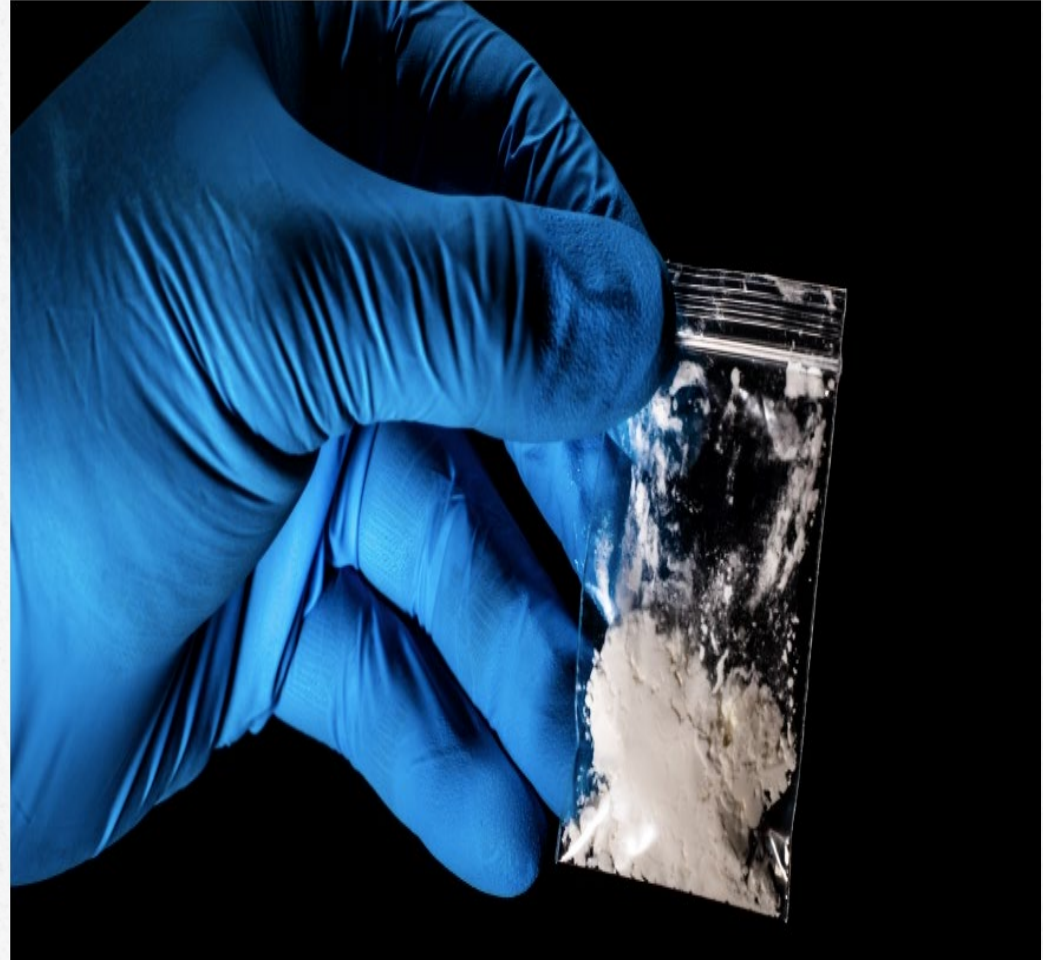




# DEA

## How is it abused?

- Injected
- Snorted/sniffed
- Smoked
- Taken orally by pill or tablet
- Spiked onto blotter paper



**ONE  
PILL CAN  
KILL**

UNCLASSIFIED





# DEA

## Origins of Fentanyl

- About 90 percent of counterfeit pills seized in the United States are smuggled from Mexico; however, most synthetic opioids available domestically can be traced to China.
- Because of its low dosage range and potency, one kilogram of fentanyl purchased in China for \$3,000 - \$5,000, has the potential to make 500,000 pills, which then sell for upwards of **\$1.5 million** in revenue on the black market.
- **One kilogram of fentanyl has the potential to kill half-a-million people.**



**ONE  
PILL CAN  
KILL**

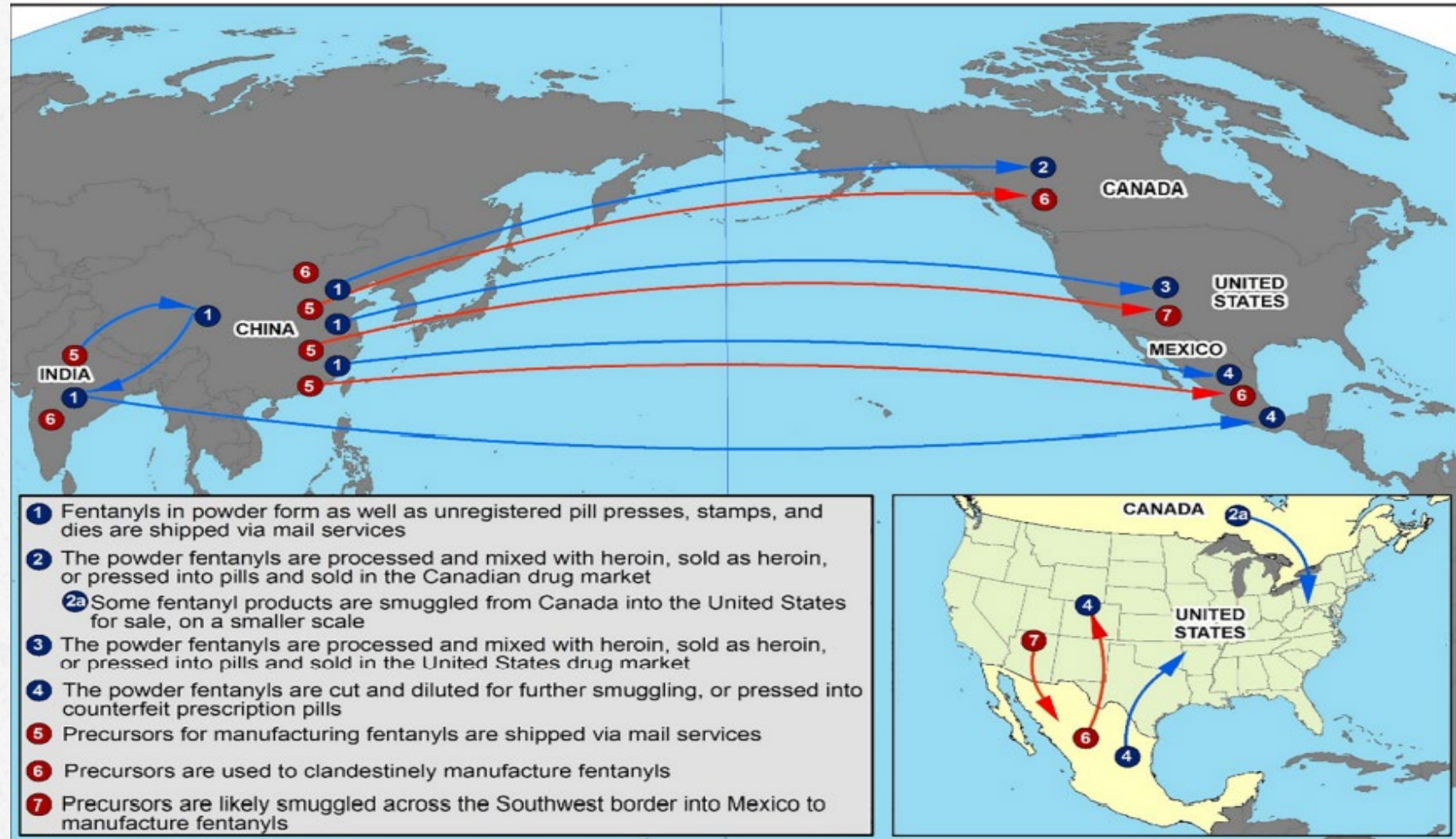
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# DEA

