

2024 Pennsylvania Emerging Drug Trends Symposium



Don Dissinger MSN, FNP-C, PMHNP-BC, CARN-AP

Bhavna Bali, MD, FASAM, FACP

Taffy Anderson, MD, FACOG

Penn State College of Medicine and Penn State Health

November 19th, 2024



PennState Health



PennState
College of Medicine

Disclosures

- Don Dissinger, CRNP
 - No disclosures
- Bhavna Bali, MD
 - No disclosures
- Taffy Anderson, MD
 - No Disclosures

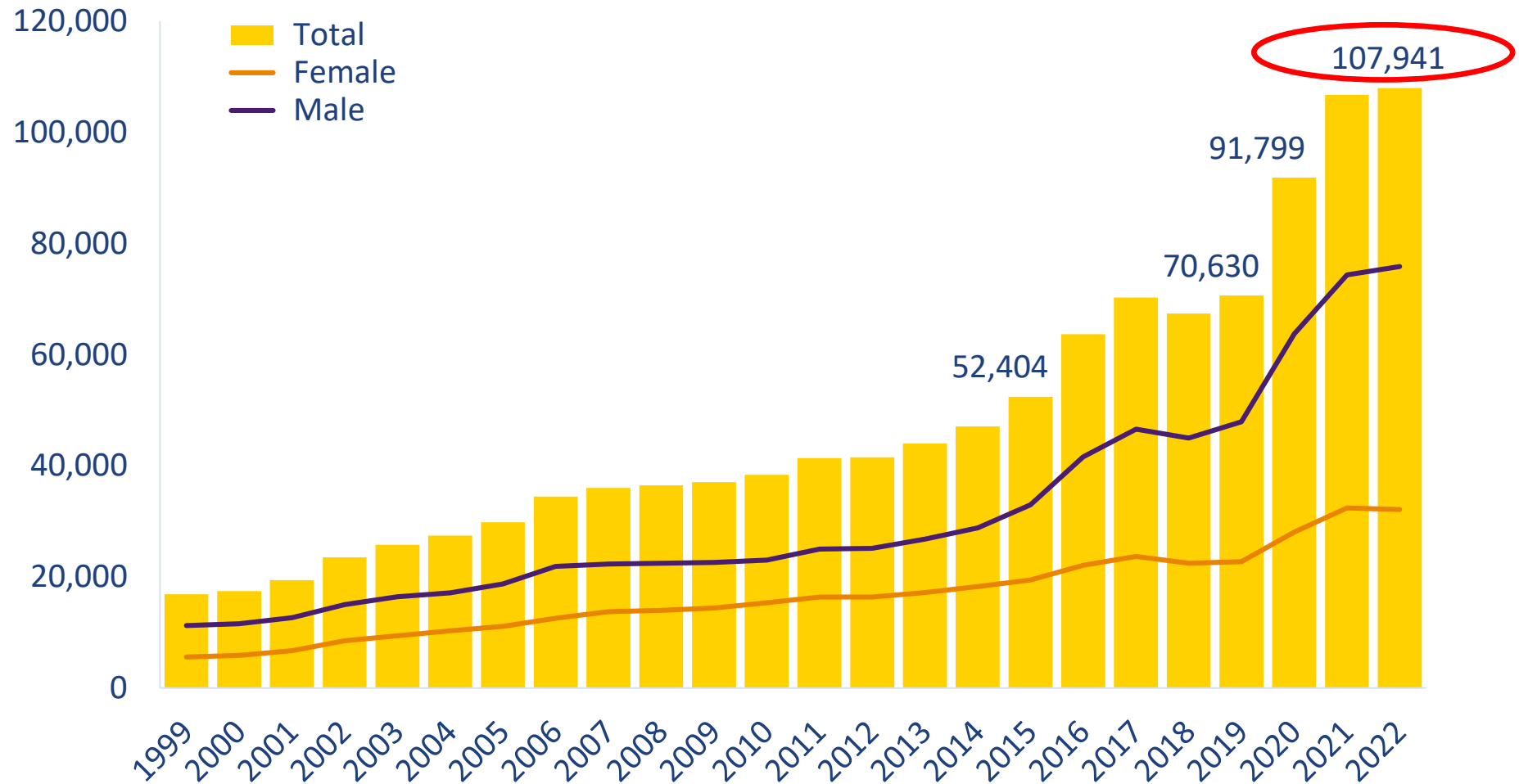


Objectives

1. Discuss the current drug trends and addiction treatment at Hershey Medical Center's Inpatient Addiction Medicine Consult Service.
2. Review current drug trends at Penn State Health's Adult outpatient Addiction Services
3. Discuss Penn State Health's new Maternal Substance Use Disorder Program and review current drug trends in pregnant persons.



U.S. Overdose Deaths 1999-2022



*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2022 on CDC WONDER Online Database, released 4/2024.

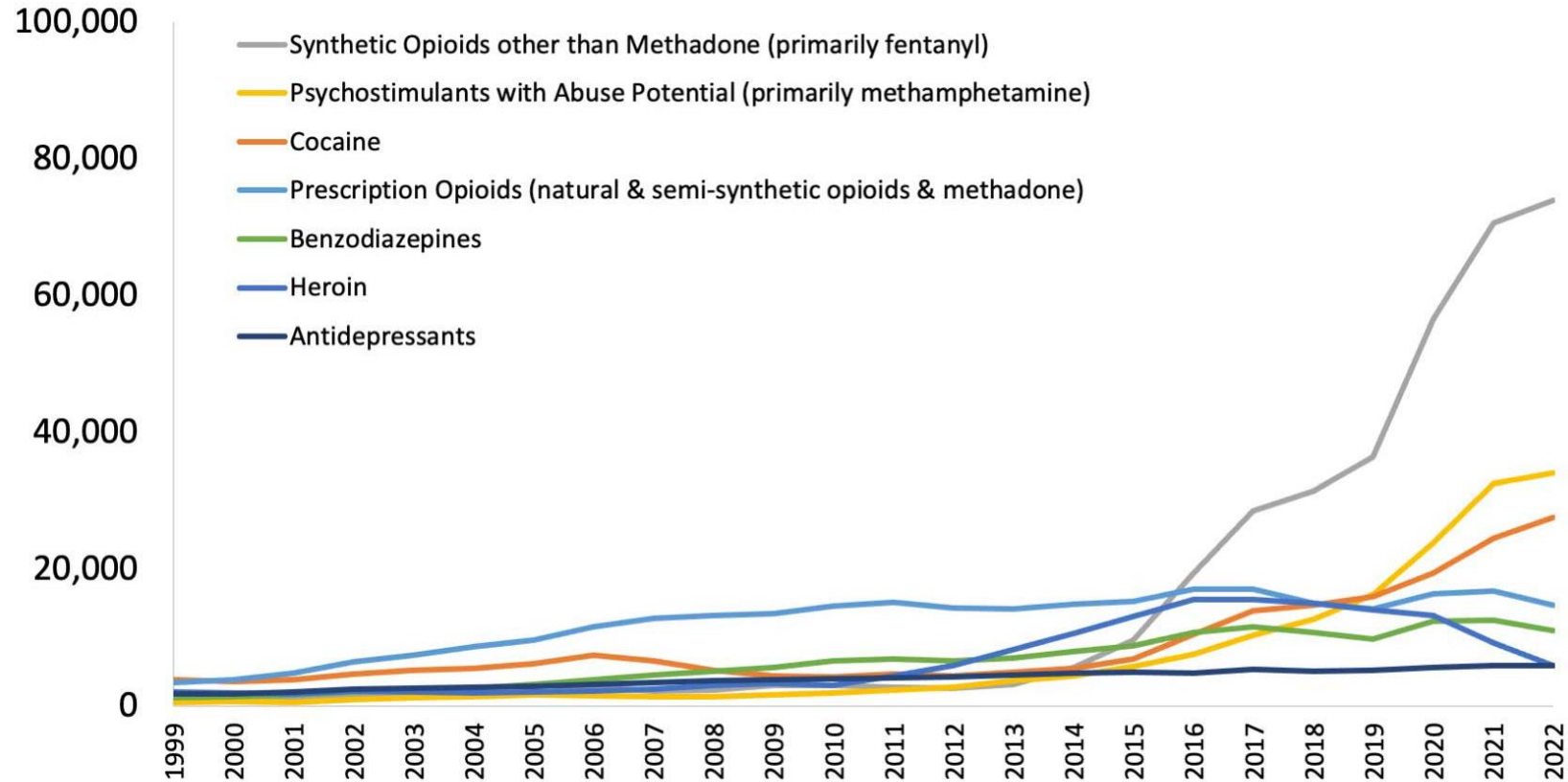


PennState Health



PennState
College of Medicine

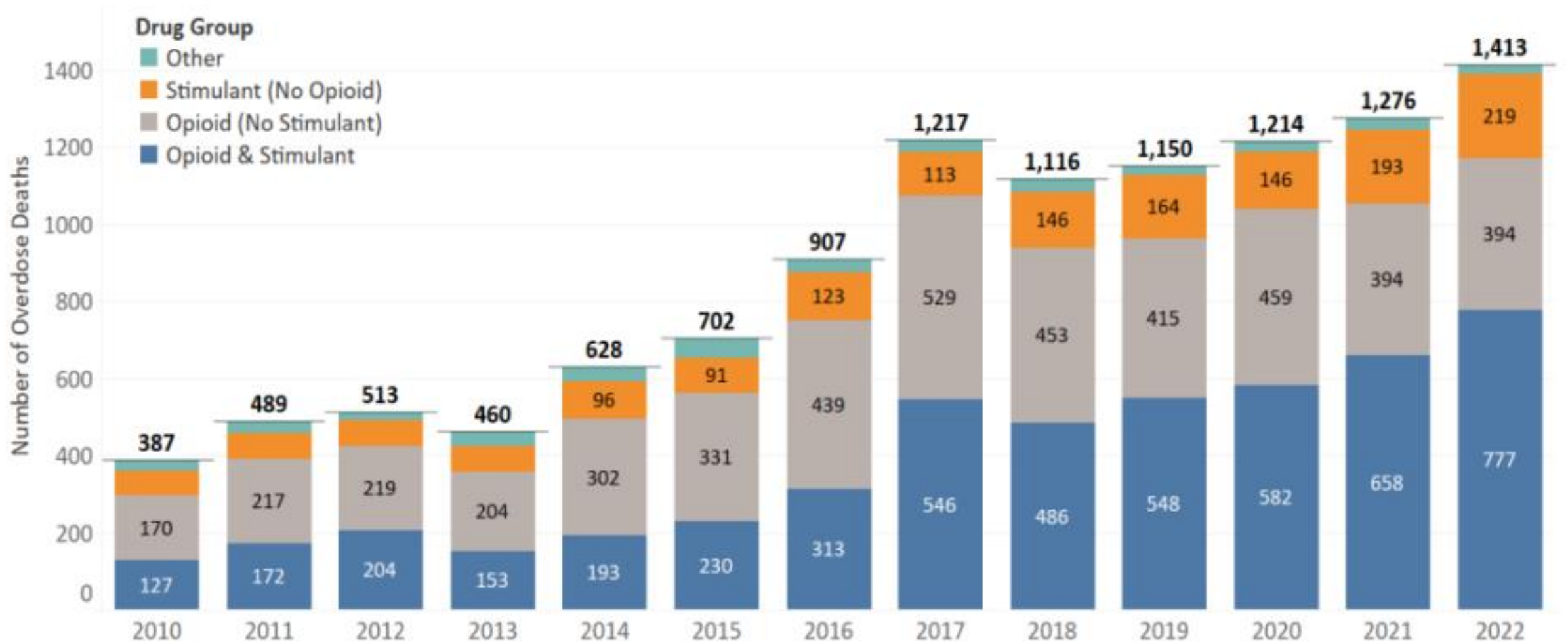
U.S. Overdose Deaths Drug Categories 1999-2022



*Includes deaths with underlying causes of unintentional drug poisoning (X40–X44), suicide drug poisoning (X60–X64), homicide drug poisoning (X85), or drug poisoning of undetermined intent (Y10–Y14), as coded in the International Classification of Diseases, 10th Revision. Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2022 on CDC WONDER Online Database, released 4/2024.



