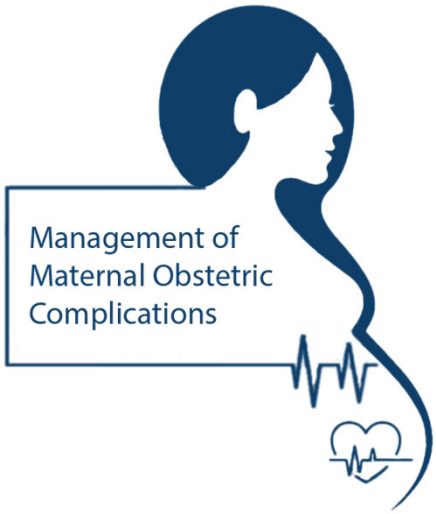
Opioid Use Disorder During Pregnancy

Katherine Katzung, MD, FACEP, FASAM



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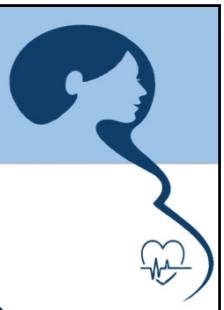
Disclosures



- I have no actual or potential conflict of interest in relation to this presentation.

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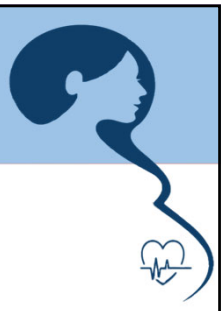
Objectives



1. Review the epidemiology of opioid use in pregnancy.
2. Review endocarditis in pregnancy and association with opioid use disorder.
3. Discuss best practices for treatment of OUD in pregnancy.
4. Discuss use of micro-induction of buprenorphine for hospitalized patients.
5. Review fentanyl pharmacology and how this affects treatment decisions for opioid withdrawal and opioid use disorder.

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OPIOID USE DISORDER: A DISEASE ON A SPECTRUM

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AMERICAN SOCIETY OF ADDICTION MEDICINE

Addiction:

- Is a **primary**, **chronic disease** of brain reward, motivation, & memory.
- Is characterized by **compulsive drug seeking & use despite harmful consequences.**
- Is a treatable disease.
- Involves **cycles of relapse & remission.**
- Involves complex interactions among brain circuits, genetics, the environment and an individual's life experiences.

Prevention efforts and treatment approaches for addiction are generally as successful as those for other chronic diseases.

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DSM-V Diagnostic Criteria Substance Use Disorder

Mild: 2-3

Moderate: 4-5

Severe: 6+

DSM V Diagnostic Criteria: Substance Use Disorder *SEVERITY: 2-3: mild 4-5: moderate 6 or more: severe*
1. Taking the substance in larger amounts or for longer than you meant to.
2. Wanting to cut down or stop using the substance but not managing to do so.
3. Spending a lot of time getting, using, or recovering from use of the substance
4. Cravings and urges to use the substance
5. Not managing to do what you should at home, work, or school because of substance use
6. Continuing to use, even when it causes problems in relationships
7. Giving up important social, occupational, or recreational activities because of substance use
8. Using substances again and again, even when it puts you in danger
9. Continuing to use, even if you have a physical or psychological problem that could have been caused or made worse by the substance
*10. Needing more of the substance to get the effect you want (tolerance)
*11. Development of withdrawal symptoms, which can be relieved by taking more of the substance
*Criteria not met if taking prescribed drugs under supervision

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OPIOID USE DISORDER IN PREGNANCY

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Centers for Disease Control and Prevention