## Fentanyl Flow Into the United States



Source: DEA

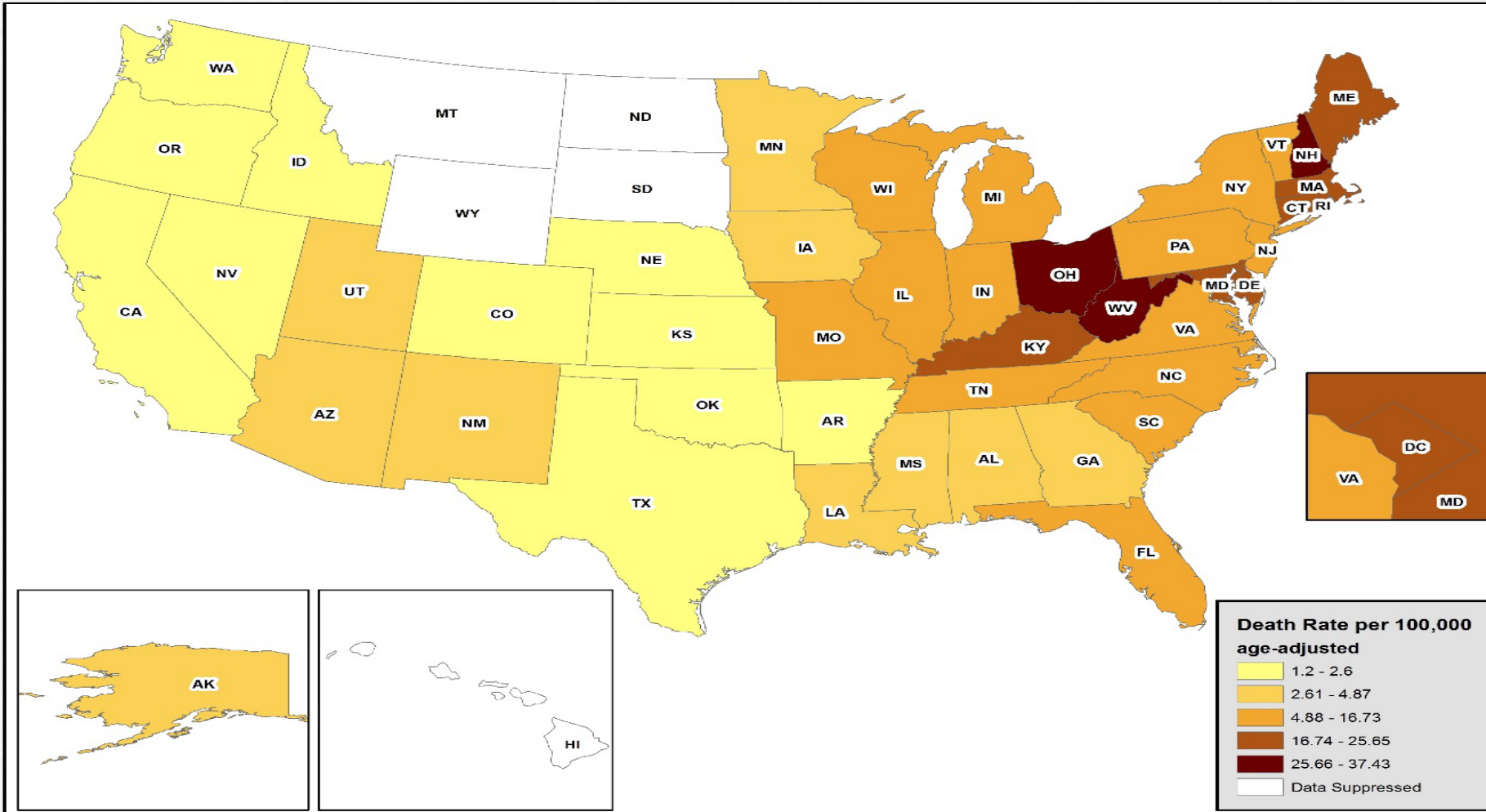
**ONE  
PILL CAN  
KILL**

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# Domestic Fentanyl Use



**ONE**  
**PILL CAN**  
**KILL**

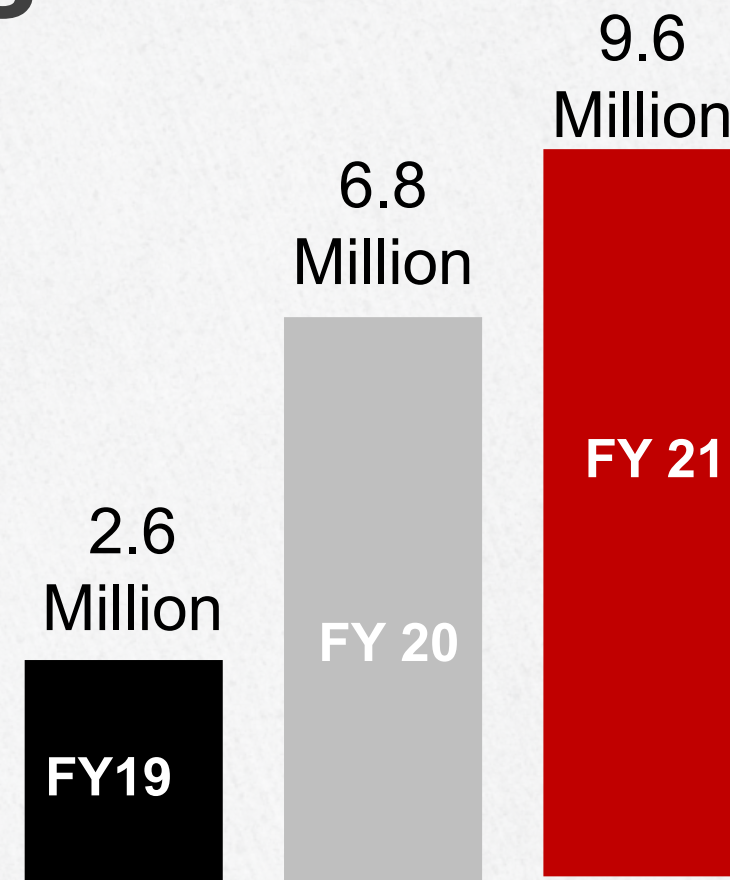
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DEA

