

# Opioid Review and MAT Clinic

October 2, 2019

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# Outcomes

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- Examine the effects of escalating opioid doses and correlation to mortality
- Compare the different reasons for premature discharge of patients on Methadone or Buprenorphine

# Outcome Differences in Neonates Exposed In-Utero to Opioids Managed in the NICU Versus Pediatric Floor

Lembeck, Amy L. DO; Tuttle, Deborah MD; Locke, Robert DO, MPH;  
Lawler, Laura MD; Jimenez, Pamela RN, MSN, FNP-BC/PNP-BC; Mackley,  
Amy MSN, RNC; Paul, David A. MD. *Journal of Addiction Medicine*:  
January/February 2019 - Volume 13 - Issue 1 - p 75–78. doi:  
10.1097/ADM.0000000000000455

# POLL



# Outcome Differences in Neonates Exposed In-Utero

- Methods: Retrospective cohort (235 infants)
  - NICU: 80
  - Peds: 155
- >34 weeks
- Standard Finnegan Protocol
- Birth weights
- Gender
- Race/ethnicity
- Feeding method
- Maternal drug exposures- methadone, bup, cocaine, benzo, marijuana, SSRI, alcohol, amphetamine, tobacco

# Outcome Differences in Neonates Exposed In-Utero

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- 1<sup>st</sup> Outcome:
  - Length of treatment
  - Length of stay
- 2<sup>nd</sup> Outcome:
  - Day of life for med
  - Initiation and maximum dose

# Outcome Differences in Neonates Exposed In-Utero

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- Baseline characteristics similar except NICU
  - Lower gestational ages
  - Lower birth weights
  - More likely to receive formula

# Outcome Differences in Neonates Exposed In-Utero

- Unadjusted Primary Outcomes:
  - Increased length of stay (18.0 vs 9.0,  $p < 0.01$ ) and treatment in NICU (27.1 vs 14.2,  $p < 0.01$ )
  - Similar age at start of meds (2 vs 2.3)
  - NICU higher doses (0.10 vs 0.06,  $p < 0.01$ )



# Outcome Differences in Neonates Exposed In-Utero

- Controlling for gestational age, antenatal maternal benzo use, SSRI use, cannabis/amphetamine exposure, breast-feeding
  - NICU had 12.6 days longer pharmacological treatment (8.3-16.8, 95% CI,  $p < 0.01$ )
  - NICU had 12.3 days longer LOS (7.9-16.6, 95% CI,  $P < 0.01$ )

# Outcome Differences in Neonates Exposed In-Utero

- Adjusted for gestational age, birth weight, lower degree of illness severity for NICU babies transferred to the peds floor
- 27 “healthy” NICU babies compared to pediatric floor
- The 27 “healthy” NICU differed only in breastfeeding ( $p=0.03$ ) though not statistically significant
- Healthy NICU
  - Still +10.6 more length of stay ( $p<0.01$ )
  - Still +10.8 more treatment ( $p<0.01$ )

# Outcome Differences in Neonates Exposed In-Utero

- Thoughts and Applicability
  - Non-NICU Benefits
    - Less chaotic
    - Quiet environment
    - Decreased stimulation
    - Encouraged maternal-infant dyad and breastfeeding
    - More non-pharmacologic treatment (do NICUs have inherent bias to give meds)
  - Also: reduction of cost. In 2012...
    - Infants with NAS- \$66,700
    - Infants with NAS and treatment- \$93,400
    - Uncomplicated \$3,500

# Outcome Differences in Neonates Exposed In-Utero

- Environment of care
  - Kangaroo care
  - Music therapy
  - Massage
  - Aroma therapy
  - Swaddling
  - Decreased stimuli
  - Rocking
  - Breast-feeding
  - Maternal-infant dyad care



# Medication Treatment With Methadone or Buprenorphine: Differential Reasons for Premature Discharge

Proctor, Steven L. PhD; Birch, Autumn MS; Herschman, Philip L. PhD. *Journal of Addiction Medicine*: March/April 2019 - Volume 13 - Issue 2 - p 113–118. doi: 10.1097/ADM.0000000000000456