Number Of Overdose Death Trends In Philadelphia 2010-2022



Hershey Medical Center: Inpatient Addiction Consult Services

- Nurse Practitioner, Peer Recovery Specialist, Physicians
- Dauphin County Drug and Alcohol/ Just For Today
- HMC Emergency Room Direct to detox
- Inpatient Trends

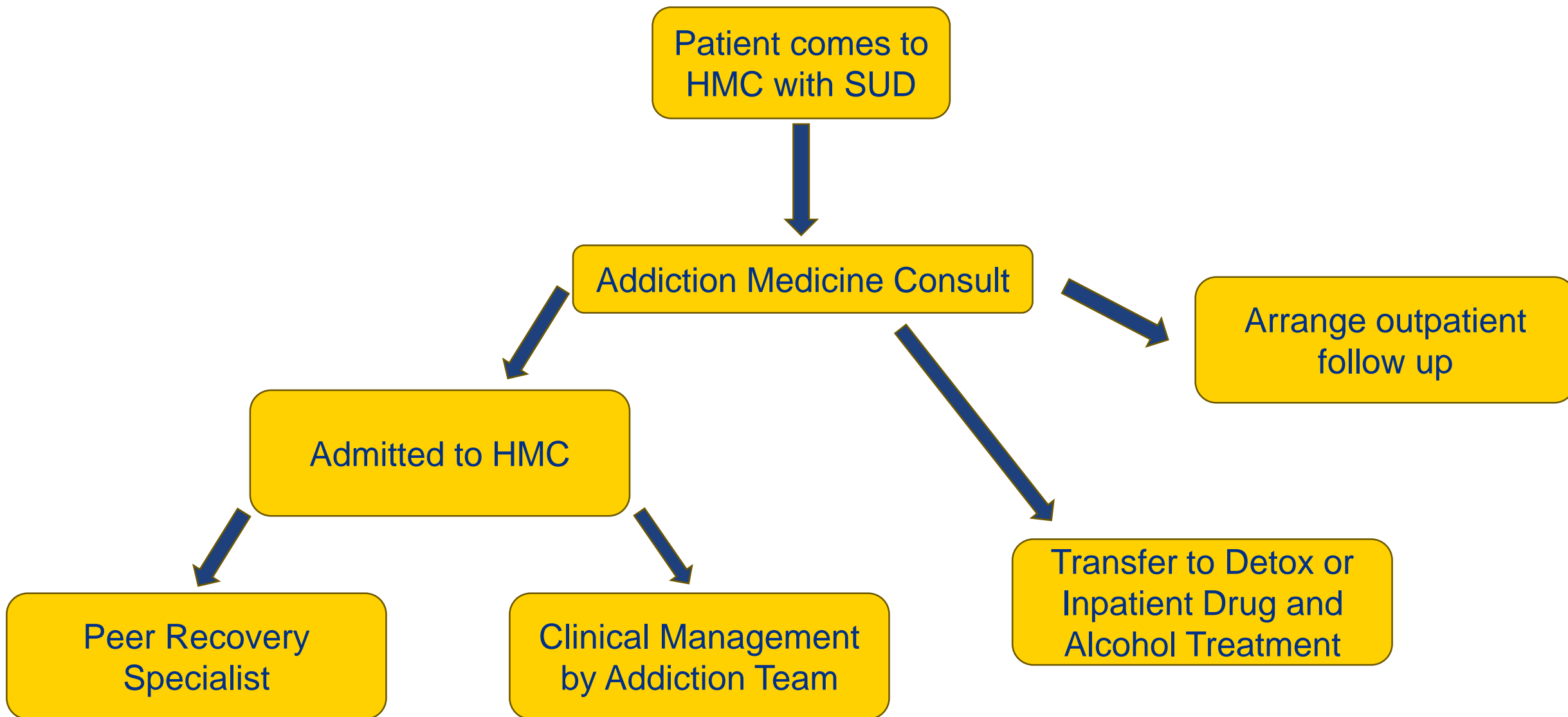


PennState Health

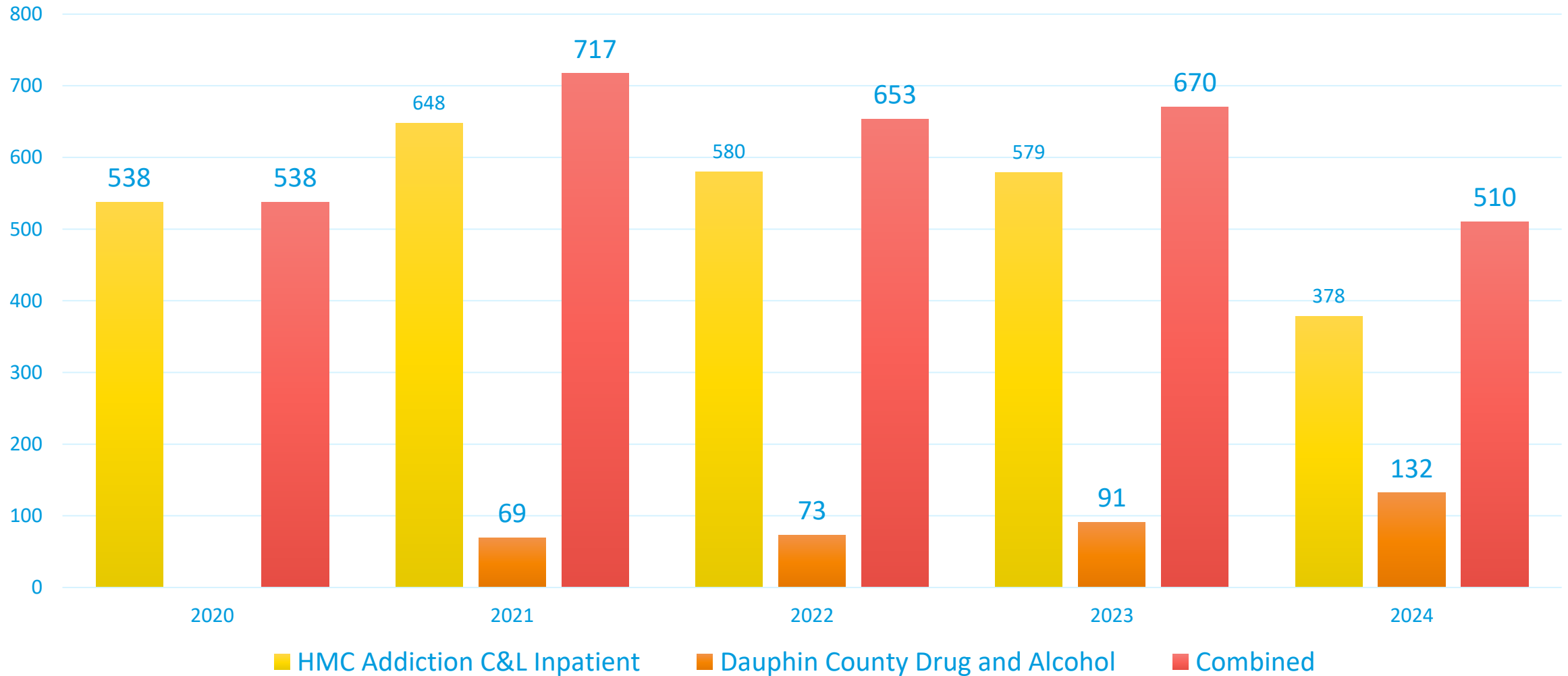


PennState
College of Medicine

Hershey Medical Center: Direct To Detox



Hershey Medical Center Inpatient Consult Trends



What Is Fentanyl?

Fentanyl

- Synthetic opioid developed in 1959
- Approved in 1972 for analgesia/anesthetic
- 1994: FDA warning about fentanyl patch misuse
- 100x more potent than morphine, 50X more potent than heroin

Pharmaceutical Fentanyl Products

- Actiq lozenge (lollipop)
- Abstral S/L tablet
- Fentora bucal tablet
- Onsolis film
- Subsys S/L spray
- Lazanda nasal spray
- Duragesic transdermal patch
- IV Fentanyl



Illicit Fentanyl

Illicit Fentanyl

- Manufactured in foreign clandestine labs (Mexico, India, China) and smuggled into the US
- 2006: Fentanyl outbreak in Mexico 2013: Fentanyl epidemic began 2014: Counterfeit pills enter the market
- 2015: 19 new fentanyl analogues scheduled by China (Sufentanil, Alfentanil, thiofentanil ect.)
- 2016: Other synthetic opioids identified (U-47700, MT-45, AH-7921)



M30 tablets (oxycodone)



Authentic Adderall



Authentic Xanax



Counterfeit

Lethal Dose



Fatal dose of fentanyl (2 mg or 2000 mcg)



Fatal dose of carfentanil (0.02 mg or 20 mcg)

Fentanyl Capsules



Agent	Potency (vs morphine)
Tramadol	0.2
Morphine	1
Oxycodone	1.3
Methadone	4
Heroin	4
Buprenorphine	30
Fentanyl	100
Carfentanil	10,000



Xylazine: Fetty Tranq, Philly Dope, Sleep Cut, Zombie Drug

What is it?

- Non-opioid veterinary tranquilizer not approved for human use
- Added to illicit substances (MC fentanyl)

-People may or may not be aware

Routes of ingestion:

IV, intranasal, smoking, orally, IM, SC

MOA:

- α_2 -agonist (same drug class as clonidine, lofexidine, and dexmedetomidine)
- Activates presynaptic α -2a and α -2c subtypes: sympatholytic effects of sedation
- Activates α -2b subtype in vascular smooth muscles: vasoconstriction and hypertension

Why add it?

