

Toxicology: The New Drugs of Abuse



Tony Pizon, M.D.

UPMC Division of Medical Toxicology
Pittsburgh Poison Center

1

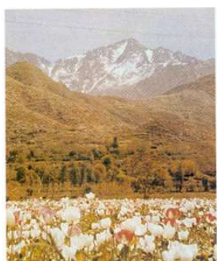
Objectives

- Highlight new drugs on our streets
- Highlight how drug use has evolved



2

Heroin



Over 60 percent of the heroin that is sold in the United States originates in the poppy fields of Southeast Asia.



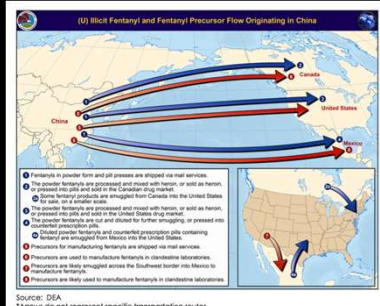
Opium poppies in Colombia.

3

The New Normal!

Synthesize novel drugs overseas

Ship anywhere in the world!



4

New Psychoactive Substances (NPS)

- UN tracking NPS
 - Estimates hundreds NPS over last few years
 - Extremely hard to track
 - Extremely hard to detect
 - Nearly impossible to police



5

Opioid Concealment



Heroin concealed and extracted from a fire extinguisher



Fentanyl-laced pills concealed in luggage

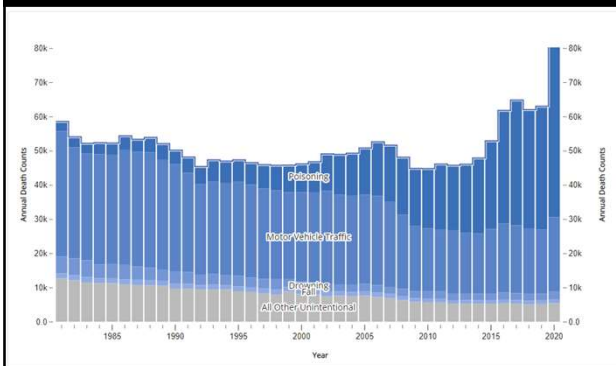


Heroin concealed in vehicle bumper

Source: DEA

6

Unintentional Injury Deaths 1981-2020



7

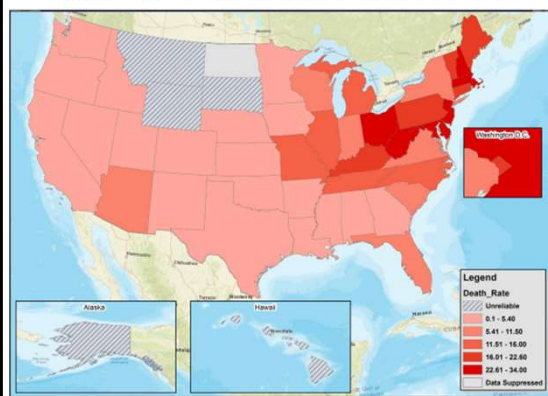
"Not as Sold"



Illicit Fentanyl vs Prescription Oxycodone

8

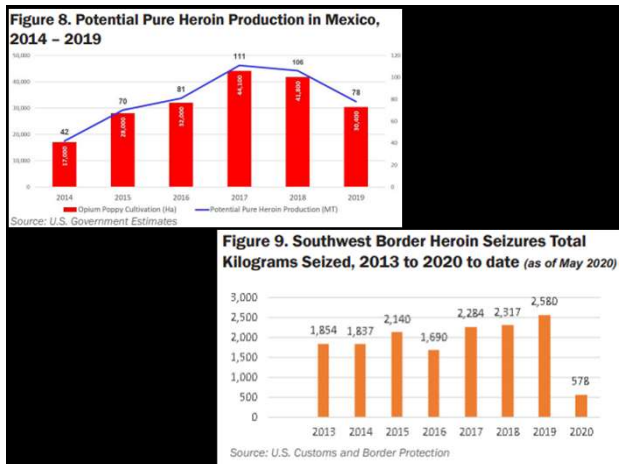
Figure 7. Age Adjusted Rates of Overdose Deaths Involving Synthetic Opioids Other Than Methadone by State, 2018¹