# Counterfeit Prescription Pills



**ONE  
PILL CAN  
KILL**

**DEA and law enforcement partners are seizing deadly fake pills at record rates**

UNCLASSIFIED





# DEA

**Authentic Oxycodone**



**Counterfeit Oxycodone**



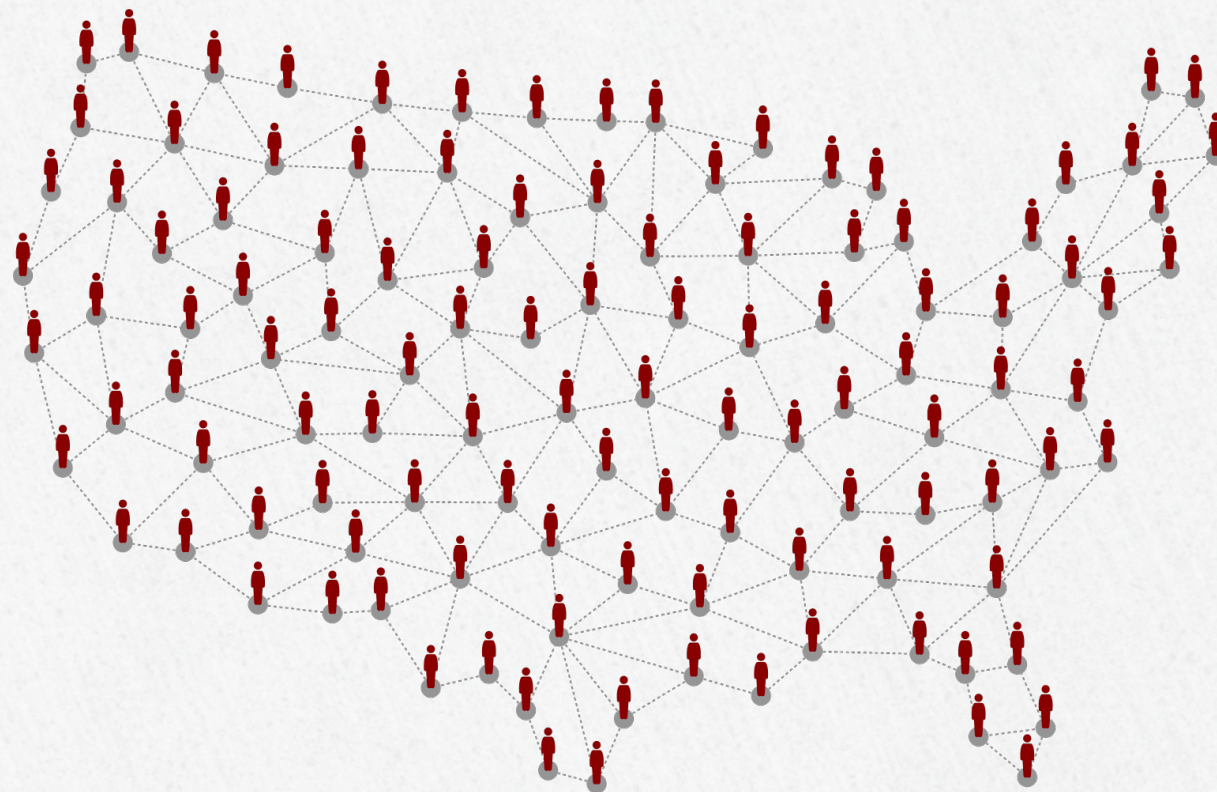
**ONE  
PILL CAN  
KILL**





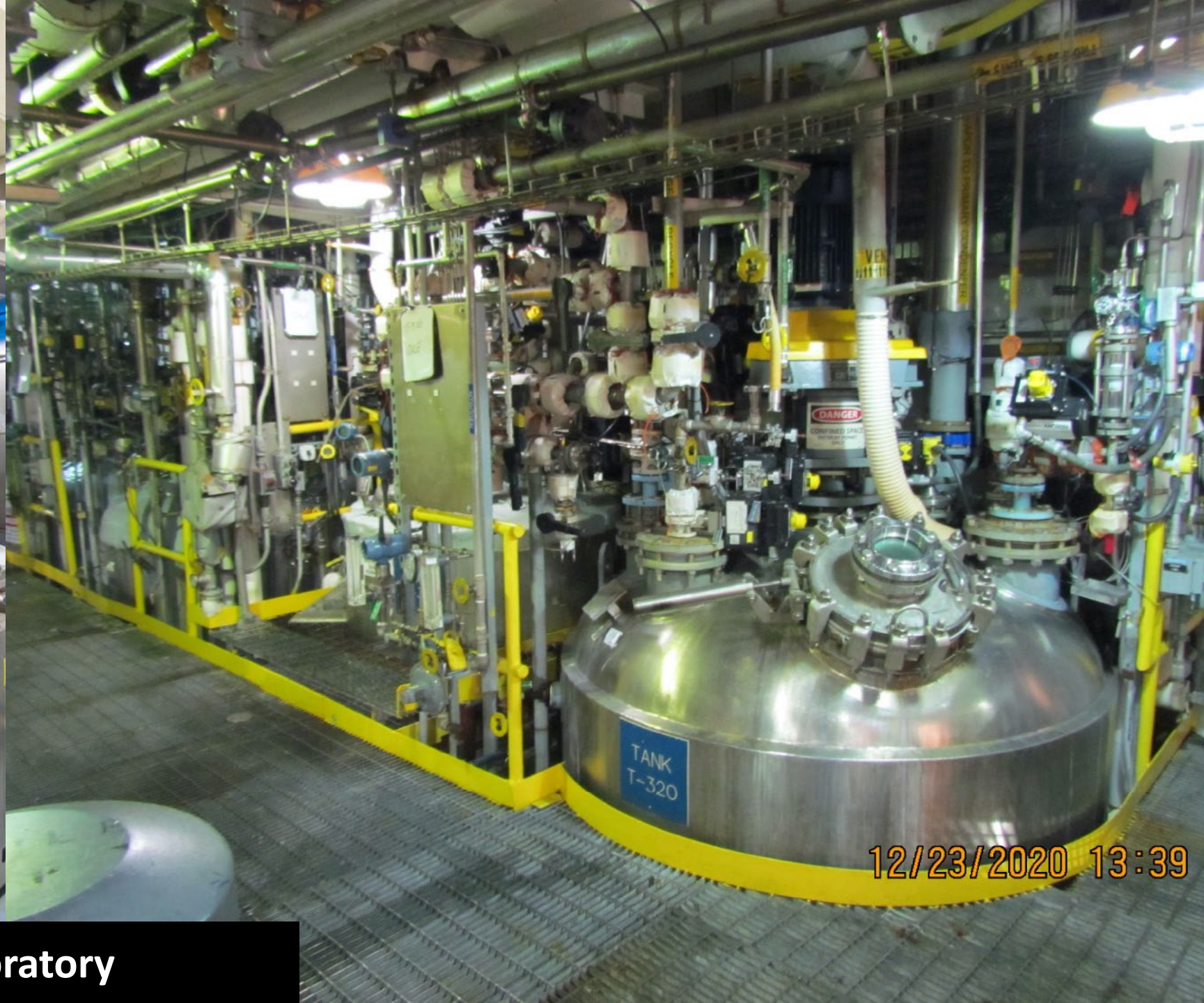
# DEA

The record quantities of fentanyl that DEA seized in 2021 are enough to **kill every American.**



**ONE**  
**PILL** ~~CAN~~  
**KILL**





Medical grade fentanyl laboratory





Illicit fentanyl laboratory





# DEA

Shelf contains  
approximately  
**1.2 Million**  
Fentanyl Pills



Photo Courtesy: Phoenix Field Division

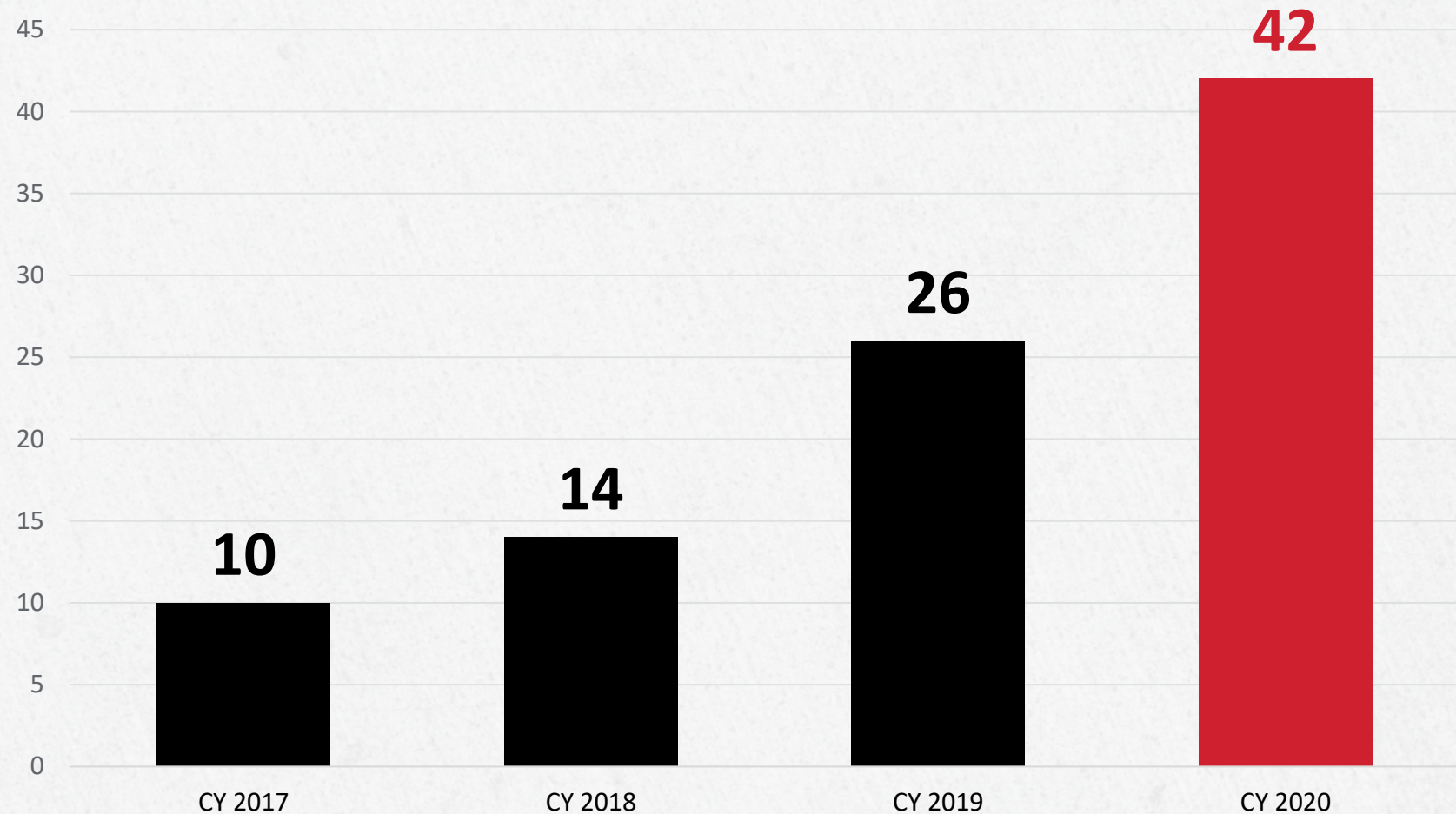
**ONE**  
**PILL** ~~CAN~~  
**KILL**





# DEA

## Percentage of Tablets Containing 2 mg or More of Fentanyl CY 2017–CY 2020



**ONE  
PILL CAN  
KILL**

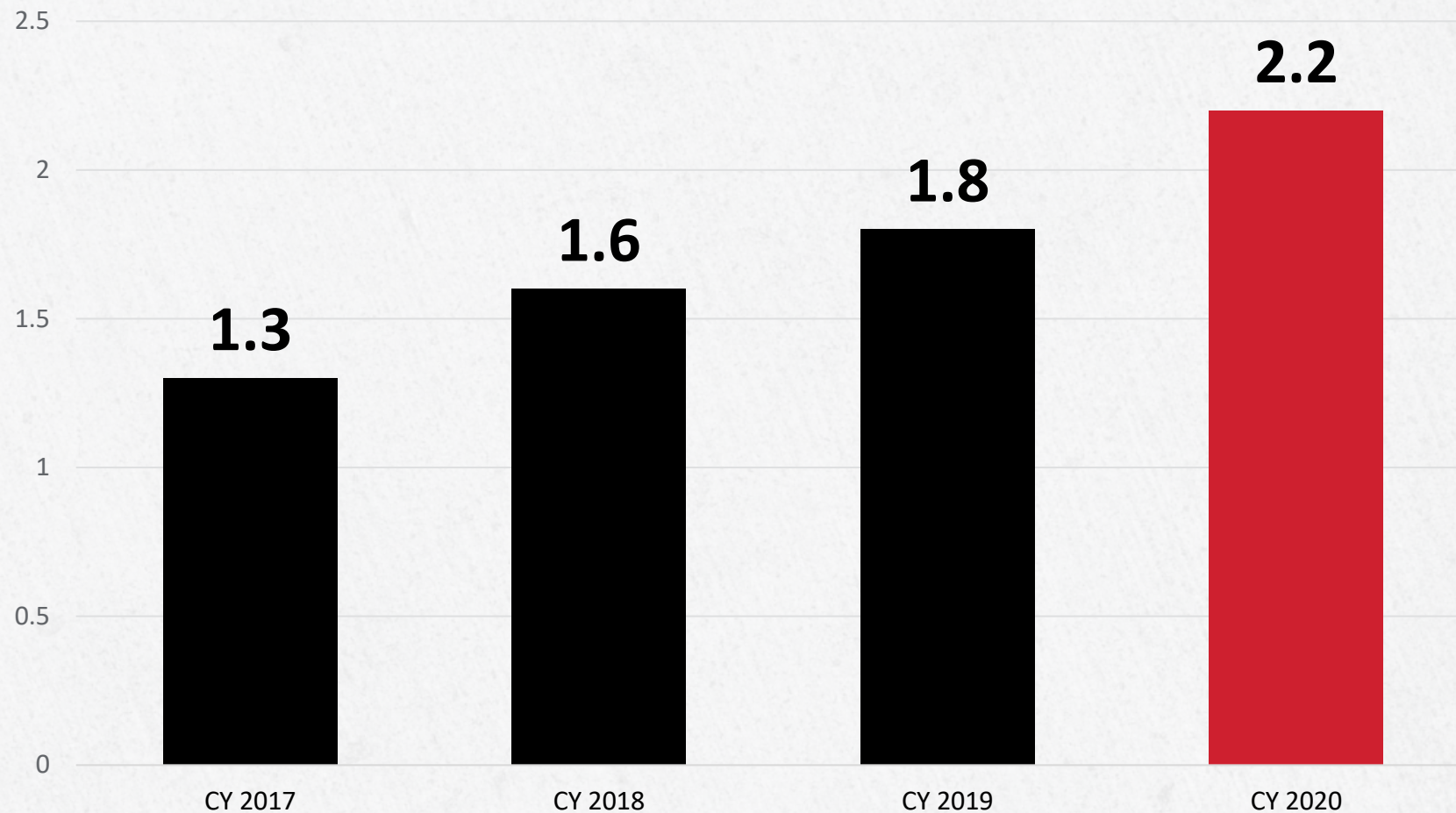
Source: Fentanyl Signature Profiling Program Report, July 2021