- Lengthens euphoric effects
- Cheap and easily available
- Addictive



Estimated OD Deaths involving Xylazine 2015-2021:

- Increased from 2% to 26% in Philadelphia
- 19% of OD deaths in Maryland
- 10% OD deaths in Connecticut

How to treat Xylazine OD:

- Narcan dose not reverse xylazine effects, but is recommended to be given in ALL overdoses since it is commonly mixed with opioids

How to treat Xylazine withdrawals:

- Cocktail of medications have been helpful: α_2 -agonist, benzodiazepines, precedex, ketamine, opioid w/d comfort meds, NSAIDS, gabapentin

Xylazine use symptoms:

Sedation, difficulty breathing, hypotension, bradycardia, injection site wounds, CNS depressant, death

Xylazine Withdrawal symptoms:

Irritability, anxiety, restlessness, and dysphoria



WARNING:

**Some Images
May Be Graphic**



PennState Health



PennState
College of Medicine



27 Female
Neck



Ankle



34 Female

LLE 11/23/22



32 Female

LUE 1/23/24



29 Female

LUE 8/22/22



36 Male

RUE

Xylazine Wounds



RLE 4/6/23



36 Female

RLE 7/21/23



RLE 1/9/24



RLE 7/26/23



RLE 8/2/23



40 Female

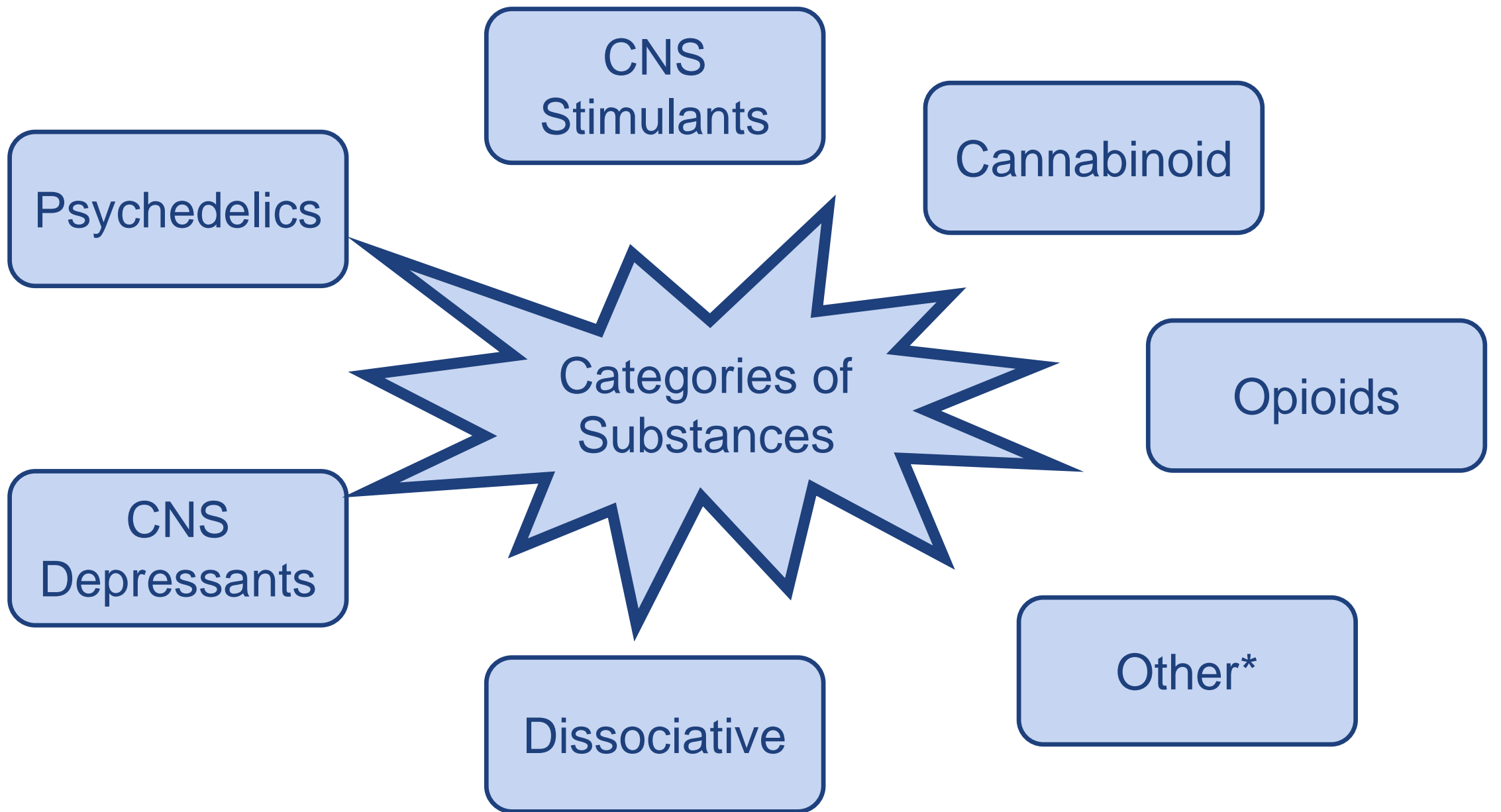
LLE 8/2/23



LLE 7/26/23



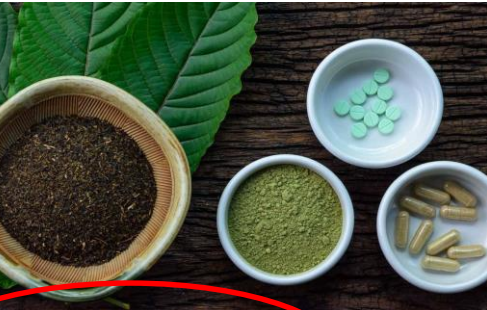
LLE 8/21/23



Opioids



Prescription Pain Medications



Kratom



Fentanyl

Heroin



Nootropic-Tianeptine

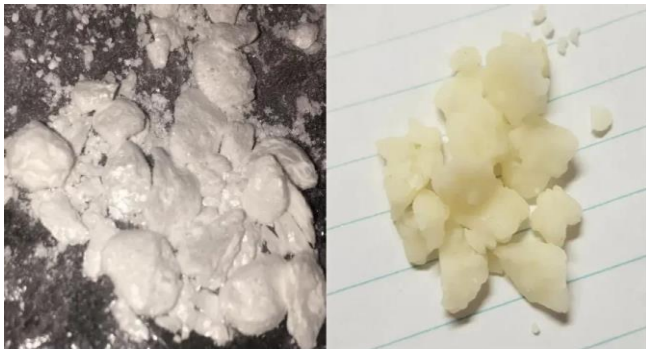


Desmorphine (Krokodil)

Methods of Use: Oral, Intravenous, Intranasal, Rectal plugging, Inhalation (smoking)

Central Nervous System Stimulants

Cocaine/Crack



Caffeine



Methamphetamine



POWDERED METH
Snorting, ingesting

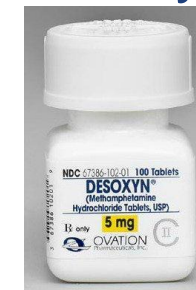


METH ICE
Mainly for smoking



METH CRYSTALS
Modified and injected

Desoxyn



Khat



Amphetamine

Methylphenidate

Bath Salts

(Synthetic Cathinone)

Nicotine



Adderall



Aptensio XR
Concerta
Metadate
Methylin
Focalin

QuilliChew ER
Quillivant XR
Ritalin
Metadate



Dextroamphetamine

Dexedrine
Dextrostat
Liquadd

ProCentra
Zenzedi
Vyvanse

Methods of Use: Oral, Intravenous, Intranasal, Smoking



PennState Health



PennState
College of Medicine

Psychedelics

Lysergic acid diethylamide-LSD (acid)



Mescaline (Peyote cactus)



Ayahuasca

Psilocybin (shrooms) (contains DMT-Dimethyltryptamine)



MDMA (Ecstasy, Molly)



Methods of Use: Oral, Brewed/Soaked



PennState Health



PennState
College of Medicine

Central Nervous System Depressants

Alcohol



Rx Benzodiazepine



Xylazine



GHB-Gamma hydroxybutyrate



Barbiturates



Phenibut



Methods of Use: Oral, Intravenous, Intranasal



PennState Health



PennState
College of Medicine

Ketamine (anesthetic)



Dissociative

PCP-Phencyclidine (anesthetic)



Nitrous Oxide



Methods of Use: Oral, Intravenous, Smoked



PennState Health



PennState
College of Medicine

Cannabinoids

Cannabis



K2/Spice (synthetic THC)



Hashish



Methods of Use:
Oral, Smoking

Other

Growth Hormone



Modafinil



Steroids



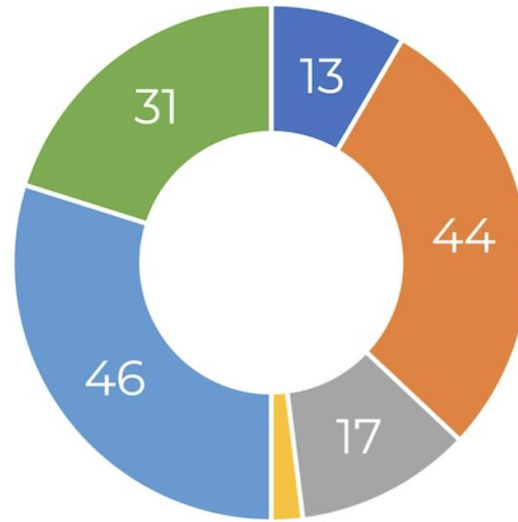
- Anadrol (oxymetholone)
- Oxandrin (oxandrolone)
- Dianabol (methandrostenolone)
- Winstrol (stanozolol)
- Deca-Durabolin (nandrolone Decanoate)
- Durabolin (nandrolone phenpropionate)
- Depo-testosterone (testosterone cypionate)
- Equipoise (boldenone undecylenate)
- Tetrahydrogestrinone (THG)



Novel Psychoactive Substances-NPS

NPS OPIOIDS

N-Pyrrolidino Protonitazene
 N-Propionitrile Chlorphine
 N-Desethyl Protonitazene
 N-Pyrrolidino Metonitazene
 N-Desethyl Metonitazene
 N-Pyrrolidino Etonitazene
 N-Desethyl Isotonitazene
 5-Methyl Etodesnitazene
 Etodesnitazene
 Metodesnitazene
 Bromofentanyl
 Ortho-Methylfentanyl
 Methyltetrahydrofurfanylfentanyl
 Isotonitazene
 Brorphine
 Chlorphine
 Metonitazene
 Protonitazene
 Carfentanil



- Benzodiazepines
- Cannabinoids
- Hallucinogens
- Miscellaneous
- Opioids
- Stimulants

Breakdown by subclass of newly discovered NPS, 2018-2023

NPS STIMULANTS AND HALLUCINOGENS

Methylone
 MeO-PCP
 Deschloroketamine
 N-Isopropyl Butylone
 N-ethyl pentylone
 N-cyclohexyl methylone
 Chloromethcathinone
 2C-C
 2C-B
 Alpha-PHP-Alpha-PiHP
 Methylmethcathinone
 N,N-Dimethylpentylone
 2F-2-oxo PCE /Fluorexetamine