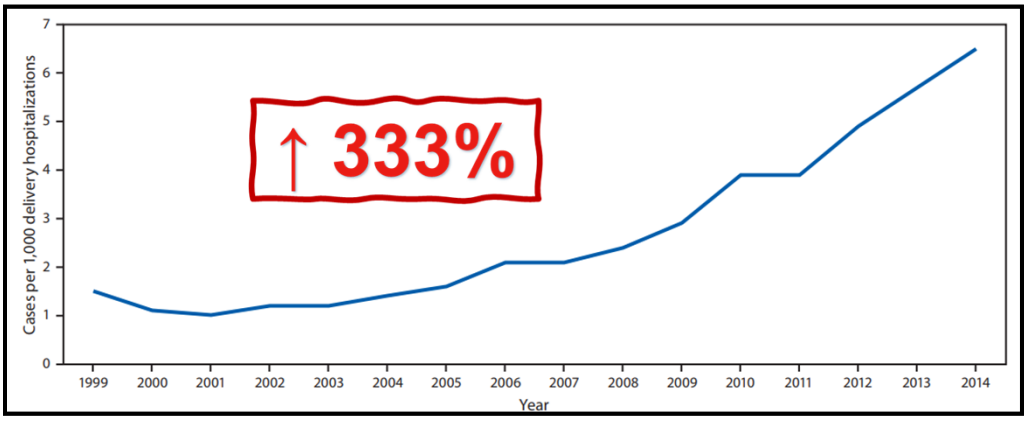
MMWR

Morbidity and Mortality Weekly Report

Weekly / Vol. 67 / No. 31 August 10, 2018

Opioid Use Disorder Documented at Delivery Hospitalization — United States, 1999–2014

Sarah C. Haight, MPH[1,2]; Jean Y. Ko, PhD[1,3]; Van T. Tong, MPH[1]; Michele K. Bohm, MPH[4]; William M. Callaghan, MD[1]



National Prevalence of OUD per 1,000 Delivery Hospitalizations in the US (1999-2014)

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Research Article

Maternal Opioid Drug Use during Pregnancy and Its Impact on Perinatal Morbidity, Mortality, and the Costs of Medical Care in the United States

Valerie E. Whiteman,[1] Jason L. Salemi,[2] Mulubrhan F. Mogos,[3] Mary Ashley Cain,[1] Muktar H. Aliyu,[4] and Hamisu M. Salihu[1,2]

Outcomes	Rate[a] of outcome		Odds Ratio
	Opioid users	Nonopioid users	
Maternal			
Threatened preterm labor	30.1	22.3	1.36 (1.24–1.49)
Early onset delivery	124.0	65.2	2.03 (1.88–2.20)
PROM	38.5	35.4	1.10 (1.00–1.20)
Wound infection	7.0	5.0	1.41 (1.18–1.68)
Acute renal failure	2.1	0.5	4.10 (3.11–5.41)
Postpartum depression[f]	24.7	2.1	12.04 (10.83–13.40)
Hospital stay >5 days[e]	133.4	29.9	5.00 (4.16–6.02)
In-hospital maternal mortality	0.8	0.1	5.89 (3.74–9.28)
Fetal			
Poor fetal growth	35.9	15.9	2.31 (2.10–2.55)
Stillbirth	10.0	6.3	1.60 (1.39–1.83)

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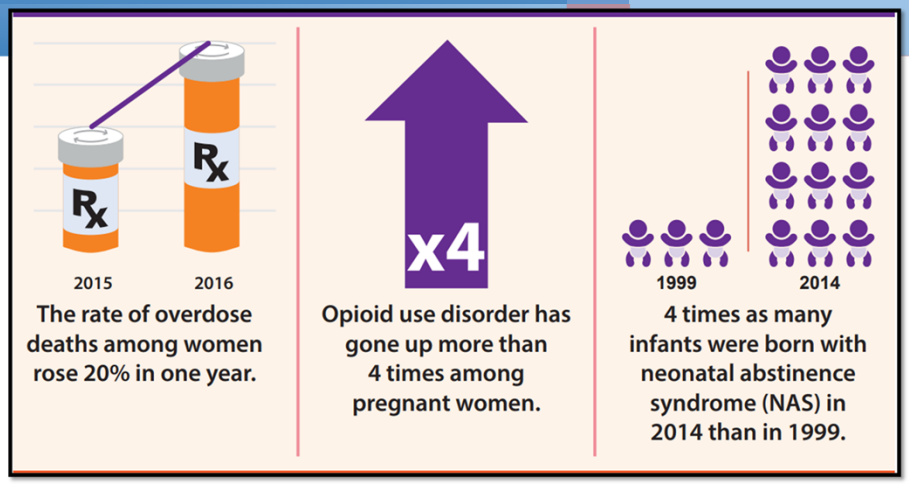