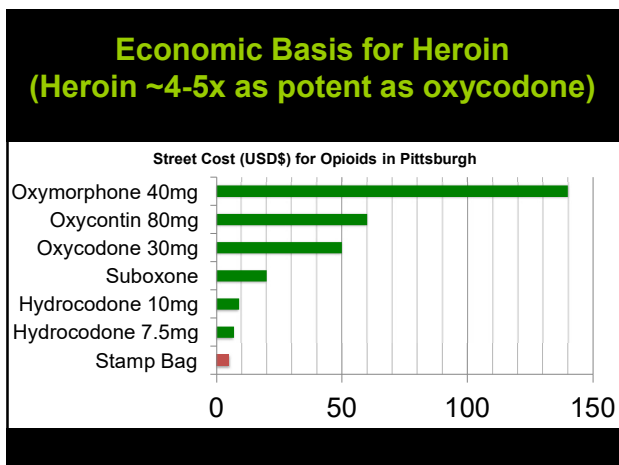
9



10



11



12

Fentanyl-mixed Heroin in Pittsburgh

- 1988: “China White”
- 2006: “Get High or Die Trying”
- 2014: “Theraflu” and “Bud Ice”
- 2014: “Predator” and “Chocolate”
- 2015: “Hit and Run”

13

Today's 'Heroin'

Acetyl fentanyl
Butyryl fentanyl
Fentanyl = Acryl fentanyl
Methyl fentanyl
Carfentanil

Potency



14



15

Opioids

- Testing
 - Routine urine drug tests detect morphine and heroin
 - Cannot detect many synthetics (i.e. tramadol, methadone, fentanyl)



16

Marijuana



17

Marijuana Cons

“There are over 10,000 documented studies available that confirm the harmful physical and psychological effects of. . .marijuana”

-California Narcotic Officers' Assoc.

18

Marijuana Pros

“Marijuana . . .[has] therapeutic benefits and could ease the suffering of millions of persons with various illnesses such as AIDS, cancer, glaucoma, multiple sclerosis . . .”

-Cannabis in Medical Practice.

19

FDA

“The FDA has not approved marijuana as a safe and effective drug for any indication.”

<https://www.fda.gov/newsevents/publichealthfocus/ucm421163.htm>



20

FDA

Marijuana is Schedule 1

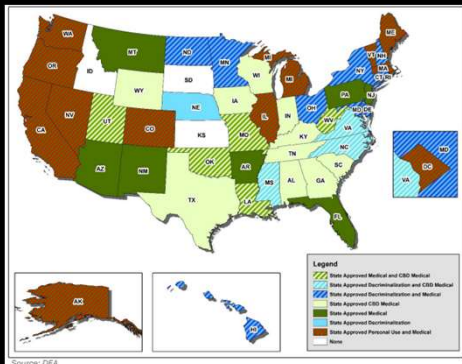
“The drug or substance has a high potential for abuse and has no currently accepted medical use.”