SYNTHETIC CANNABINOIDS

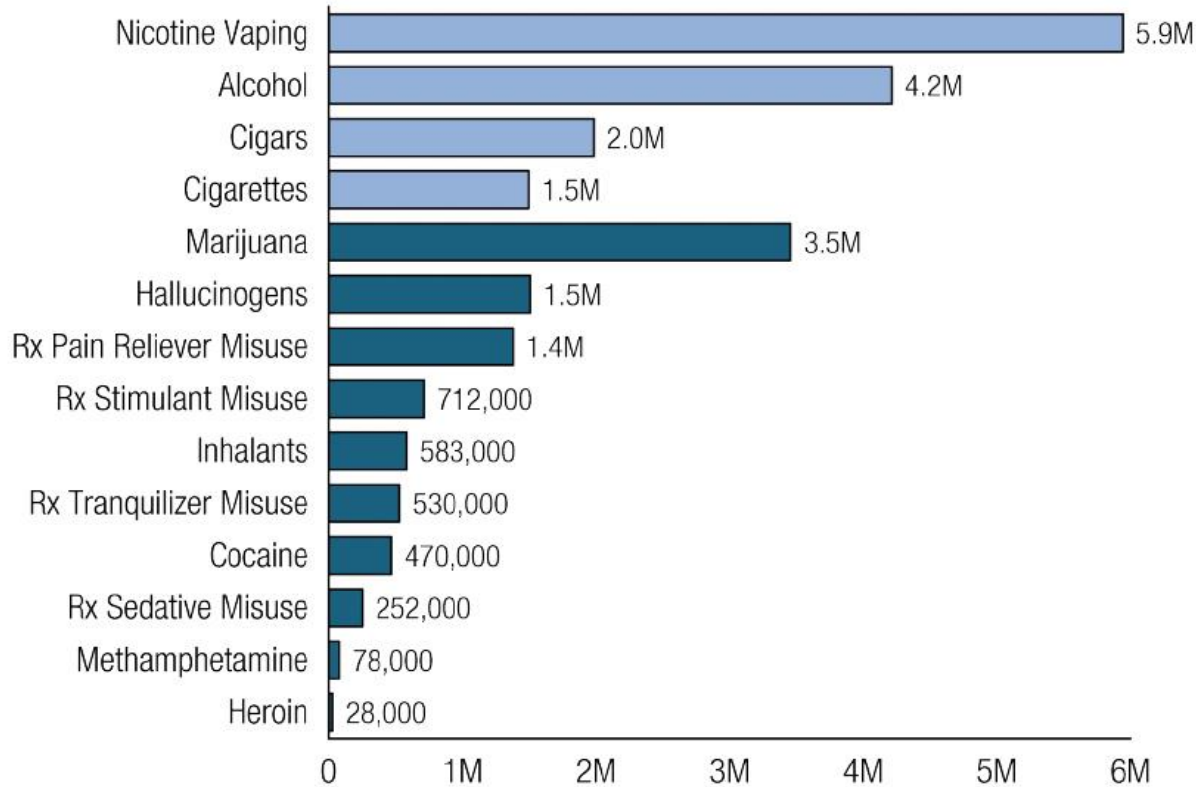
CHO-4Me-5Br-FUBOXPYRA
 ADB-BINACA
 ADB-INACA
 MDMB-4en-PINACA
 MDMB-BINACA
 MDMB-INACA
 5F-MDMB-PINACA
 MDMB-4en-PINACA

NPS BENZODIAZEPINE

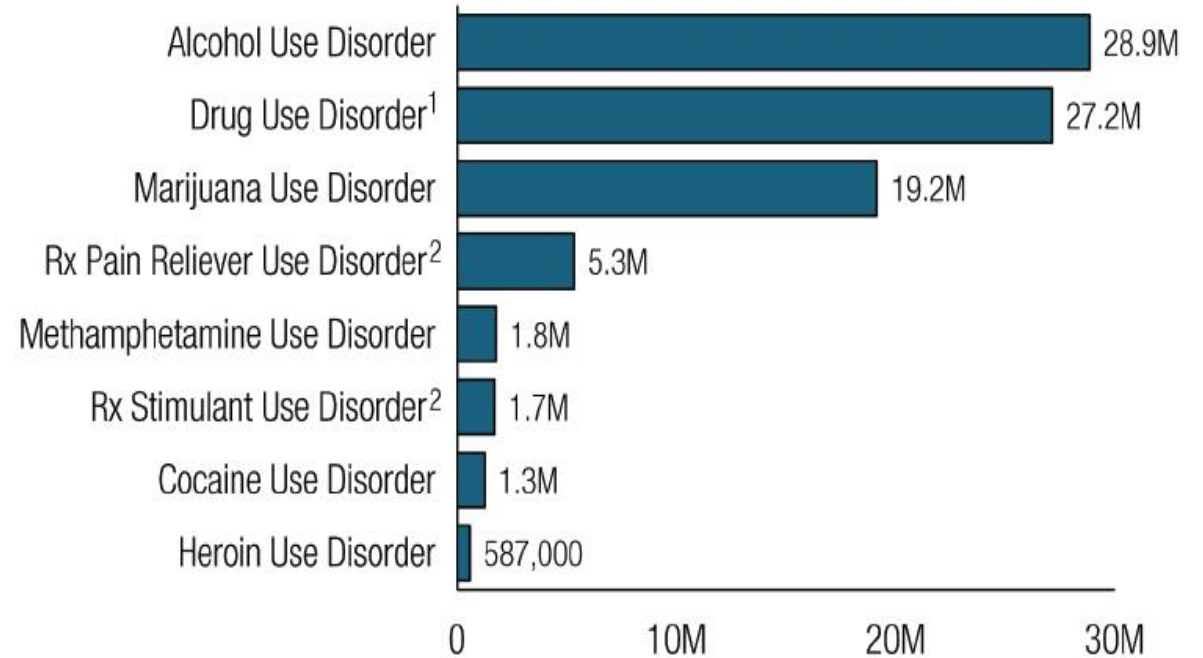
Etizolam
 Desalkylflurazepam
 Flualprazolam
 Flubromazepam
 Phenazolam
 Desalkylgidazepam
 Bromazolam
 Clonazolam
 Diclazepam

National Drug Overdose Trends 2023

Past Year Initiates of Substances: Aged 12 or older



Past Year Substance Use Disorder (SUD): Aged 12 or older



Rx = prescription.

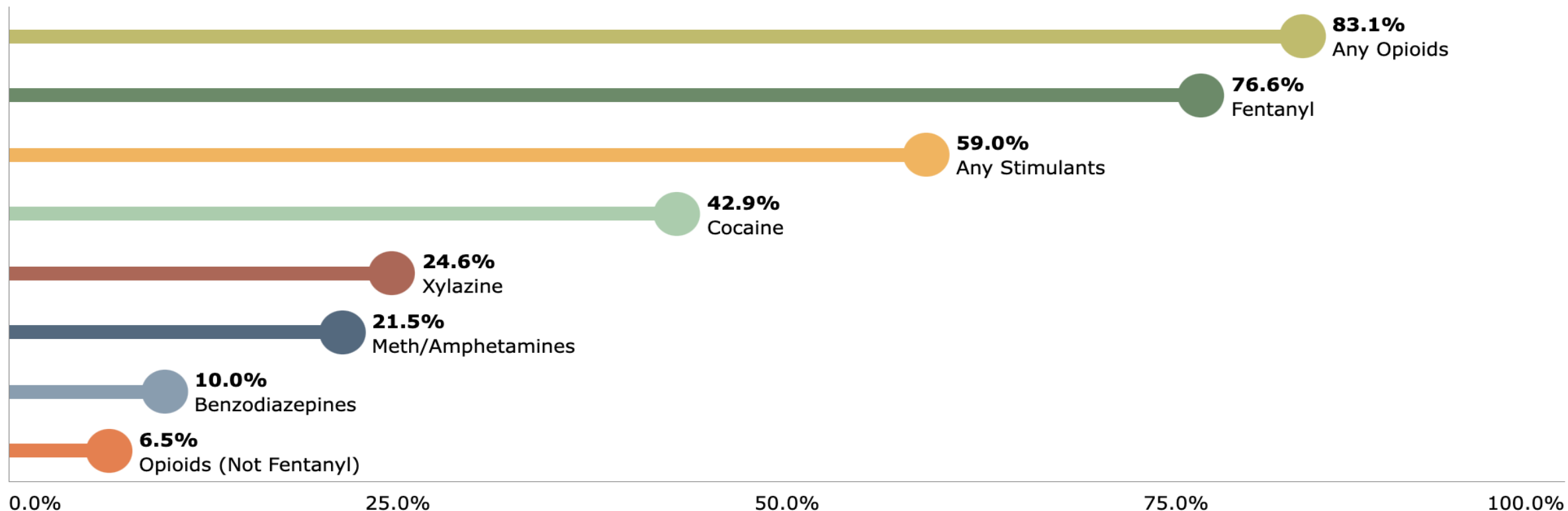
Note: The estimated numbers of people with SUDs are not mutually exclusive because people could have use disorders for more than one substance.¹ Includes data from all past year users of marijuana, cocaine, heroin, hallucinogens, inhalants, methamphetamine, and prescription psychotherapeutic drugs (i.e., pain relievers, tranquilizers, stimulants, or sedatives).² Includes data from all past year users of the specific prescription drug.

Drug Overdose Surveillance In Pennsylvania

2023 | Trends in drug(s) contributing to cause of death for the 4,722 overdose deaths in Pennsylvania

Most common drug classes contributing to cause of death, 2023

(Overdose deaths can involve more than one substance)



Pennsylvania ODSMP – Drug Overdose Surveillance Interactive Data Report
Updated October 22, 2025



PennState Health



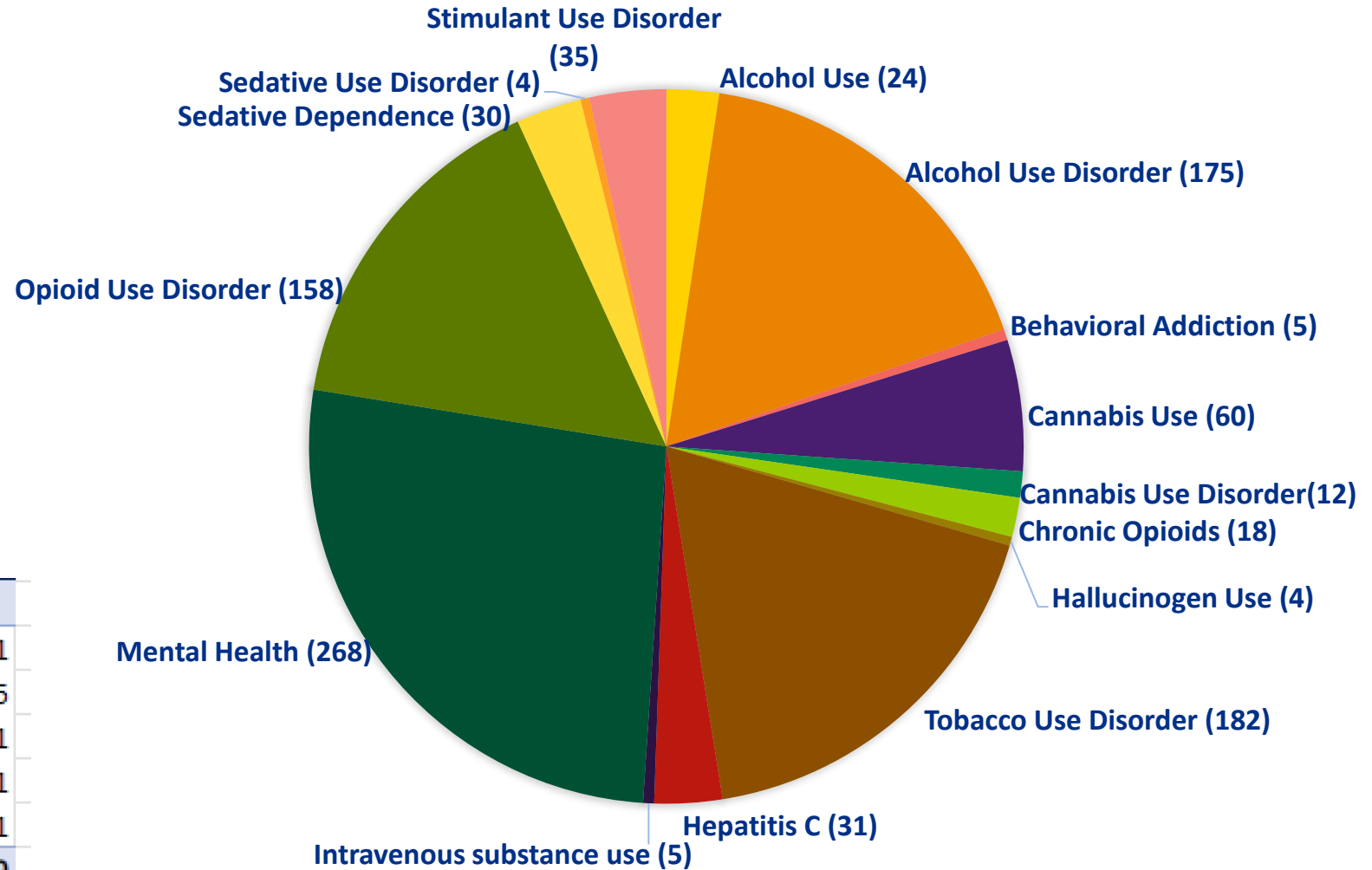
PennState
College of Medicine

Penn State Health OBAT (Office Based Addiction Treatment) Clinic

Gender	Count of MRN
Female	89
Male	120
Grand Total	209

Age Group	Count of MRN
20-29	14
30-39	47
40-49	54
50-59	37
60+	57
Grand Total	209