MMWR-Opioids-Use-Disorder-Pregnancy-Infographic-h.pdf (cdc.gov)

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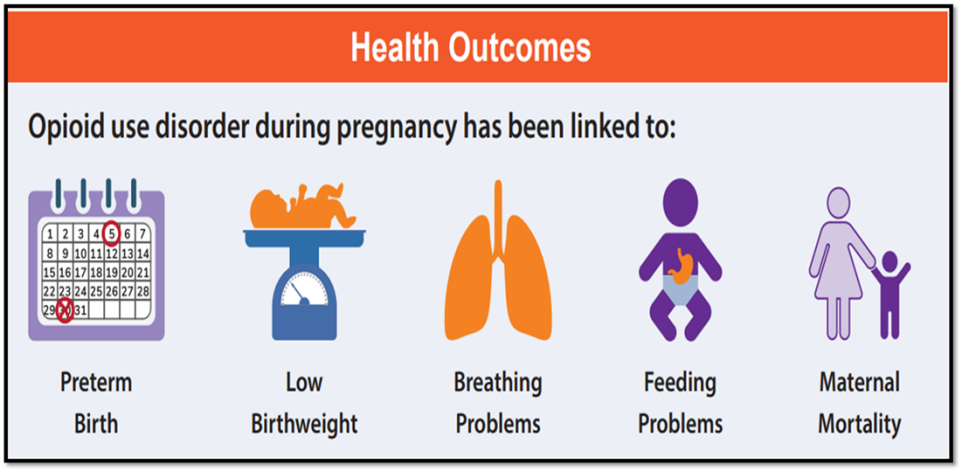
UNTREATED OPIOID USE DISORDER IN PREGNANCY



MMWR-Opioids-Use-Disorder-Pregnancy-Infographic-h.pdf (cdc.gov)

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FENTANYL: A NEW ERA

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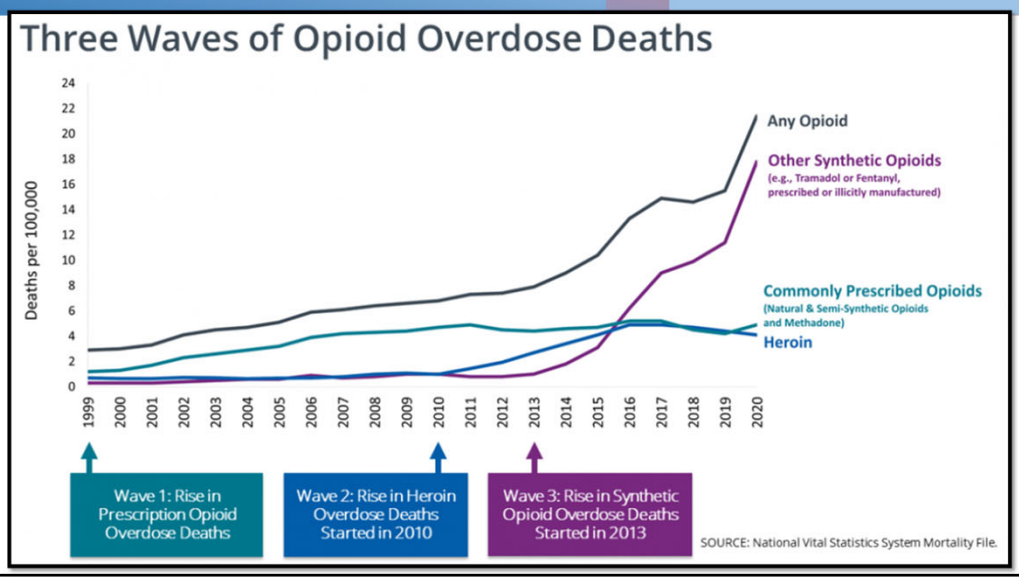
THE FENTANYL ERA