# DEA

## Average Fentanyl Dose in Tablets (mg/tablet) CY 2017–CY 2020



**ONE  
PILL CAN  
KILL**

Source: Fentanyl Signature Profiling Program Report, July 2021



# DEA



**ONE**  
**PILL** ~~CAN~~  
**KILL**





# DEA



## Additional Threat: Access

Fake Rx pills are easily accessible & often sold on social media & e-commerce platforms; available to anyone with a smartphone.

**ONE  
PILL CAN  
KILL**



# DEA

## Popular Emoji Drug Codes

| Oxycodone



| Xanax®



| Percocet®



| Adderall®



## Additional Threat: Access

Monitoring for suspicious text messages on social media or cash app posts could spark an important, and potentially life-saving, conversation.

**ONE  
PILL CAN  
KILL**





# DEA

## Isotonitazene (ISO)



**ONE  
PILL CAN  
KILL**





# DEA



## Isotonitazene

- Also known as “ISO” or “Toni”, is a synthetic opioid that is more potent than heroin and morphine, and similar in potency to fentanyl.
- Most commonly pressed into counterfeit pills .
- Examples:
  - Disguised as 8mg Dilaudid tablets, indicated by a “M” on one side and an “8” on the other
  - Mixed with fentanyl and other substances and pressed into fake pills such as M30s and oxycodone
  - Also mixed with other powder substances such as heroin, methamphetamine, and cocaine.

ISO was first identified in August 2019 primarily in the Midwest region, but in recent years it has moved into the southern and eastern United States.

**ONE  
PILL CAN  
KILL**





# DEA

## “ISO” cont.

- Permanently listed as a Schedule I.
- China identified as main source country for ISO.
- Risk of overdose death appears to increase when it is combined with fentanyl.
- A typical dose of naloxone has been ineffective in counteracting overdose symptoms related to ISO. Typically, multiple doses of naloxone may be required.



**ONE  
PILL CAN  
KILL**





**ONE**  
**PILL** ~~CAN~~  
**KILL**



[www.dea.gov/onepill](http://www.dea.gov/onepill)





# DEA

## Thank you



Timothy P. McMahon  
Group Supervisor  
DEA – New Jersey Division  
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[Timothy.p.mcmahon@dea.gov](mailto:Timothy.p.mcmahon@dea.gov)

**ONE  
PILL CAN  
KILL**





**Marlon Williams, MPH**

**Forensic Epidemiologist**

**New York/New Jersey High Intensity Drug Trafficking Area (HIDTA)**

**New Jersey Office of the Chief State Medical Examiner**



# FENTANYL OVERDOSE DEATHS IN NEW JERSEY

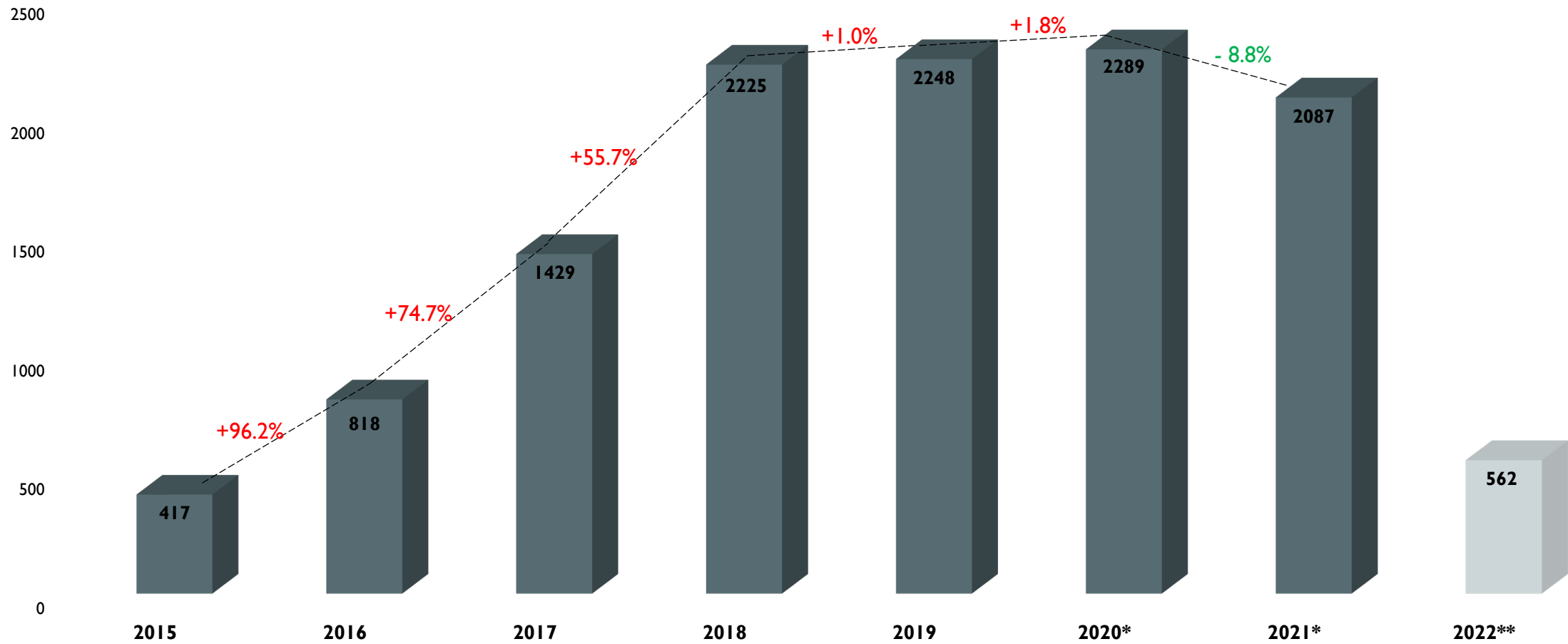
Presented by: Marlon Williams, MPH – Forensic Epidemiologist

Contact: [marlon.williams@doh.nj.gov](mailto:marlon.williams@doh.nj.gov)



State of New Jersey  
Department of Health  
Office of the Chief State Medical Examiner