Ethnicity	Count of MRN
Not Hispanic, Latino, or Spanish Origin	191
Hispanic, Latino, or Spanish Origin	15
Multiple	1
Unavailable	1
Patient Declined	1
Grand Total	209



Kratom: *Ketum, biak-biak, ithan, thom, kakuam*



- Made from (*Mitragyna speciosa* Korth., Rubiaceae) a tropical coffee tree indigenous to SE Asia.
- Used for centuries in Europe and North America for its diverse effects as an energy booster, increasing focus and alertness, and mood enhancing.
- **Currently, kratom and/or its metabolites have not been approved as safe and effective medicines for any therapeutic use**



Kratom: *Ketum, biak-biak, ithan, thom, kakuam*

Formulations:

- *Raw leaves*: Chewed, smoked, or boiled to make a tea (SE Asia)
- *Dried leaves*: Adulterated to make capsules, powder, and extracts/tinctures that can be smoked or vaporized, commonly found in smoke shops and gas stations (Western countries)

Low doses (< 5 g): Mild stimulant-like properties.

High doses (5-15 g): Anxiolytic effects, analgesic properties

Very high doses (>15 g): Sedating effects

Over 40 alkaloids identified

- MG is most prevalent (66%), 7HMG most active (2%)- pure kratom products
- 7-HMG is 46 x more potent than MG, 13 x more potent than morphine



Kratom: *Ketum, biak-biak, ithan, thom, kakuam*

Kratom Toxidrome

TABLE 1: Report of adverse/toxicological effects of kratom.

Short time use effects	Nausea, constipation, sleep problems, temporary erectile dysfunction, itching, or sweating
Long time use effects	Anorexia, dry mouth, problems in diuresis, darker skin, and hair loss
Infrequent effects	Seizures (individuals using high doses of kratom, either alone or combined with other drugs), intrahepatic cholestasis, psychotic symptoms, Adult Respiratory Distress Syndrome, and hypothyroidism
Fatalities	Kratom mixed with other substances: O-desmethyltramadol; propylhexedrine; over-the-counter cold medications and benzodiazepines; venlafaxine, diphenhydramine, and mirtazapine; zopiclone, citalopram, and lamotrigine

Kratom Withdrawals

- Similar to opioid withdrawals: diarrhea, anxiety, insomnia, restlessness, mood changes, muscle aches, anger, anorexia, weight loss
- Symptoms may last 3-10 days from last dose, but can be longer in chronic users
- Case reports of pregnant mothers who used kratom giving birth to neonates with signs of NOWS

Treatment Kratom Addiction

- Data largely from case reports: MOUD becoming common
- Reversal with naloxone? Case reports of response usually with polysubstance use, unclear if kratom alkaloids inhibited by naloxone in animal studies



Tianeptine: Zaza, Tianna Red, Gas station dope, TD red, Pegasus

- Atypical tricyclic antidepressant developed in the 1980s to treat MDD (Europe, Asia, Latin America)
- Sold as “cognitive enhancers”- nootropics, “dietary supplements” or to treat opioid withdrawals/anxiety
- Commonly sold online and retail locations (gas stations, smoke shops, bodegas)



Tianeptine: Zaza, Tianna Red, Gas station dope, TD red, Pegasus

- Formulations: salt, powder, or pill/capsule
- MDD dosing (25-50 mg), recreational use (> 1000 mg)
- Low doses weak pain relief (mu and delta), high doses increased risk opioid induce euphoria due to dopamine release
- Mixed data on stimulation of serotonin reuptake and action on serotonin receptors
- Stabilized glutamine release-antidepressant effects



Tianeptine: Zaza, Tianna Red, Gas station dope, TD red, Pegasus

Tianeptine Toxidrome

- Side effects: GI upset, headaches, dizziness, and changes in dreaming
- Increased doses: Drowsiness, confusion, difficulty breathing, irritable bowel syndrome, stomach aches

Tianeptine Withdrawals

- Like opioid withdrawals: Loss of appetite, anxiety, nausea, vomiting, fever, confusion, cramps, depression, dizziness, worsening depression, headaches, moodiness, insomnia, moodiness, suicidal ideation, tremors, diarrhea, yawning
- Case reports of NOWS has occurred with tianeptine dependence during pregnancy

Treatment Tianeptine Addiction

Data from case reports:

- Suboxone , Tianeptine overdoses successfully treated with Narcan (intranasal and infusion)

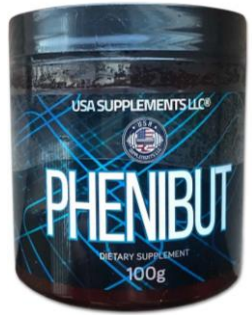


Phenibut: Citrocard, and Phenybut, Anvifen, Fenibut, Noofen

- Anxiolytic developed in Russia to treat anxiety, depression, PTSD, and insomnia.



- USA sold as nootropic supplement for depression and anxiety, banned sales as dietary ingredient.
- Not regulated in USA (Alabama schedule II drug). Legal to buy, sell, and use.
- Controlled substance in Australia, France, Hungary, Italy, Lithuania, and Germany



- Formulations: tablets, solution for infusion
- Doses typically between 500-1500 mg



Phenibut: Citrocard, and Phenybut, Anvifen, Fenibut, Noofen

- Targets GABA A and B (higher affinity) receptors → causing increased relaxation and sedation
- Case reports of tolerance developing within a week of use (increased risk of dependence)
- Pub med systematic review (January 2010-October 2023): 13 cases of reported phenibut withdrawals.
- Reason for use: Overcome substance misuse or to treat psychological conditions. Average ingestion amount 13.6 g daily for 8.2 months



Phenibut: Citrocard, and Phenybut, Anvifen, Fenibut, Noofen

Phenibut Toxidrome

- Side effects: relaxation, sedation, somnolence, confusion, nausea, irritability, agitation, anxiety, dizziness, euphoria, headache
- Higher doses: loss motor coordination, loss of balance, delirium, seizure, unconsciousness
- Overdose (>7 g): nausea, vomiting, hypotension, renal and liver impairment, unconsciousness

Phenibut Withdrawals

- Similar to alcohol withdrawals
- Severe rebound anxiety, anger, insomnia, irritability, agitation, visual and auditory hallucinations,
- Case reports of withdrawal symptoms of self harm, psychomotor agitation, and acute psychosis

Treatment Phenibut Addiction

- Case reports baclofen and benzodiazepine taper



US Trends in Drug Overdose Mortality Among Pregnant and Postpartum Persons, 2017-2020

- Drug overdose deaths increased approximately **81%** from 2017 to 2020.
- Increases in drug overdose deaths were more pronounced in 2020, consistent with the onset of the COVID-19 pandemic.
- Pregnancy-associated overdose deaths were characterized by synthetic opioid and psychostimulant involvement.
- Although steady increases in pregnancy-associated overdose deaths were observed from 2007 to 2019, the increase observed in 2020 was more pronounced than in previous years.
- During the pandemic were there barriers to accessing drug treatment, due to health care shutdowns, stress due to mental health, financial and domestic concerns?

Bruzelius E, Martins SS. US Trends in Drug Overdose Mortality Among Pregnant and Postpartum Persons, 2017-2020. *JAMA*. 2022;328(21):2159–2161.

doi:10.1001/jama.2022.17045



PennState Health



PennState
College of Medicine

HMC Maternal Substance Use Disorder Program



Dr. John Dougherty
Medical Director Maternal Substance Use Disorder Program
Penn State Health, Milton S. Hershey Medical Center



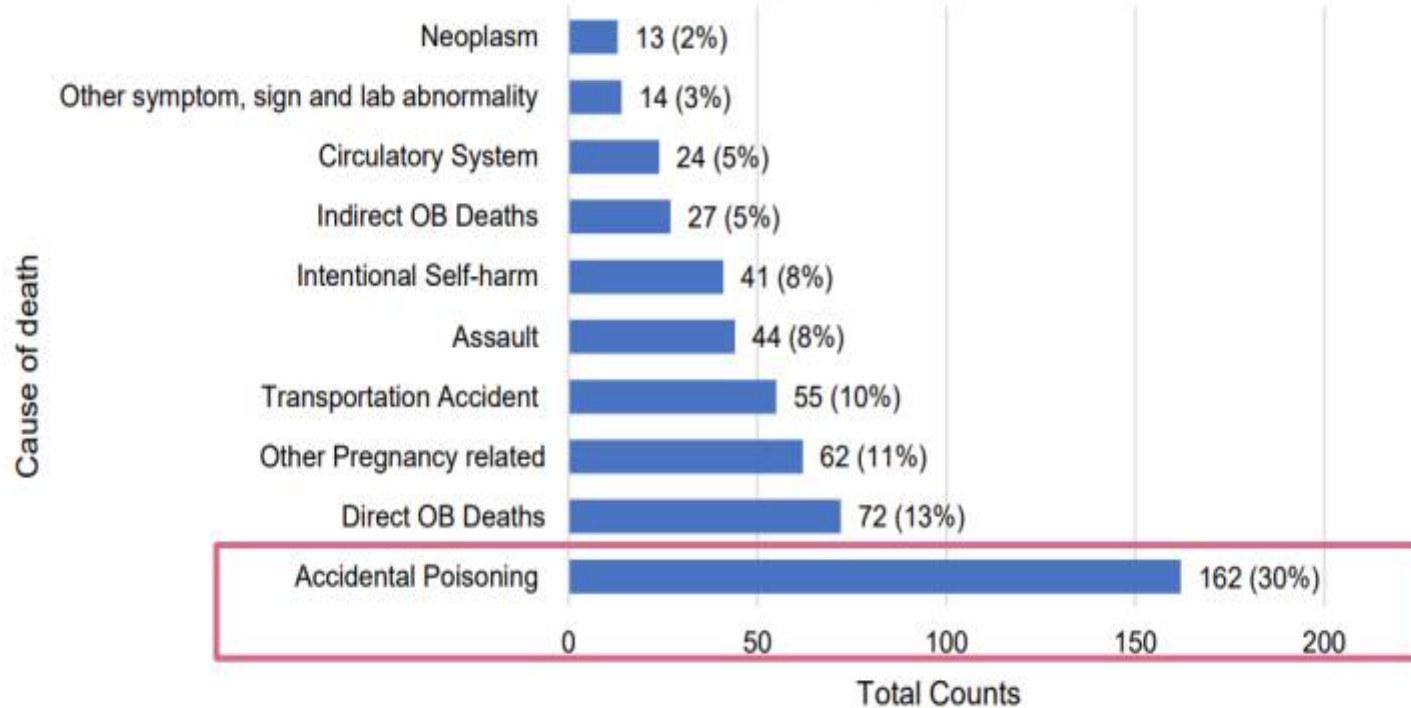
PennState Health



PennState
College of Medicine

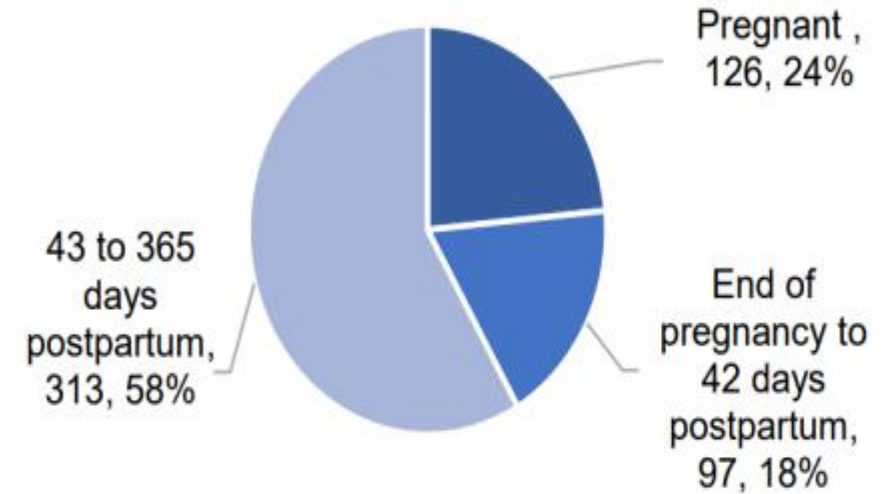
Pregnancy Associated Deaths In Pennsylvania