<https://www.fda.gov/newsevents/publichealthfocus/ucm421163.htm>



21

State Marijuana Status – July 2020



22

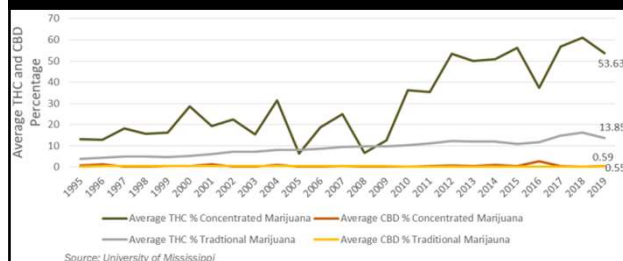
3 Marijuana U.S. Markets

1. Illicit
2. State-approved recreational use
3. State-approved medicinal use

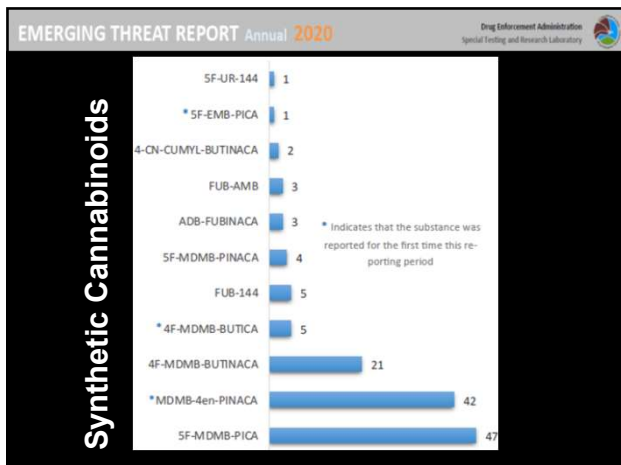
Makes policing marijuana very difficult

23

Not like the good ol' days



24



25

Synthetic Cannabinoids

- Sold under many names (usually as an incense or potpourri):
 - Spice
 - K2
 - Red X Dawn
 - Blase
 - Sense
 - Zohai

26

Synthetic Cannabinoids

- Pharmacology
 - Not much is known
 - However. . .

Potency =
THC << CHMINACA << HU-210

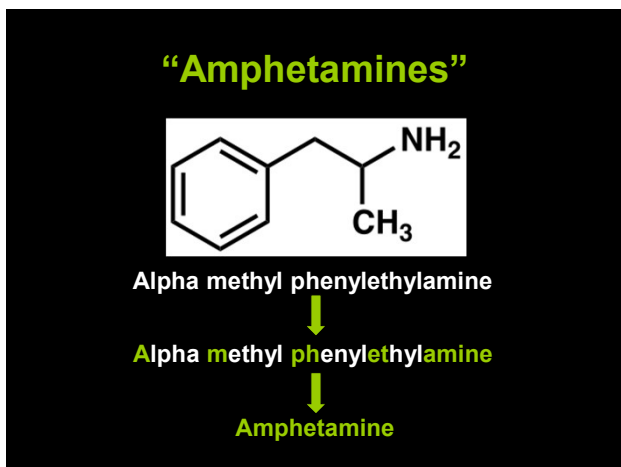
27



28



29



30

Bath Salts

- Sold under many names (usually as a bath salt):

- Red Dove
- Blue Silk
- Zoom
- Bloom
- Cloud Nine
- Ivory Wave
- Vanilla Sky

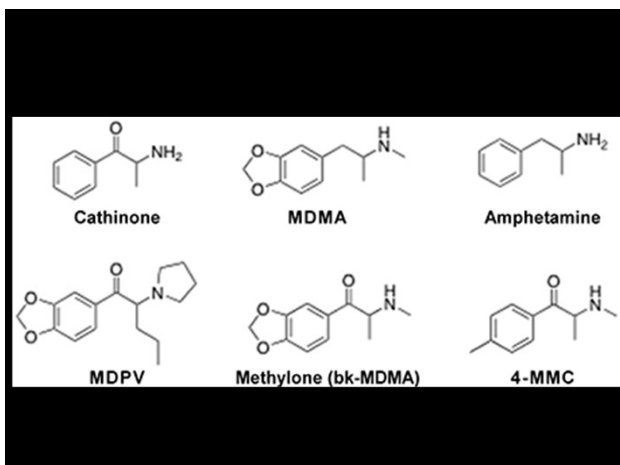


31

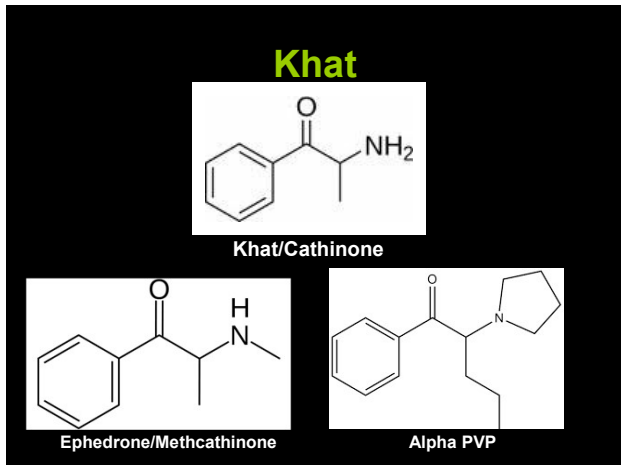
Khat (*Catha edulis*)