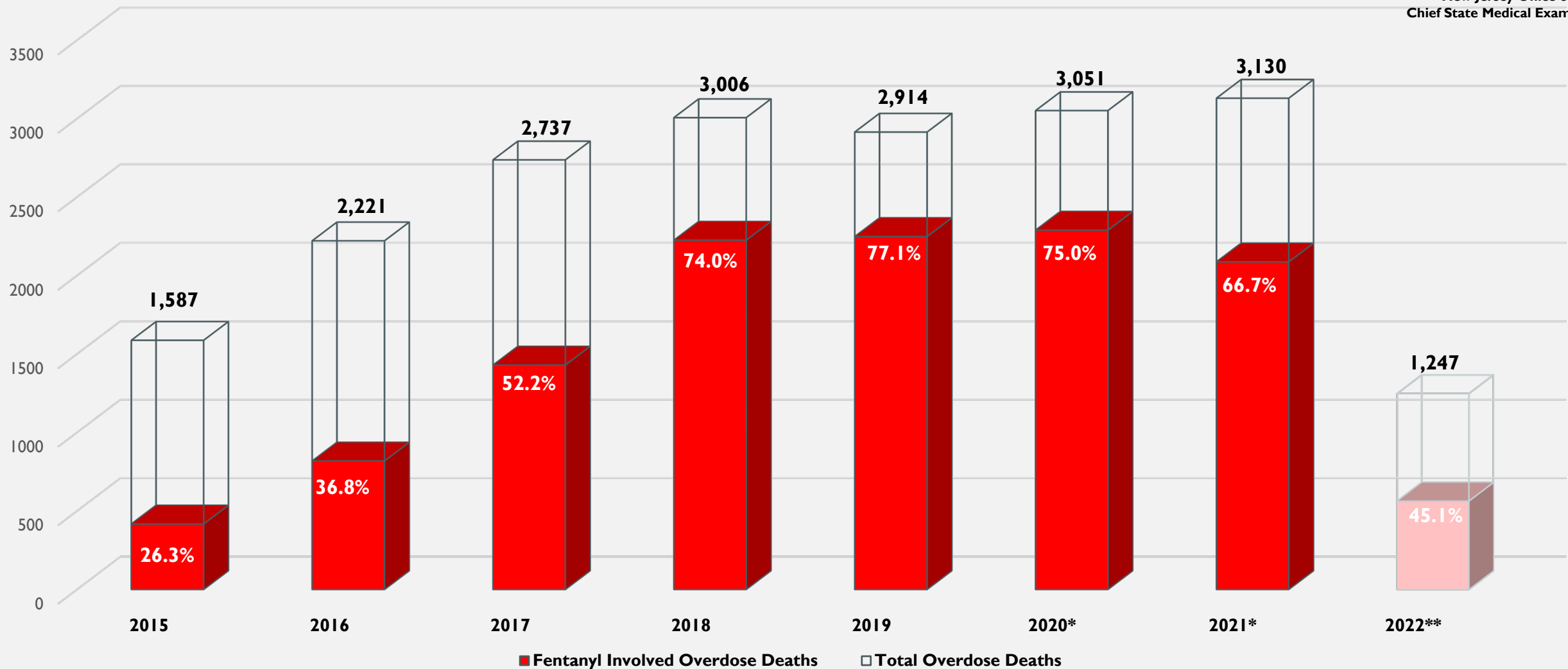




## FENTANYL'S PRESENCE IN NEW JERSEY DRUG OVERDOSE DEATHS

*\*2020 and 2021 numbers are "suspected" and will change as more information about the cases becomes available.*

*\*\*2022 numbers represent Jan 1, 2022 – May 31, 2022, are "suspected", and will change as more information about the cases becomes available.*



**TOTAL OVERDOSE DEATHS  
VS.  
FENTANYL INVOLVED DEATHS**

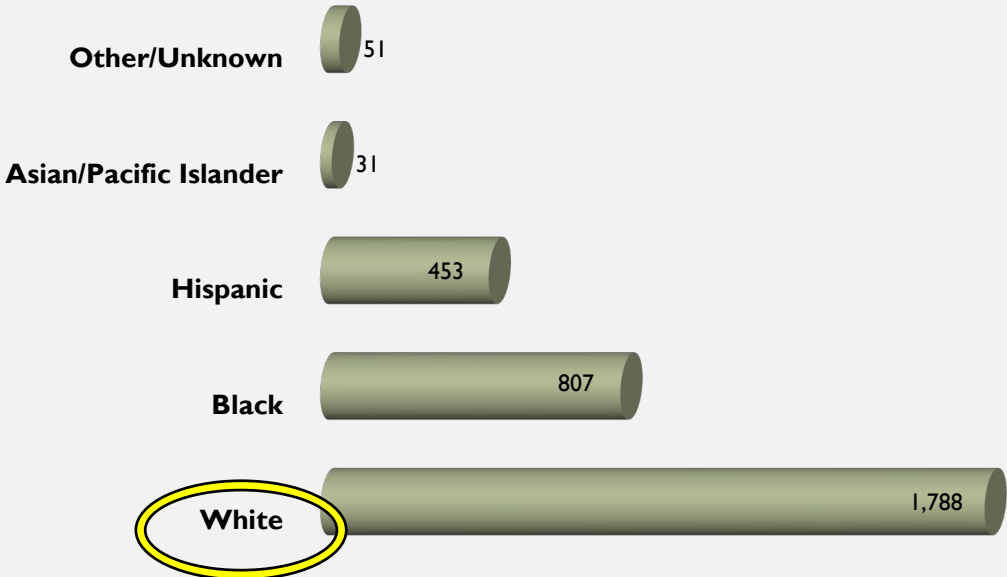
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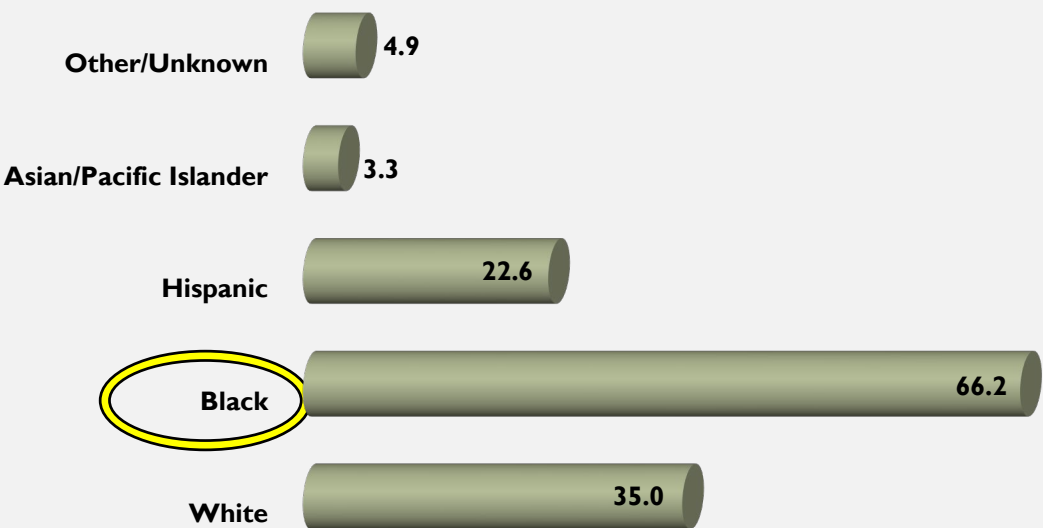


# DRUG OVERDOSE DEATHS BY RACE (2021\*)

## TOTAL OVERDOSE DEATHS



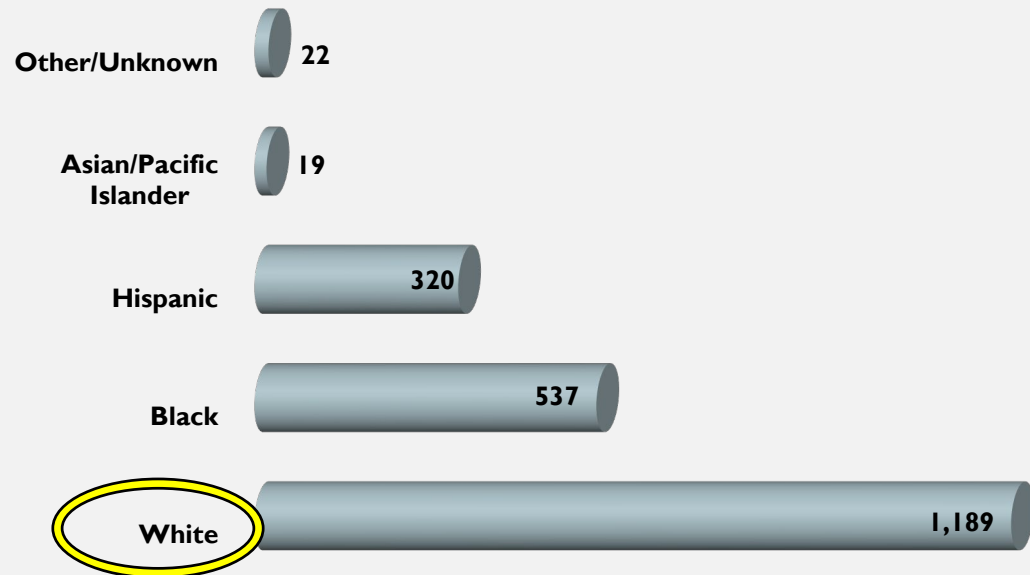
## OVERDOSE DEATH RATE (PER 100,000)



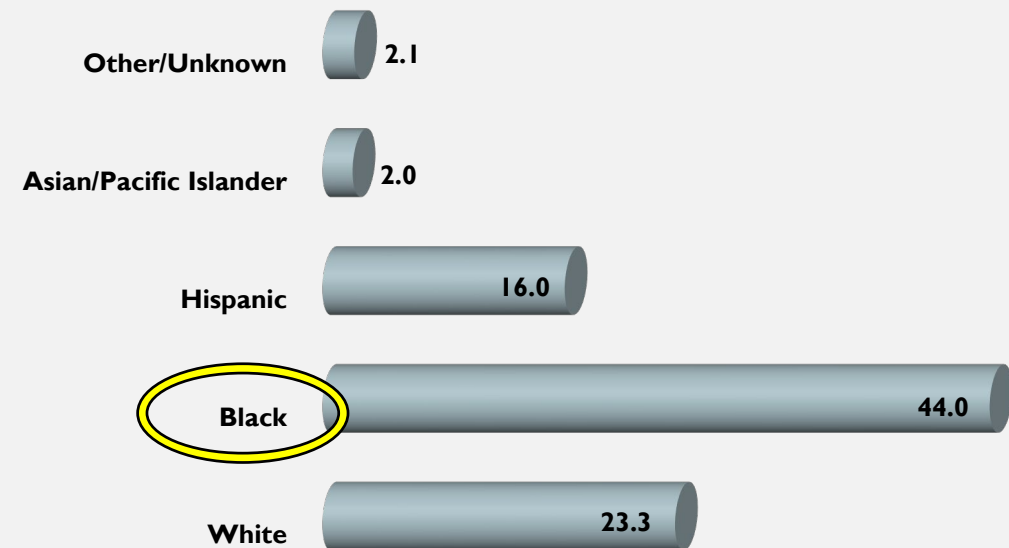
\*2021 numbers are "suspected" and will change as more information about the cases becomes available.