Figure 11. Leading Causes of Pregnancy-Associated Deaths in Pennsylvania, 2013 – 2018 (N=547)



Note: Numbers rounded to the nearest whole.
Data Source: DOH Bureau of Health Statistics & Registries

Figure 9. Distribution of Pregnancy-Associated Deaths by Time Between Pregnancy and Death in Pennsylvania, 2013 – 2018 (N=536)



Data source: DOH Bureau of Health Statistics & Registries

<https://www.health.pa.gov/topics/Documents/Diseases%20and%20Conditions/Pregnancy%20Associated%20Deaths%202013-2018%20FINAL.pdf>



PennState Health



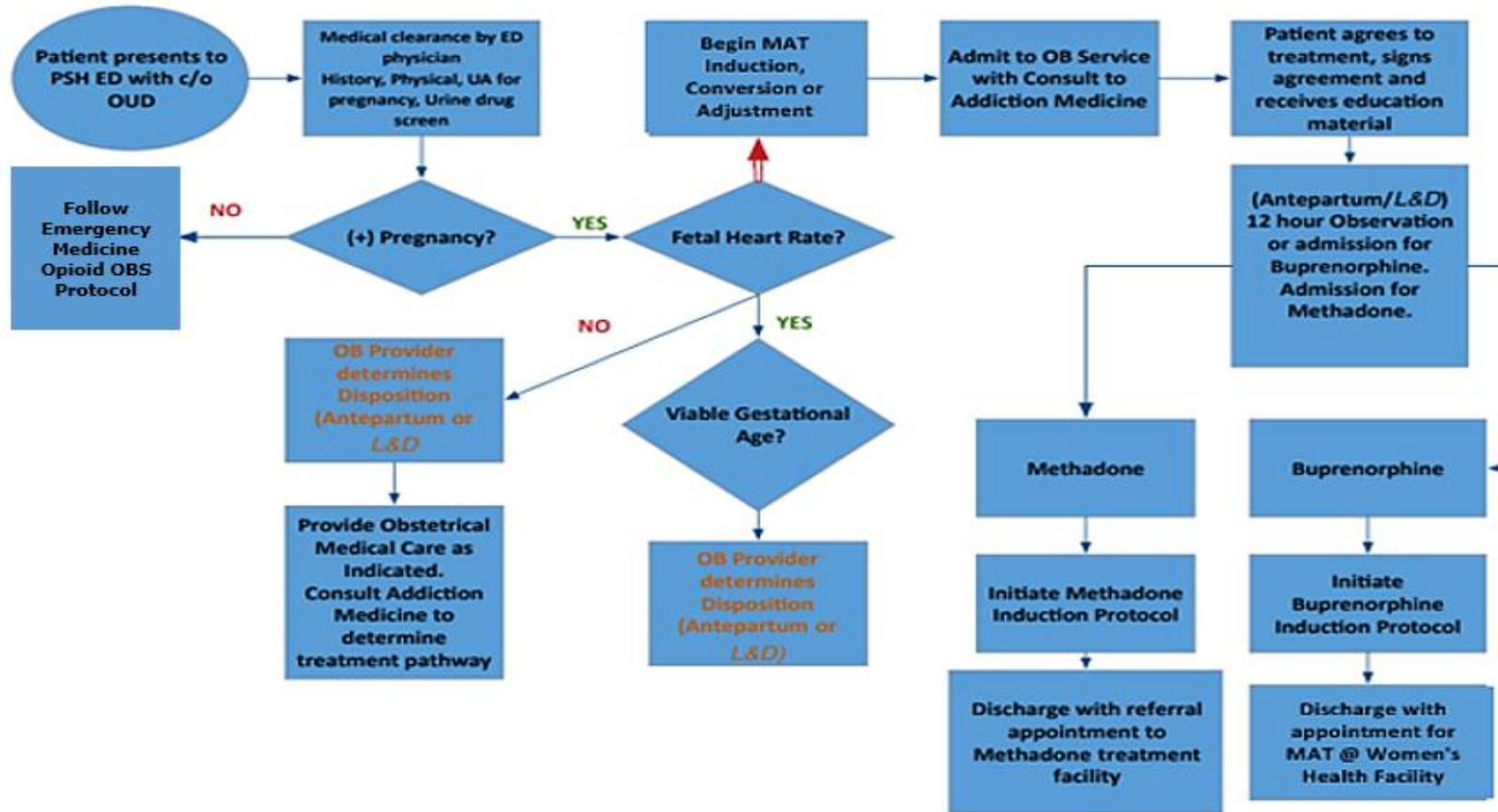
PennState
College of Medicine

© 2022 JHF, PRHI & WHAMglobal



Phase 1: Inpatient Program With A Multidisciplinary Team Approach To Treat Women With OUD At HMC

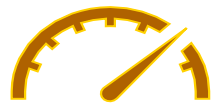
Clinical Pathway: Treating OUD in Pregnancy And Observation/Admission For Induction



Multidisciplinary Team:

- Obstetrics/Gynecology
- Addiction Medicine
- Neonatal Care (NICU)
- Psychiatry/Behavioral Health
- Pain Management
- Certified Recovery Specialist
- Social Services/Case Management

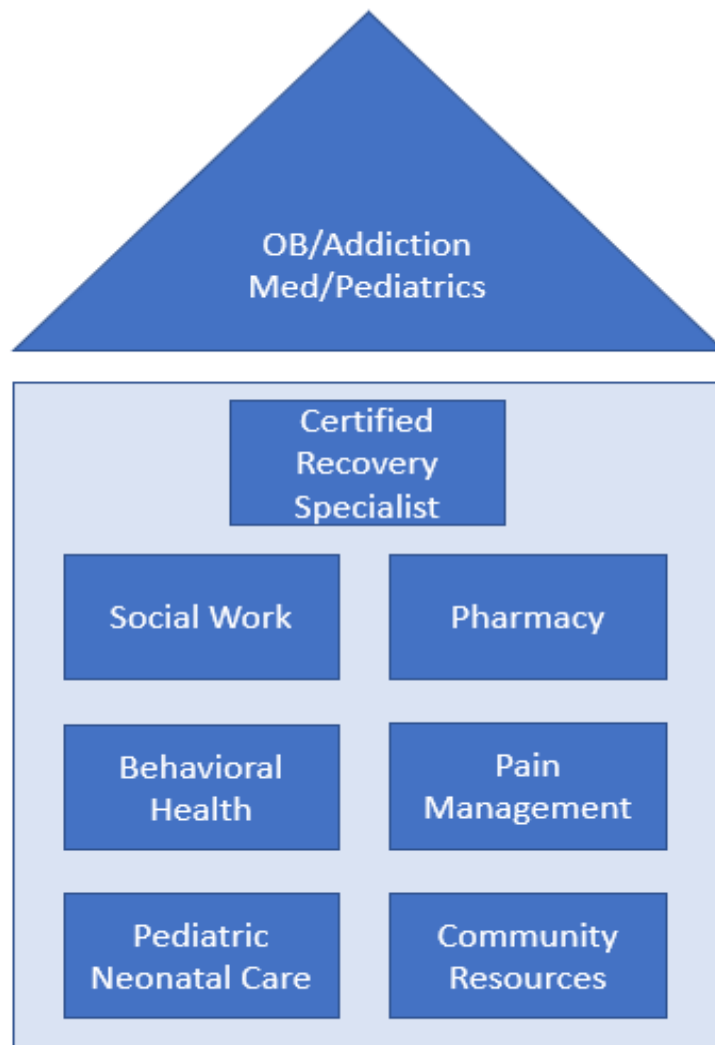




Phase 2: Outpatient Maternal Opioid Use Disorder Clinic

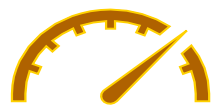
Multidisciplinary Team:

- Obstetrics/Gynecology
- Addiction Medicine
- NICU Neurodevelopmental Follow-Up Clinic, General Pediatrics & Addiction Medicine Fellowship
- Certified Recovery Specialist
- Social Services/Case Management
- Psychiatry/Behavioral Health
- Pharmacy
- Pain Management
- Community Resources



Colocation of Services ("1-stop shop")





Phase 3: Postpartum and Beyond

Crucial areas of focus for treatment and support:

- Delivery
- NOWS (Neonatal opioid withdrawal syndrome)
 - Assess newborn's needs for NOWS
- Plan of Safe Care
 - Confirm the family has a plan and supports in place to ensure a safe discharge for mom and baby
- Provide treatment postpartum, up to 1 year
- F/U NICU Developmental Follow-Up Clinic x 2-5yrs