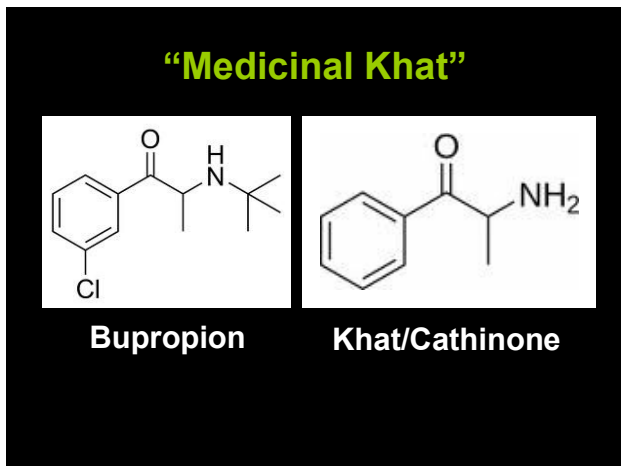
32



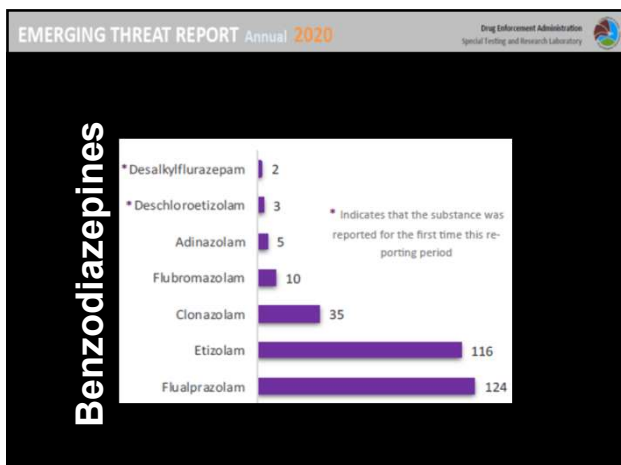
33



34



35



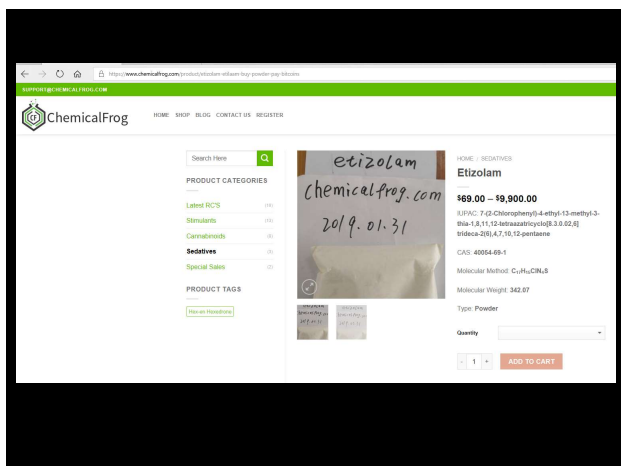
36

“Not as Sold”



Illicit Flualprazolam

37



38

A Few Additional ‘Interesting’ Drugs



39



- Developed in 1970's as aid to psych therapy
- Marketed in the 1980s as a legal alternative to MDMA (Ecstasy)
- Commonly street names:
 - "ACID"
 - "B-25"
 - "Bromo Dragon Fly"

Synthesize novel drugs overseas
Ship anywhere in the world!



Questions?

Call Toxicology Anytime:

Page us!!

Pager #TOXIC (86942)



43