# Medication Treatment with Methadone or Buprenorphine

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- Objective of Study
  - Reasons for premature discharge from a medication treatment program (Methadone or Buprenorphine) Fall into two groups

# Medication Treatment with Methadone or Buprenorphine

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- Patient initiated
  - Want to go back to Suboxone use
  - Dissatisfaction with staff
  - Frustration with program
- Program initiated
  - Behavioral Issues
  - Conflict with staff
  - Non-payment
  - Failure to comply with program rules

# Medication Treatment with Methadone or Buprenorphine

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- Previous Research is Limited
- \*\* Qualitative research suggest patients on Methadone leave treatment early due to:
  - Disagreement with program rules
  - Confrontation with staff
  - Schedule conflicts
  - Financial Problems (Can't pay)
- Reisinger et al 2009



# Medication Treatment with Methadone or Buprenorphine

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- Conversely Buprenorphine patients in a randomly controlled trial indicated the most common reported barriers to retention included:
  - Negative medication experiences
  - Personal circumstances (transportation)
  - Wanted to try alternative medication (Methadone)

# Medication Treatment with Methadone or Buprenorphine

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- Authors felt that further research is needed to further delineate the specific reasons for leaving treatment to develop and implement targeted strategies to improve treatment retention.

# Medication Treatment with Methadone or Buprenorphine

- METHODS: Data derived from the EMR for 5,486 patients discharged from 41 For Profit Licensed Opioid Programs from 2012-2013
  - Retrospective chart review
  - All programs owned by the same organization (9 different states)
  - All used the same procedures
  - Same protocol – daily visits/take home earned
  - Patients not randomized
  - Two differences noted on comparison of the two medication groups
    - Buprenorphine → More self pay
    - Methadone → Slightly older, more likely positive meth, benzo, and cocaine

# Medication Treatment with Methadone or Buprenorphine

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- Results from logistic regressions revealed
  - Buprenorphine patients were more than 2x likely to leave AMA
  - Methadone patient were 1.76x more likely to leave due to an administrative discharge

(These were controlled for age, payment method, and initial urine screen)

# Medication Treatment with Methadone or Buprenorphine

- Limitations- not randomized- patient and doctor input on MAT drug prescribed
  - Patient and provider bias may influence drug chosen
  - Nearly all white patients/ No diversity
  - Self pay patients at a for profit center
  - Previous opioid of choice and route where not available – (known to impact retention)

# Medication Treatment with Methadone or Buprenorphine

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- Results- similar to other smaller studies
  - Buprenorphine patients twice as likely to leave program AMA
  - Methadone patients- twice as likely as buprenorphine patients to be discharged from program

# Medication Treatment with Methadone or Buprenorphine

- Buprenorphine- theories proposed for dropout
  - Less positive effects of full agonists (mood and sedative effects)
- Methadone
  - Possible that initial emphasis on rules and policies were not well understood by patients

# Medication Treatment with Methadone or Buprenorphine

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- How to Fix...
  - For buprenorphine – better support, contingency management, and education
  - For methadone – more program flexibility, contingency management, early clarification of rules



# Alcohol and Drug Overdose and the Influence of Pain Conditions in an Addiction Treatment Sample

Fernandez, Bush, Bonar, Blow, Walton, Bohnert. Alcohol and Drug Overdose and the Influence of Pain Conditions in an Addiction Treatment Sample. *J Addict Med* 2019; 13: 61-68

# POLL

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# Alcohol and Drug Overdose

- Alcohol is involved in 1 in 4 drug OD related ED visits
- Alcohol most commonly used substance in the US
- Fatal alcohol OD more rare, but major contributor to fatal and non fatal OD



# Alcohol and Drug Overdose

## • Pain

- 87% of patients with AUD/SUD report chronic pain
- 50% reported severe chronic pain
- Patients reporting pain report higher propensity of misusing legal and illegal substance = “self-medicating”



# Alcohol and Drug Overdose

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- Methods
  - Self administered tests and surveys
    - Demographics
    - Pain
    - Overdose history
    - Alcohol and drug use
    - Depression