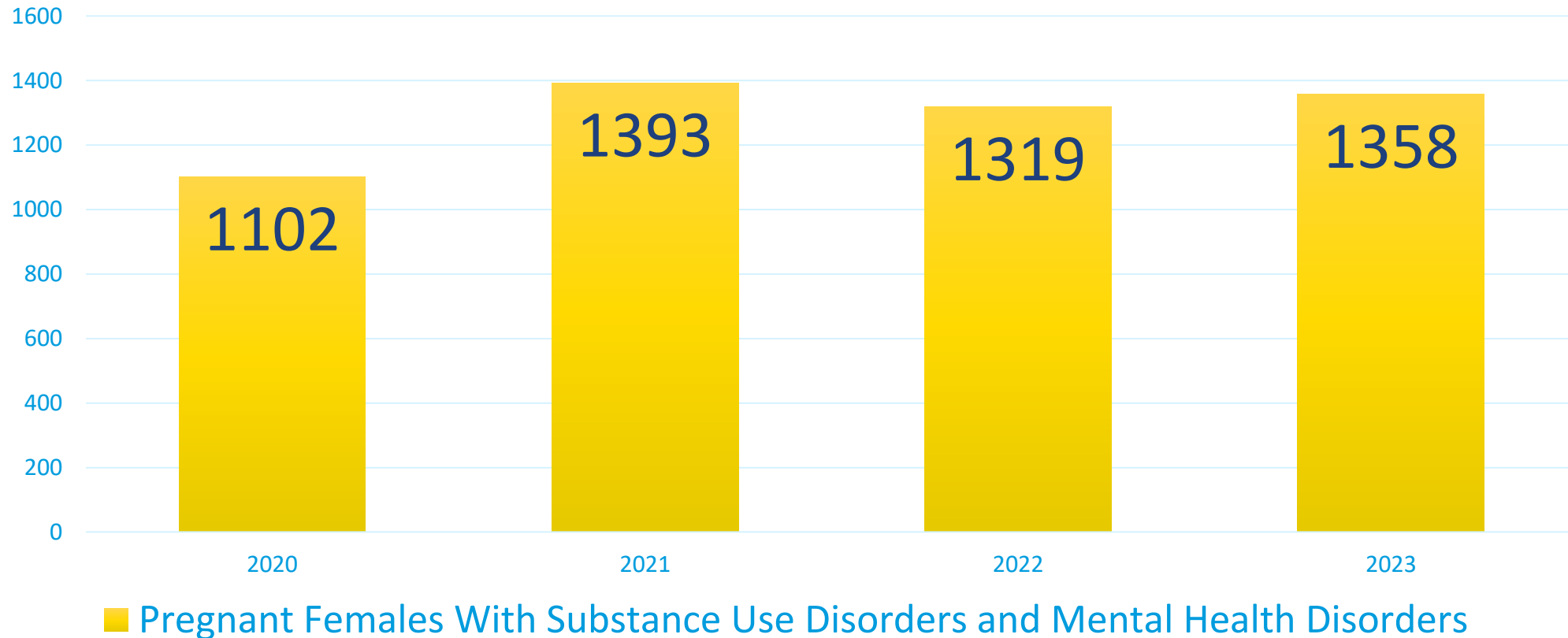
HMC Drug Trend in Obstetrics

- Cannabis is the primary drug of choice. Most patients that are using cannabis, even with a medical card, do not believe the data that cannabis should be avoided in pregnancy.
- Heroin has been replaced with Fentanyl/Xylazine.
- An increase in polysubstance use -fentanyl, xylazine, stimulants (methamphetamine) and cannabis.
- Transition to MOUD is extremely difficult and uncomfortable compared to heroin, due to the higher potency of fentanyl, polysubstance and xylazine, it requires inpatient hospital care to transition to MOUD and higher medication doses.
- Higher doses of MOUD (buprenorphine or methadone) may be required for MOUD maintenance.



PSH Obstetric Drug and Mental Health Trends

Pregnant Females With Substance Use Disorders and Mental Health Disorders



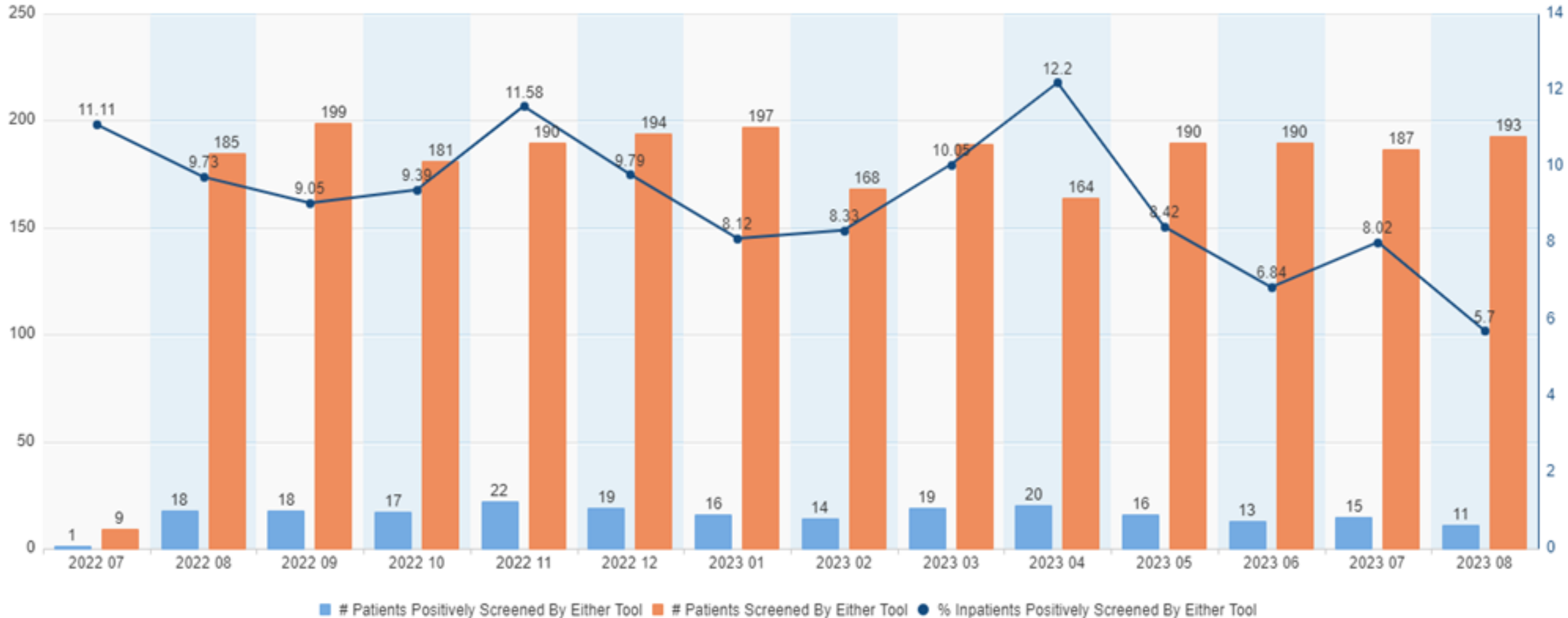
PSH Obstetrical Drug Trends 2020-2023

	2020	2021	2022	2023
Substance use disorder F19	31	41	20	24
alcohol use F10	14	17	10	14
opioid use F11	56	60	33	33
cannabis use F12	82	119	79	67
stimulant use F15	10	8	7	11
sedative use F13	1	1	1	1



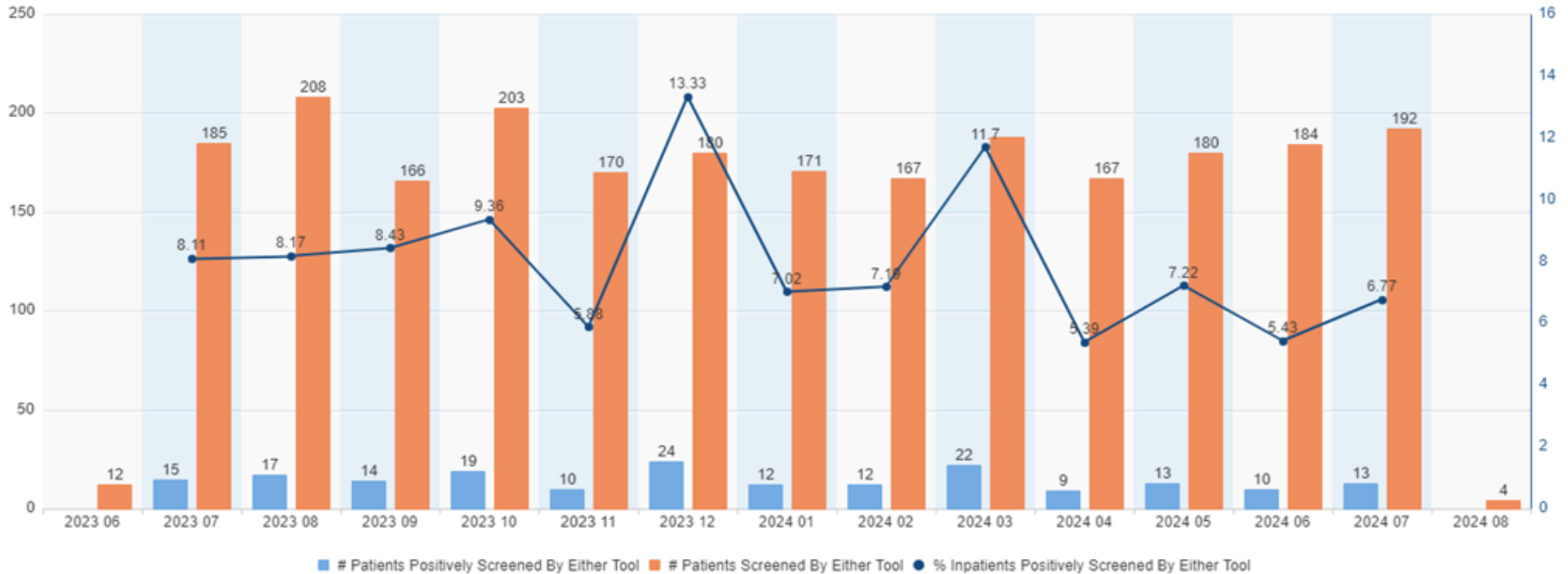
Positive Screens by 5Ps or Universal Screening Assessment II 7/2022- 8/2023

Positively Screened Inpatients by 5Ps or Universal Screening Assessment II



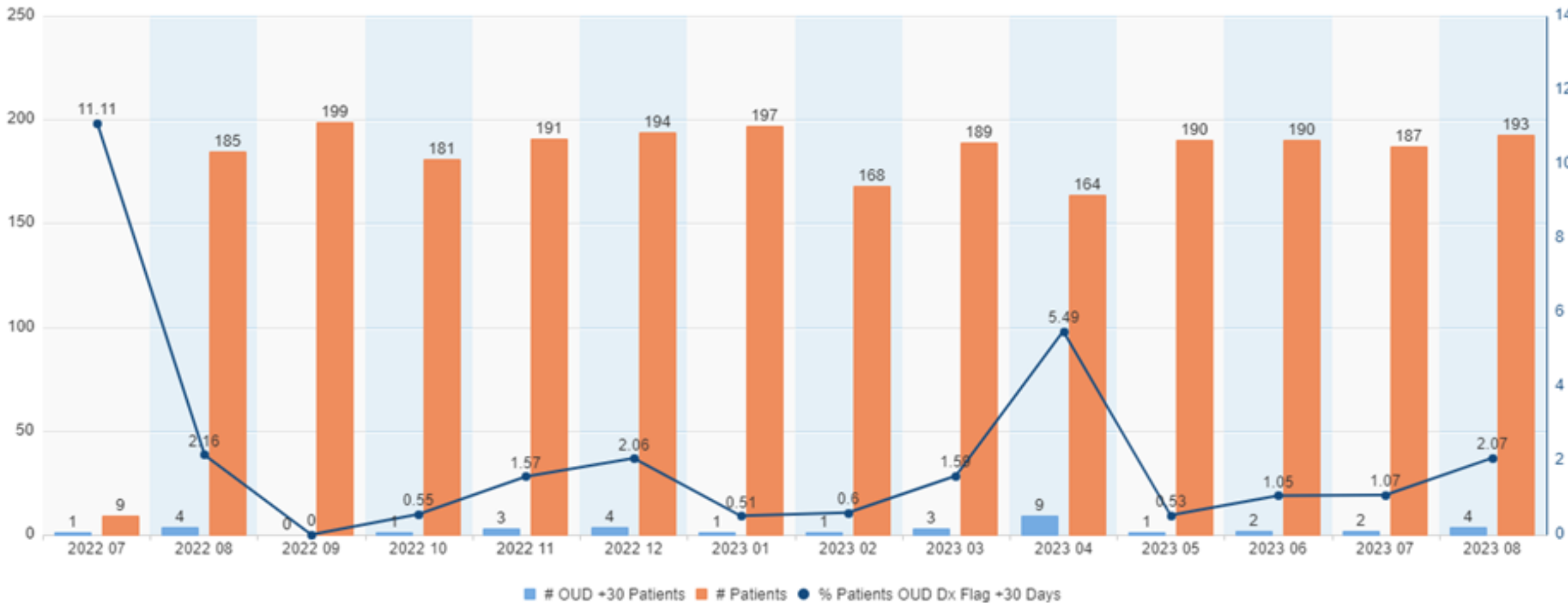
Positive Screens by 5Ps or Universal Screening Assessment II