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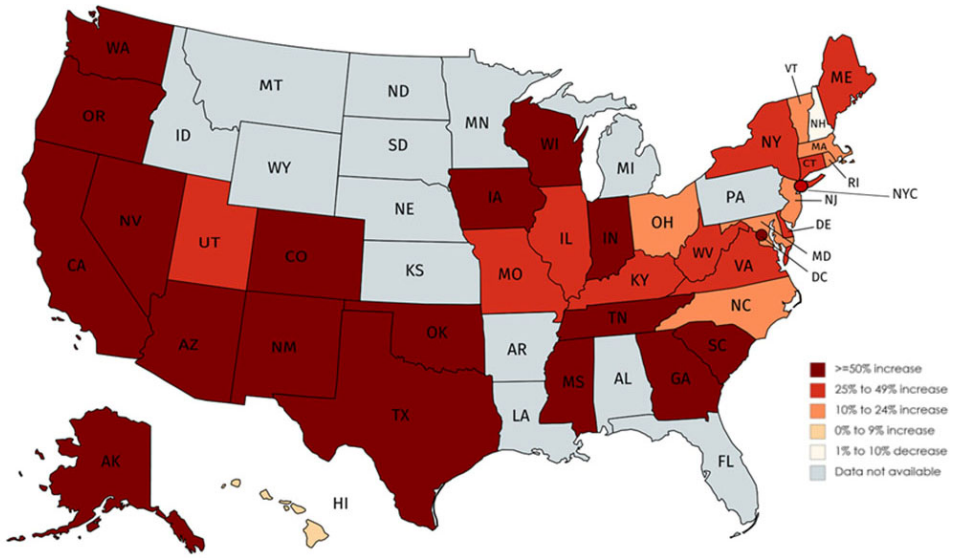
% Change in Fatal Overdoses Involving Synthetic Opioids 2019-2020



CDC

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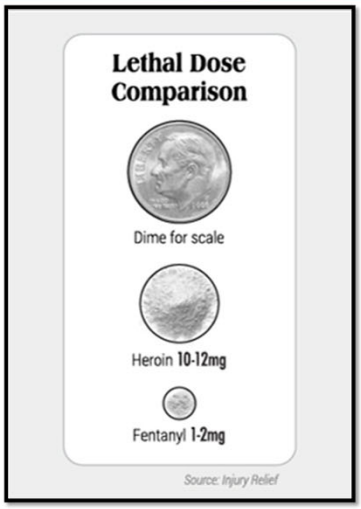
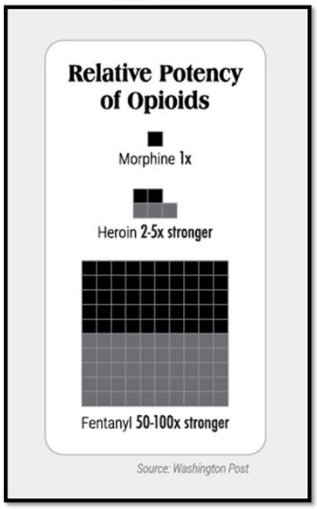
WHY FENTANYL?

- Cheap and relatively easy to produce.
- Highly lipophilic
- Short onset and duration of action.
- Behaves like a long-acting opioid with chronic use.
- High tolerance with repeated use and severe withdrawal symptoms.





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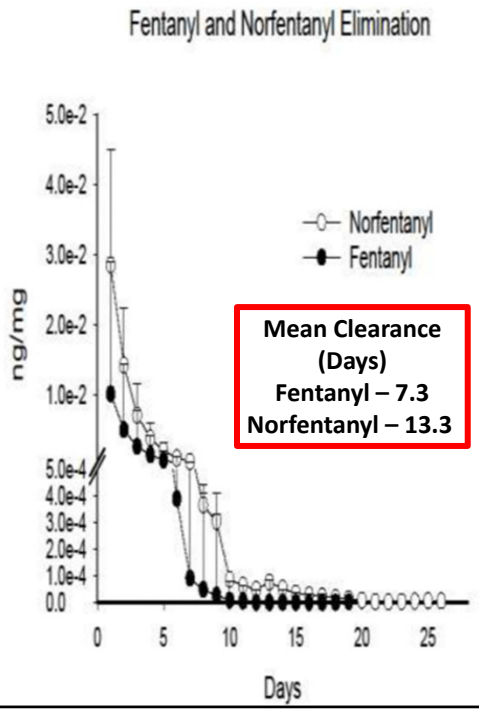
IMPORTANCE OF FENTANYL HIGH LIPOPHILICITY