## FENTANYL INVOLVED OVERDOSE DEATHS BY RACE (2021\*)

### TOTAL FENTANYL INVOLVED OVERDOSE DEATHS



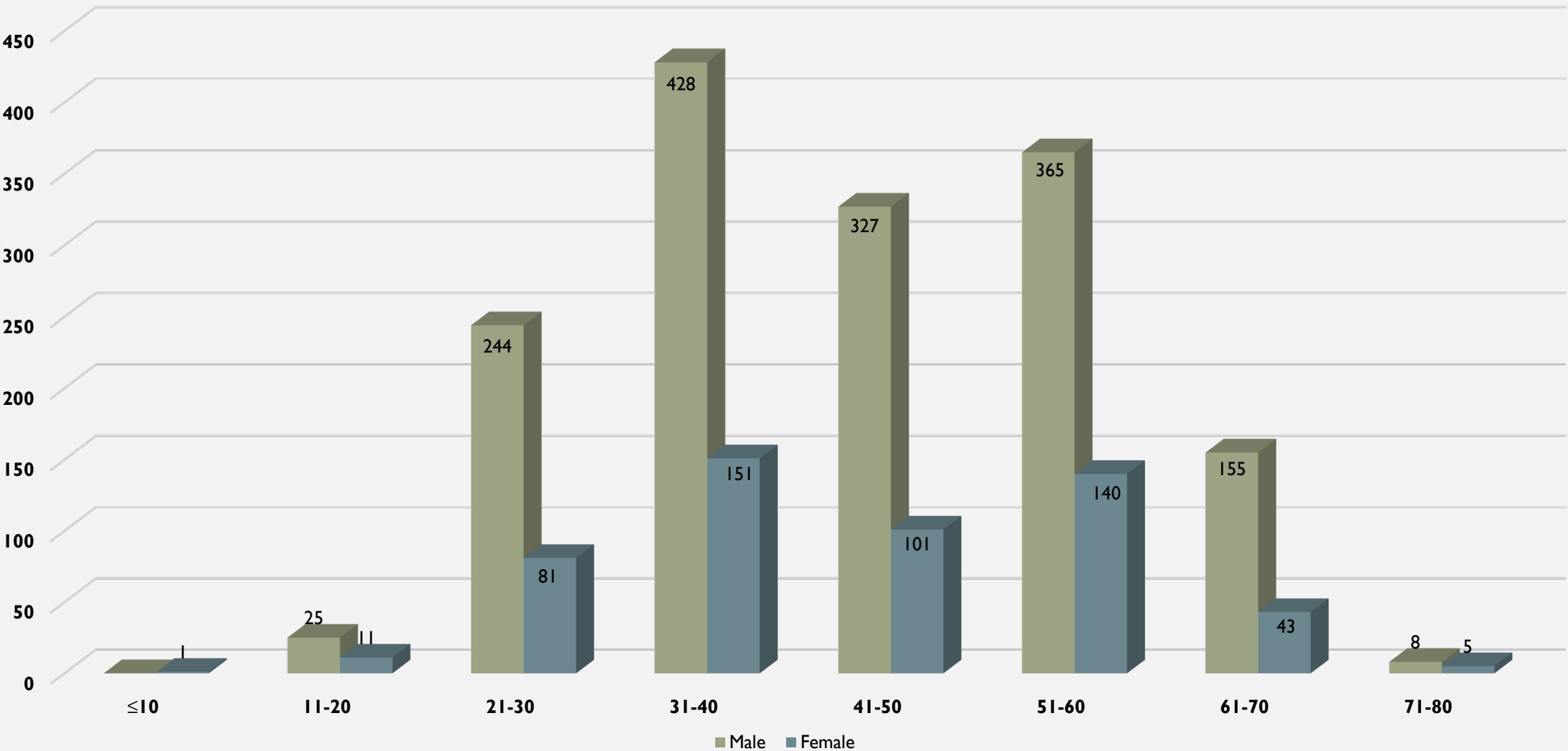
### FENTANYL INVOLVED OVERDOSE DEATH RATE (PER 100,000)



\*2021 numbers are "suspected" and will change as more information about the cases becomes available.



# FENTANYL INVOLVED OVERDOSE DEATHS BY AGE & GENDER(2021\*)

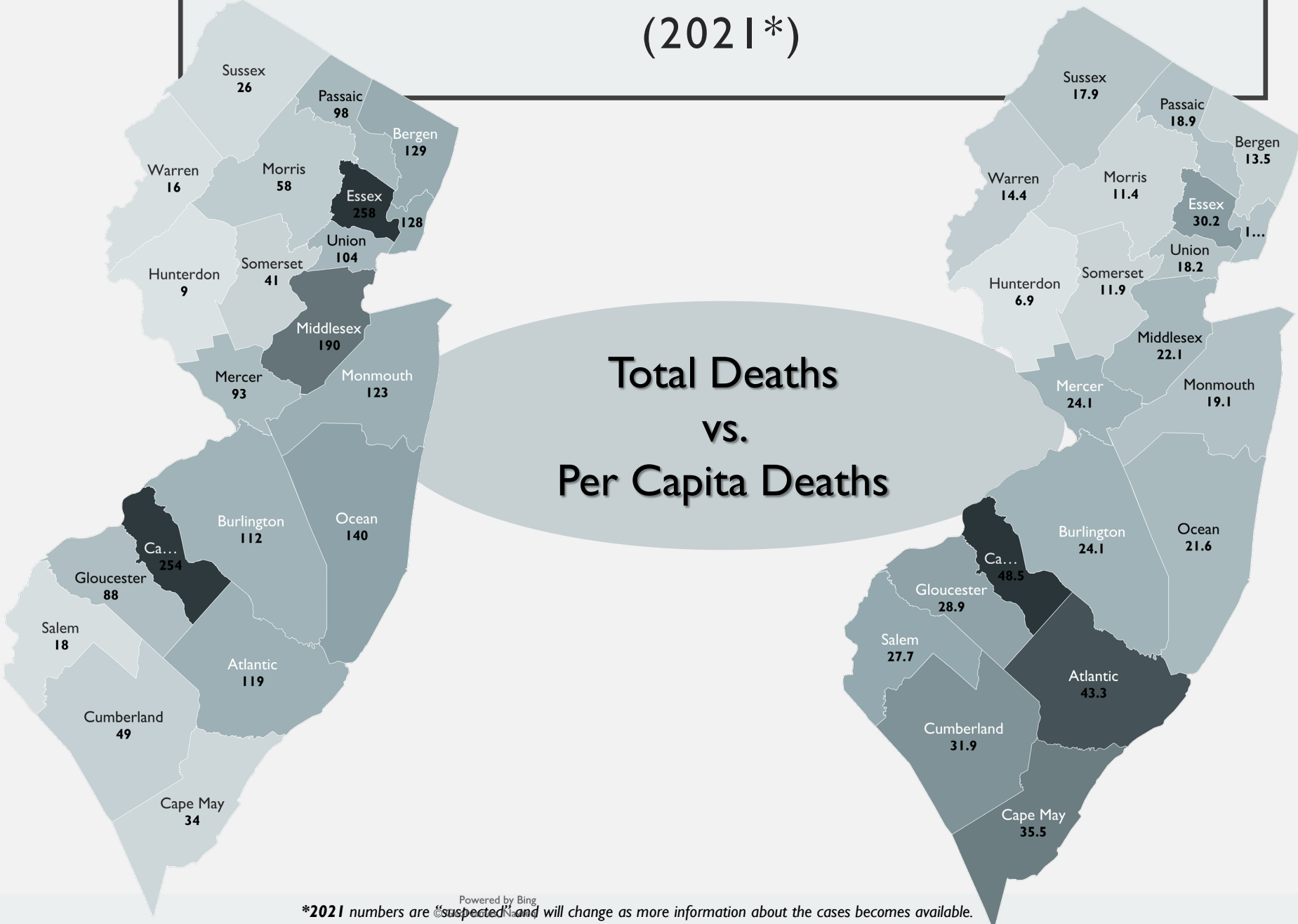


*\*2021 numbers are "suspected" and will change as more information about the cases becomes available.*