# Alcohol and Drug Overdose

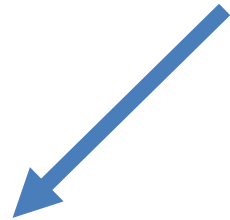
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- Patients
  - > 18 years old
  - 74% male
  - Median age: 37
  - 67% white, 23% African American
  - 49% high school
  - 35% some college

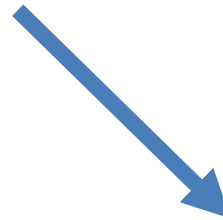
# Alcohol and Drug Overdose

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**739 patients**



**713 at risk for  
ETOH OD**



**684 at risk for  
drug OD**

# Alcohol and Drug Overdose

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- Results

- Pain in 71.7% (49.8% chronic)
- Overall between full sample 45.3% had 1+ OD in life (83.2% ETOH, 53.4% drug)
- Alcohol OD: younger patients with chronic pain or both chronic and acute were more likely to have ETOH OD



# Alcohol and Drug Overdose

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- Results Continued
  - 3 out of 4 in sample had chronic pain
  - ETOH OD is 2.6x higher in patients with chronic pain
  - In pain patients ETOH and drug use were common contributors to OD
  - 41% of alcohol overdoses were involving marijuana

# Alcohol and Drug Overdose

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- Results Continued
  - Drug OD steadily increases with severity of opioid misuse and depression
  - No clear link between pain and drug OD
  - Drug OD was lower in frequency than alcohol

# Escalating Opioid Dose is Associated with Mortality: A Comparison of Patients With and Without Opioid Use Disorder

Hser, Saxon, Mooney, Miotto, Zhu, Yoo, Liang, Huang, Bell. Escalating opioid dose is associated with mortality: a comparison of patients with and without opioid use disorder. *J Addict Med* 2016; 13: 41-46.

# Escalating Opioid Dose

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- Objective:
  - To investigate longitudinal opioid prescribing patterns among patients with OUD and without OUD

# Escalating Opioid Dose

## • Method

- Use data from California PDMP in the four years prior to death
  - 2,576 patients with OUD
  - 5,152 matched patients without OUD (2 controls per case by matching sex, DOB, 1<sup>st</sup> encounter, and comorbidity index)
- Patients
  - 60% male
  - 67% white
  - 82% had private insurance or self pay
  - 57% had mental health issues

\*By 2014, 18% of the patients with OUD were dead (age 51) and 10.4% of non-OUD patients were dead (51 years old)

# Escalating Opioid Dose

## • Results

- More patients with OUD were white and were more likely to have public insurance
- OUD patients had significantly higher rates of health conditions (all  $p < 0.01$ )
  - HIV 2.3% (vs. 1.3% in controls)
  - HCV 22.3% (vs. 9.8% in controls)
  - Chronic pain 63% (vs. 50% in controls)
  - Other SUD 65% (vs. 53% in controls)
    - Particularly meth 11.2% (vs. 1.9% in controls)
    - Cocaine 13.2% (vs. 2.8% in controls)
    - Tobacco 19.6% (vs. 7.6% in controls)

# Escalating Opioid Dose

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- Patients with OUD received more prescriptions for opioids and at higher doses than controls
- Escalating prescribing patterns were associated with increased mortality in both OUD and non OUD patients
- OUD patients that died received an average 87.1 MME/d vs 52.2 MME of patients alive with OUD
  - Non OUD patients that died received 19.8 MME vs non OUD living patients that received 8.6 MME

# Escalating Opioid Dose

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- Escalating prescribing patterns were associated with heightened mortality risk for both OUD patients **AND** controls, significantly more so among the OUD patients



# Escalating Opioid Dose

- Limitations

- PDMP does not include:

- VA
- Military
- Inpatients
- Methadone clinics
- Out of state pharmacies
- Internet sources

- One health system- predominantly white patients

- Cannot account for non-prescription opioids obtained

# Escalating Opioid Dose

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- Strengths
  - First study to link medical records, medication prescriptions records, and mortality
  - Study controlled for severity of physical and mental conditions