- "Fast In, Fast Out" Drug
- Rapidly crosses the blood-brain barrier, in both directions.
  - Acts quickly.
  - Shorter duration of action.
- Sequestered in lipid cells with gradual release from tissues.
  - Prolonged elimination half-life.
  - **Longer window for potential precipitated withdrawal!**



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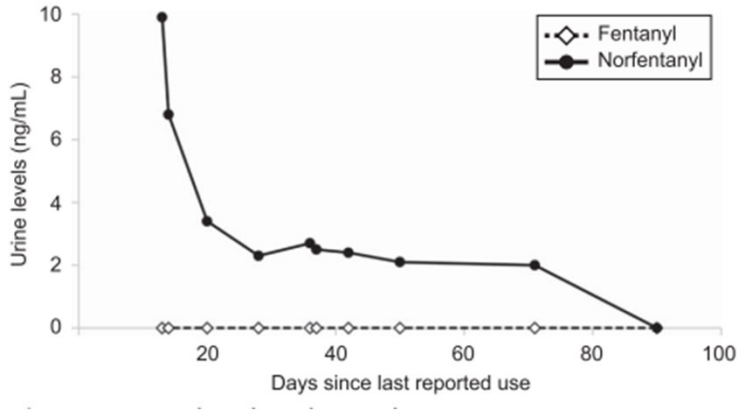
FENTANYL CLEARANCE IN PREGNANCY: A CASE REPORT



- **Norfentanyl = inactive metabolite of fentanyl!**
- Final use of fentanyl @ 18 weeks = norfentanyl levels > 500 ng/mL.
  - Patient BMI – 43
- Norfentanyl remained in her system for 70 days.
- 1° Testing = UDS Immunoassay
  - Confirmatory Test = GC/MS w/quantification.

Wanar A, Saia K, Field TA. Delayed Norfentanyl Clearance During Pregnancy. Obstet Gynecol. 2020 Nov;136(5):905-907.

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A CRITICAL CASE

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- 24yo G3P0111 presented to ED with difficulty breathing, subjective fever, and flank pain.
  - Appears gravid, but unsure of last menstrual period.
  - No prenatal care.
  - Unstable housing.
- EMR reviewed as patient in respiratory distress and unable to provide history.
  - Past Medical History:
    - Intravenous Drug Use – Fentanyl, Meth
    - Hepatitis C
    - **Infectious Endocarditis – MSSA**
      - **~1 year ago, admitted x 6 weeks for IV antibiotics; lost to follow-up at discharge.**

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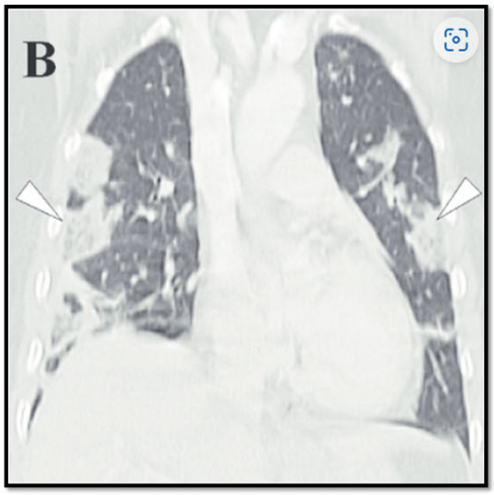
CLINICAL COURSE

- Diagnoses:
  - Septic Emboli
  - Pyelonephritis
  - MSSA Bacteremia
  - Thrombocytopenia
  - ~28 weeks gestation based on US
- Admitted to ICU with respiratory failure and was intubated.
- Betamethasone given for fetal lung maturation.



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