# SUSPECTED FENTANYL INVOLVED DEATHS (2021\*)

Series I  
258  
133.5  
9

Series I  
48.5  
27.7  
6.9

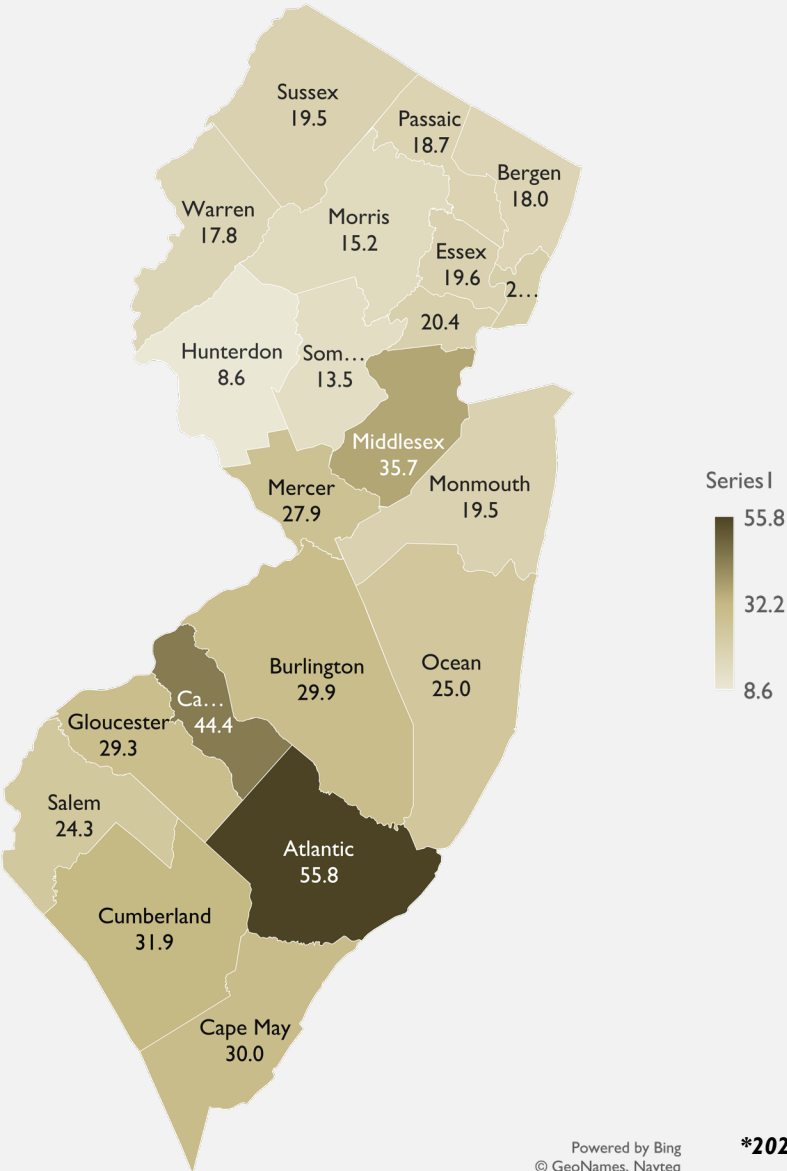


\*2021 numbers are suspected and will change as more information about the cases becomes available.

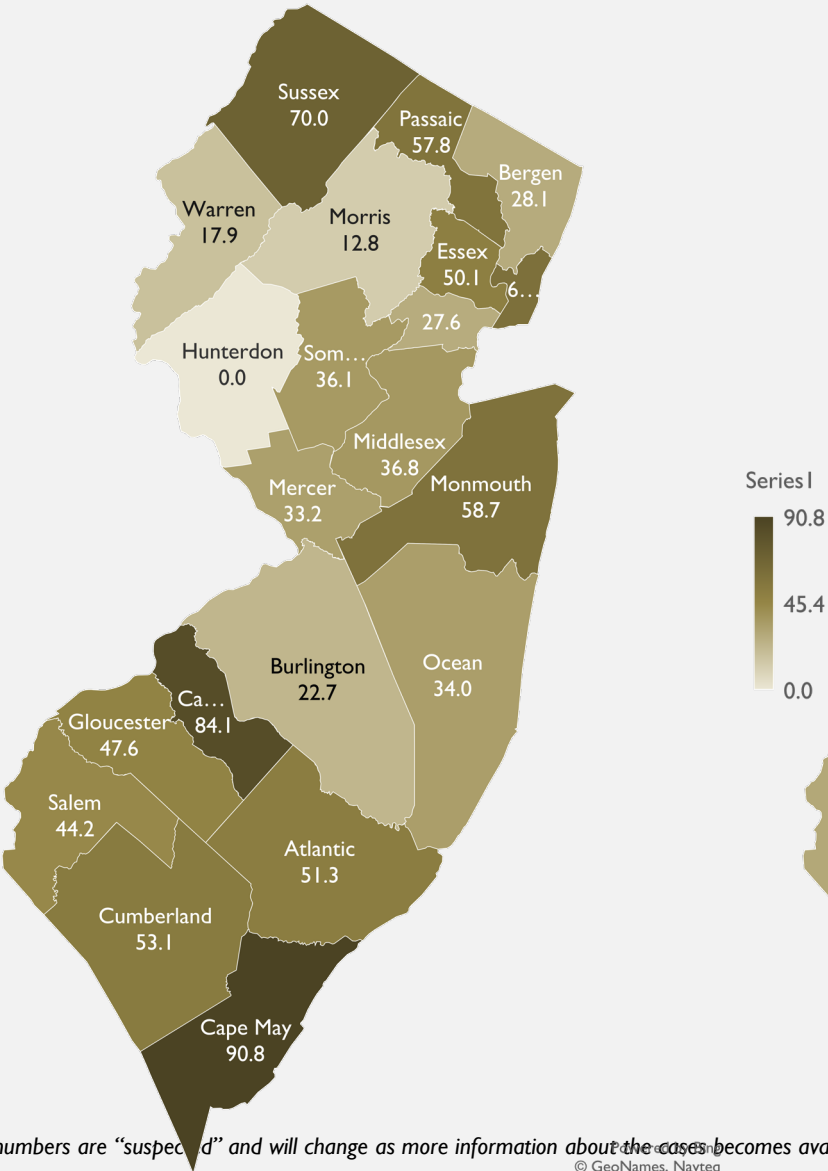


# FENTANYL FATALITIES PER CAPITA BY RACE & COUNTY (2021\*)

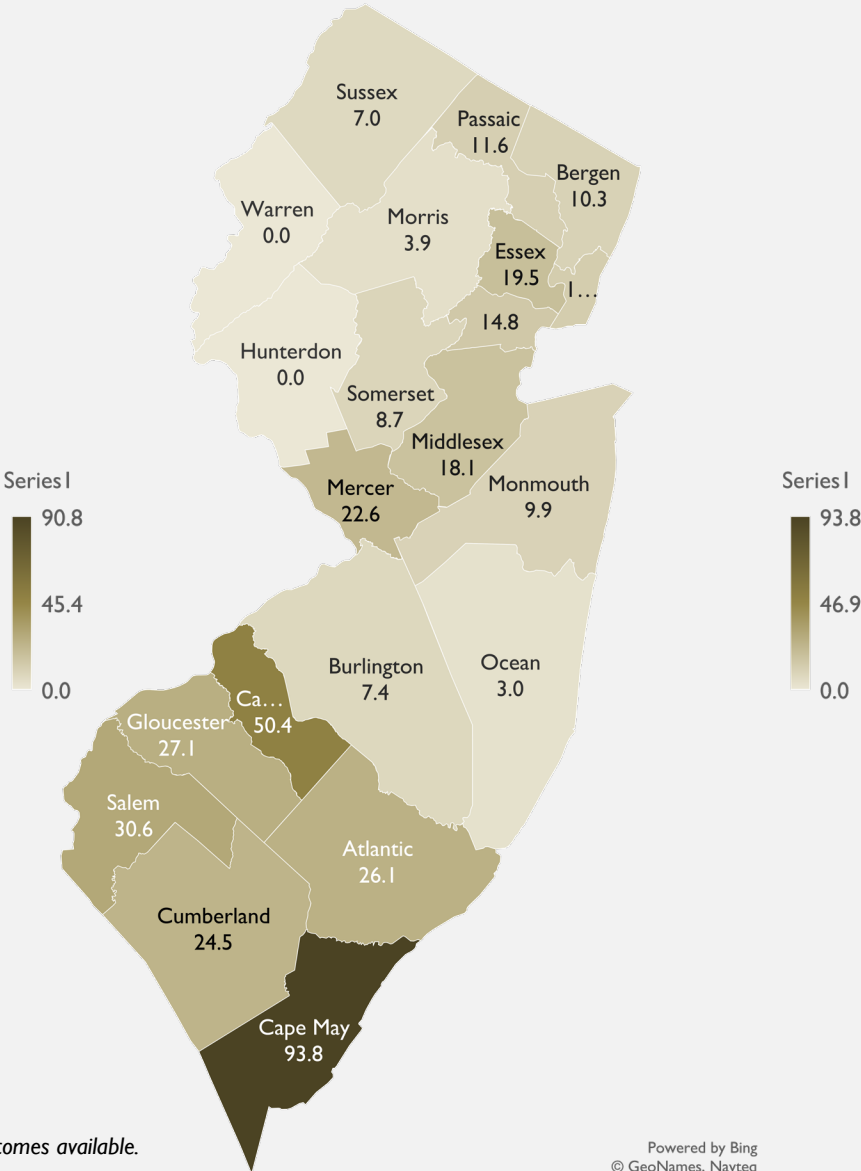
White Fatalities



Black Fatalities



Hispanic Fatalities



\*2021 numbers are "suspected" and will change as more information about the cases becomes available.