Positively Screened Inpatients by 5Ps or Universal Screening Assessment II



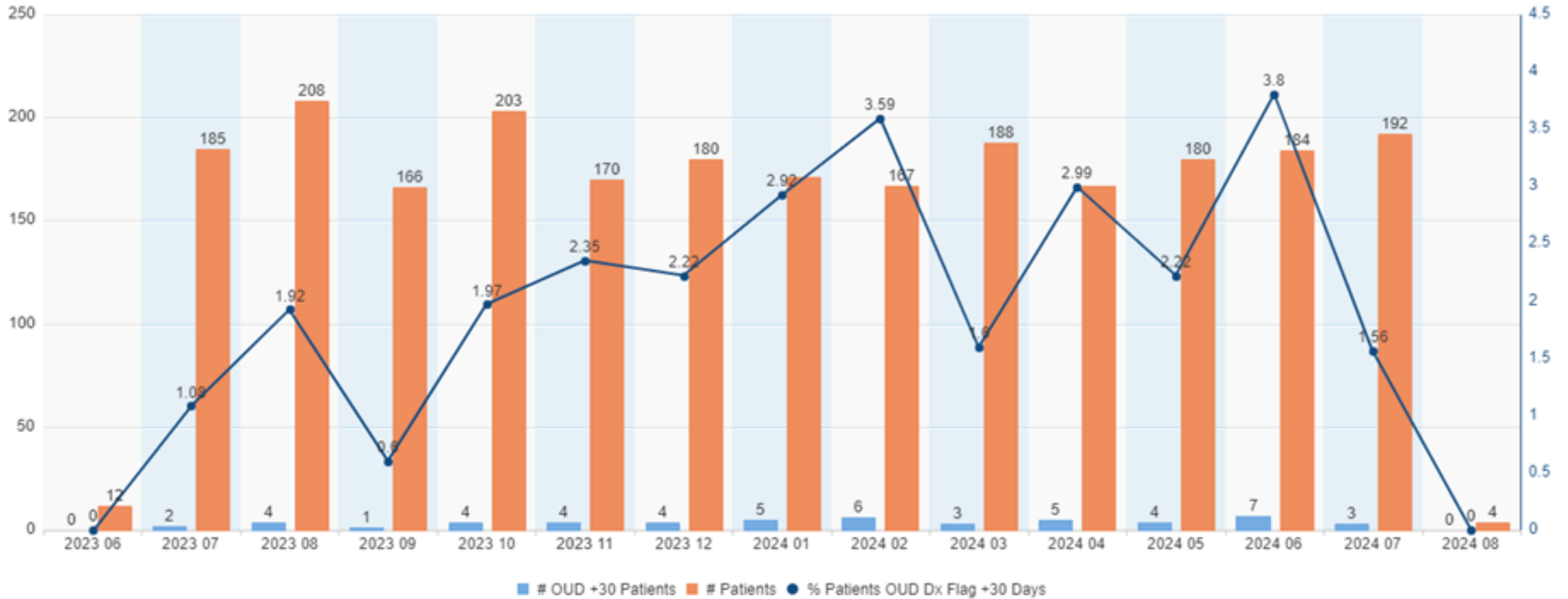
FY23 OUD Diagnosis During Pregnancy Until 30 days Post Delivery (July 2022-August 2023)

Patients with an OUD diagnosis During Pregnancy Until 30 Days Post Delivery - By Delivery Month



FY24 OUD Diagnosis During Pregnancy Until 30 days Post Delivery (June 2023-August 2024)

Patients with an OUD diagnosis During Pregnancy Until 30 Days Post Delivery - By Delivery Month



Benefits of Medications For Opioid Use Disorder (MOUD) in Pregnancy with Buprenorphine or Methadone

Maternal:

- 70% reduction in overdose related deaths
- Decrease in risk of HIV, HBV, HCV
- Increased engagement in prenatal care and recovery treatment

Infant:

- Reduces fluctuations in maternal Opioid levels; reducing fetal stress
- Decrease in intrauterine fetal demise
- Decrease in intrauterine growth restriction
- Decrease in preterm delivery



Consequences of **Not** Treating Opioid Use Disorder Pregnancy

- Maternal

- Lack of prenatal care
- Overdose & or maternal death
- Placental abruption
- Premature delivery
- STD's (HIV, HBV, HCV)

- Infant

- Maternal overdose causing the death of the baby
- Intrauterine growth restriction
- Premature Infant
- Neonatal Opioid Withdrawal Syndrome (NOWS)



Summary

- In 2020, only **6.5 percent** of people with SUD's received treatment. Atypical substances are increasingly becoming common substances of addiction.
- There is an increase of fentanyl and xylazine in illicit drug supply across PA and the US.
- The presence of novel psychoactive substances in the drug supply make starting medications for substance use disorders challenging.
- Pregnancy and postpartum drug overdose deaths increased approximately **81%** from 2017 to 2020 highlighting the need for healthcare facilities to have maternal SUD treatment programs.



What Outpatient Addiction Services Are Available At PSH?



Maternal Substance Use Disorder Clinic

Treats all substance use disorders

(Methadone not given)

35 Hope Drive, Suite 202/204, Hershey,
PA, 17033

717-531-3503



Adolescent Medicine Eating Disorder and Substance Use Disorder (STAR clinic)

PSH Briarcrest Medical Group

Treats all substance use disorders
(Methadone not given)

905 W Governor Rd Ste 200, Hershey, PA
17033

717-531-2099



PennState Health



PennState
College of Medicine

What Outpatient Addiction Services Are Available At PSH?



Office Based Addiction Treatment (OBAT) Clinic-Cocoa Outpatient Center

Treats all substance use disorders
(Methadone not given)

1150 Cocoa Avenue,
Hershey, PA, 17033

717-531-6015



Pennsylvania Psychiatric Institute AIR Program

Treats all substance use disorders
(Methadone OTP)

2501 N 3rd Street,
Harrisburg, PA, 17110

717-782-6844

Inpatient Addiction Services At Penn State Health



Inpatient Addiction Consult Service (under Psychiatry)

Monday to Friday 8-5 pm

Evening and weekends JFT will come to the hospital and get patients into detox/residential treatment
(no medical recommendations)



PennState Health



PennState
College of Medicine



Penn State Health Reproductive and Behavioral Health Program
For your health and wellness



Do you often feel depressed or anxious? Maybe you struggle with chronic pelvic pain or issues with addiction, trauma or harmful childhood experiences. Penn State Health has a supportive team that specializes in reproductive behavioral health – because medical and emotional issues can affect you in many ways.

Our team of experts provides care to individuals 18 and older experiencing mental health concerns associated with pain, trauma, substance use disorders and infertility. We also support women during and after pregnancy. Our commitment to you is timely and complete care for your well-being.

For more information:
Call 717-531-3503

Penn State Health
Obstetrics and Gynecology
Milton S. Hershey Medical Center
35 Hope Drive, Suites 202/204
Hershey, PA 17033



PennState Health

Questions?



PennState Health



PennState
College of Medicine

References

- Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2022 on CDC WONDER Online Database, released 4/2024
- <https://nida.nih.gov/research-topics/trends-statistics/overdose-death-rates>
- DEA - <https://www.dea.gov/engage/operation-engage-Philadelphia>
- [Xylazine threatens pregnant women battling addiction and their fetuses : NPR](#)
- <https://www.health.pa.gov/topics/Documents/Diseases%20and%20Conditions/Pregnancy%20Associated%20Deaths%202013-2018%20FINAL.pdf>
- Bruzelius E, Martins SS. US Trends in Drug Overdose Mortality Among Pregnant and Postpartum Persons, 2017-2020. *JAMA*. 2022;328(21):2159–2161. doi:10.1001/jama.2022.17045
- Understanding Kratom Use: A Guide for Healthcare Providers Marc T. Swogger 1 *, Kirsten E. Smith2 , Albert Garcia-Romeu3 , Oliver Grundmann4,5 , Charles A. Veltri 4 , Jack E. Henningfield3,6 and Lorna Y. Busch1 1 Department of Psychiatry, University of Rochester Medical Center, Rochester, NY, United States, 2 Translational Addiction Medicine Branch, National Institute on Drug Abuse Intramural Research Program, Baltimore, MD, United States, 3 Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD, United States, 4 Department of Pharmaceutical Sciences, Midwestern University College of Pharmacy, Glendale, AZ, United States, 5 College of Pharmacy, Department of Medicinal Chemistry, University of Florida, Gainesville, FL, United States, 6 Pinney Associates, Bethesda, MD, United States
- <https://www.fda.gov/news-events/public-health-focus/fda-and-kratom>
- Matthew S. Ellis , Mance E. Buttram , Alyssa Forber & Joshua C. Black (2023) Associations Between Kratom-Related State Policy Environments and Kratom Use in a Nationally Representative Population in the United States, *Journal of Psychoactive Drugs*, DOI: [10.1080/02791072.2023.2223622](https://doi.org/10.1080/02791072.2023.2223622)



References

- Eastlack SC, Cornett EM, Kaye AD. Kratom-Pharmacology, Clinical Implications, and Outlook: A Comprehensive Review. *Pain Ther.* 2020 Jun;9(1):55-69. doi: 10.1007/s40122-020-00151-x. Epub 2020 Jan 28. PMID: 31994019; PMCID: PMC7203303.
- Kratom Science Update: Evidence-Based Facts Jack Henningfield, PhD,¹ Marilyn Huestis, PhD,² Oliver Grundmann, PhD,³ Albert Garcia-Romeu, PhD⁴
- Edinoff, A.N., Sall, S., Beckman, S.P. *et al.* Tianeptine, an Antidepressant with Opioid Agonist Effects: Pharmacology and Abuse Potential, a Narrative Review. *Pain Ther* **12**, 1121–1134 (2023). <https://doi.org/10.1007/s40122-023-00539-5>
- <https://nd.az.gov/sites/default/files/news/Kratom.pdf>
- <https://pubchem.ncbi.nlm.nih.gov/compound/Tianeptine#section=Pharmacology-and-Biochemistry>
- <https://www.fda.gov/consumers/consumer-updates/tianeptine-products-linked-serious-harm-overdoses-death>
- <https://nd.az.gov/sites/default/files/news/Kratom.pdf>
- <https://www.amerikankratom.org/science>
- <https://www.cdc.gov/mmwr/volumes/67/wr/mm6730a2.htm>
- A Systematic Review of Phenibut Withdrawals Christopher Stewart , Hunter Simonsen , Savitha K. Satyasi , Nauman Ashraf , Suporn Sukpraput-Braaten 1. Medicine, Kansas City University, Joplin, USA 2. Psychiatry, Freeman Health System, Joplin, USA
- Owen DR, Wood DM, Archer JR, Dargan PI (September 2016). "Phenibut (4-amino-3-phenyl-butyric acid): Availability, prevalence of use, desired effects and acute toxicity". *Drug and Alcohol Review.* 35 (5): 591–6. doi:10.1111/dar.12356. hdl:10044/1/30073. PMID 26693960
- Ozon Pharm, [*Fenibut* \(PDF\)](#), archived from [*the original* \(PDF\)](#) on 16 September 2017, retrieved 15 September 2017