# FENTANYL ANALOGS

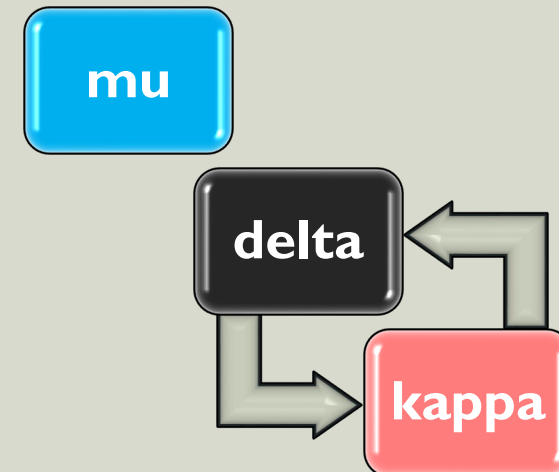
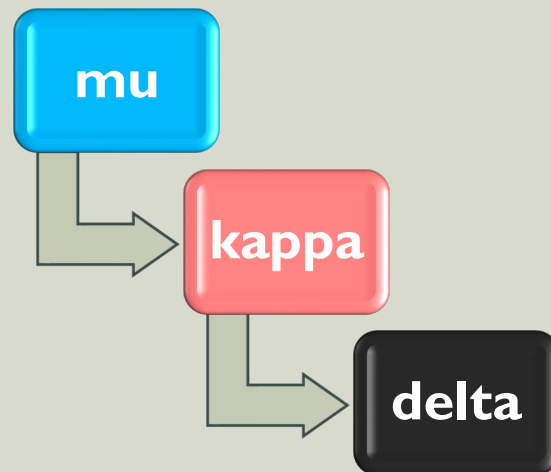
- Produced by pharmaceutical companies (non-illicit) intended for severe pain and advance stages of cancer.
- “Typically,” an Illicit opioid that possesses similar chemical structure to fentanyl.
- Differing in one chemical component which establishes a new substance/derivative of fentanyl.



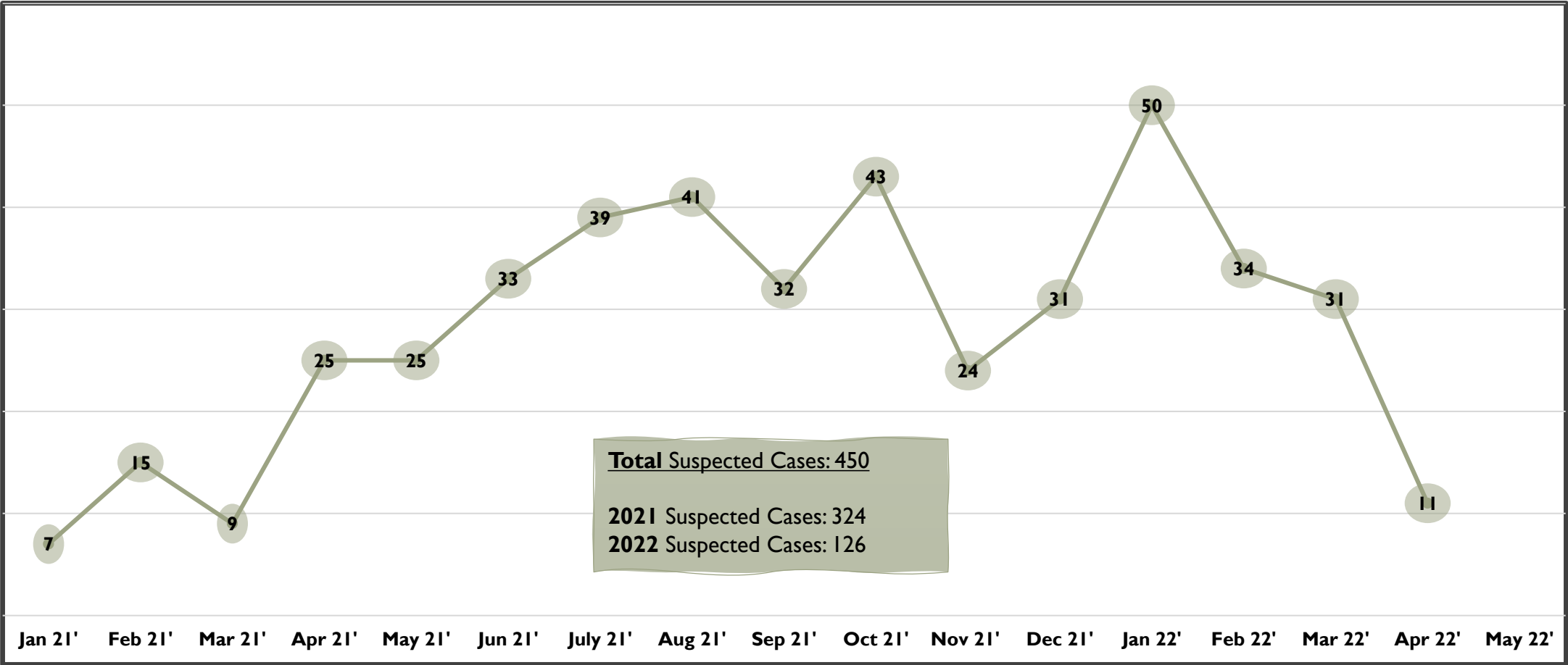


# EMERGING THREAT OF PARA-FLUOROFENTANYL

- Para-Fluorofentanyl is an analgesic analogue of Fentanyl.
- **Analgesic potency** of Para-Fluorofentanyl is **16X's** that of the effects of **morphine** BUT **30%** of **Fentanyl**.
- **LD<sub>50</sub>** of Para-Fluorofentanyl is **LOWER** than Fentanyl and Morphine.
- Potency chemical profile alters –
  - From (Fentanyl):
  - To (Para-Fluorofentanyl):



# SURVEILLANCE OF PARA-FLUOROFENTANYL

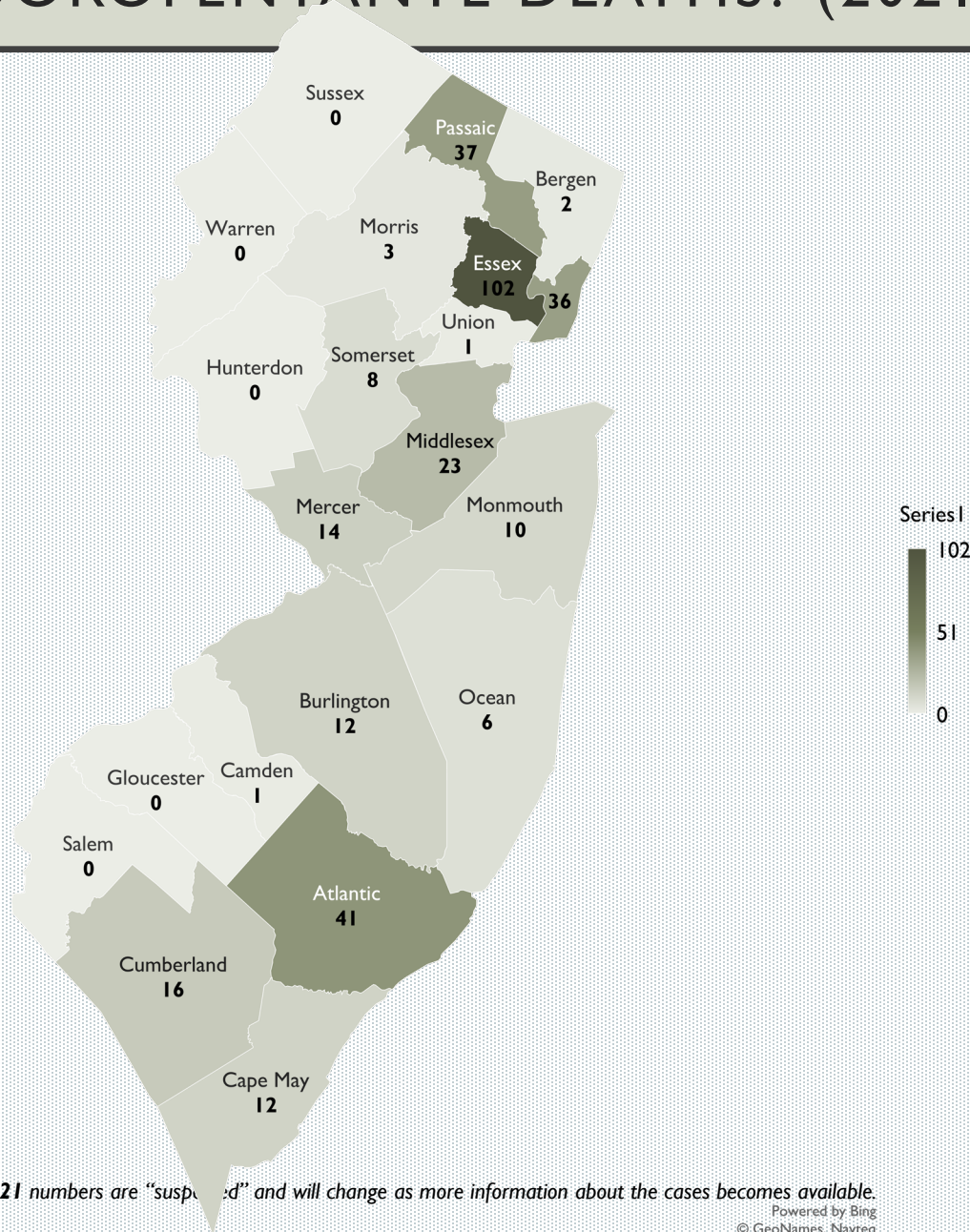


*\*2021 numbers are “suspected” and will change as more information about the cases becomes available.*

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# WHERE ARE WE SEEING PARA-FLUOROFENTANYL DEATHS? (2021\*)



\*2021 numbers are "suspected" and will change as more information about the cases becomes available.



## **UPCOMING WEBINAR**

# **The Role of Medication for Opioid Use Disorder in Fighting the Opioid Crisis**

**11 a.m. Thursday, July 14, 2022**

**Register at [KnockOutDay.DrugFreeNJ.org/events](https://KnockOutDay.DrugFreeNJ.org/events)**

