Emergency Department Perspective
Access to Care

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Disclosure Statement

Current grant funding:
Why focus on the ED?

Because that’s where the patients are!

Approximately one of every 80 visits to the ED are opioid-related (costing 5 billion per year)

Langabeer, Drug & Alcohol Dependence, Jan 2021
Not all that looks like an opioid OD is………

- 52 patients - 111 ED visits
- 49 patients within 10 hours
- Variable presentations of altered mental status – ranging from agitated delirium to comatose
- No deaths, 2 intubations

Synthetic Cannabinoids
MMB-FUBINACA
5F-MDMB-PINACA
COVID-19 Collides with the Opioid Epidemic

Count of ED Visits in the US
December 30, 2018, to October 10, 2020

Weekly % Δ in Total ED visits, all drug OD, and opioid OD in 2020 compared to 2019

Holland, JAMA Psych, Feb 2021
# Use of Medication-Assisted Treatment in Emergency Departments

**Content of the Guide**

This guide contains a foreword and five chapters. The chapters are modular and do not need to be read in order. Each chapter is designed to be brief and accessible to health care providers, health care system administrators, community members, and others working to meet the needs of individuals with OUD.

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Summary</th>
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<tr>
<td>FW</td>
<td>Evidence-Based Resource Guide Series Overview</td>
<td>Foreword and introduction to the series.</td>
</tr>
<tr>
<td>1</td>
<td>Issue Brief</td>
<td>Overview of how the ED is uniquely positioned to help individuals presenting with opioid use disorder; the pharmacology of Medication-Assisted Treatment with specific attention to buprenorphine and its formulations for use in the ED. In addition, tips are provided to improve adoption and reduce the stigma of opioid use disorder.</td>
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<tr>
<td>2</td>
<td>What Research Tells Us</td>
<td>Current evidence regarding the effectiveness of ED-initiated buprenorphine and implementation strategies. Included are harm reduction strategies such as overdose education and naloxone distribution.</td>
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<td>3</td>
<td>Examples of Emergency Department Programs</td>
<td>Highlights four innovative ED programs using evidence-based practices for ED-initiated buprenorphine and referral to continuing care.</td>
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<td>4</td>
<td>Addressing Myths to Implementing Evidence-Based Practices and Programs</td>
<td>Practical strategies to ensure success in adoption of ED-initiated buprenorphine.</td>
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<td>5</td>
<td>Resources to Support Greater Access to and Effective Use of Medications for Opioid Use Disorder in Emergency Departments</td>
<td>Guidance and resources for implementing evidence-based programs and practices, monitoring outcomes, and improving quality.</td>
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</table>
Buprenorphine Use increased significantly from 2002-2003 to 2016-2017 (odds ratio for linear trend, 3.31; 95% CI, 1.04-10.50; P = .04).

Prevalence of buprenorphine use, #/100,000 ED visits
Patient Themes (CTN 0069 & 0079)

- Need for low-barrier access to treatment in the ED, particularly after OD
- Sense that ED staff did not understand addiction or perceive it as a medical disease
- Perception that pain and medical issues were minimized or not taken seriously because of history of addiction
- History of feeling stigmatized while receiving ED care, with recent variability noted across EDs
- Rare positive experiences with clinicians
To Date...

There are no standardized and broadly implemented ED-based detection, intervention, and referral protocols for patients with opioids and amphetamine type stimulant use.
Methamphetamine Use Promotes more Chaotic & Unpredictable Opioid Use

• Fluctuating opioid use amounts and irregular use patterns
• Typical activated state of opioid withdrawal, is diminished as patient sedated, often used for such…(COWS scoring inaccurate)
• Withdrawal of a methamphetamine binge results in severe somnolence that can confound assessment of opioid withdrawal.
• Opioid OD may occur in attempt to reduce effects from a prolonged meth binge
  ➢ Hypersomnolence with opioid use may lead to OD with an opioid dose that might not normally cause an OD.
Amphetamine-type stimulant use among ED patients with untreated opioid use disorder was associated with distinct sociodemographic, social, and health factors.
Amphetamine Type Stimulant Use
Baseline CTN 0069

102/128 (79.9%)

39/122 (32%)

3/42 (7.1%)

6/105 (5.7%)
Differences between ATS+ & ATS- Patients

Note: FDR-corrected significance level for ED presentation with overdose was $p=0.057$. All other FDR-corrected significance levels were $p < 0.05$. 
ED INNOVATION  27 Sites

ED-INitiated BupreNOorphine VALidaTION Network Trial

Hybrid Type 1 Implementation-Effectiveness

Comparing the effectiveness of XR-BUP (7-day injectable) & SL-BUP induction on engagement in formal addiction treatment at 7 days

NIH HEAL Initiative 3UG1DA015831
## CTN 0099 Substance Use (POC Urine Testing)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Overall (N = 361)</th>
<th>Region</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>East – 18 sites (N = 213)</td>
<td>West – 8 sites (N = 148)</td>
</tr>
<tr>
<td>Opioid + Other Drug</td>
<td>301 (83.4)</td>
<td>171 (80.3)</td>
<td>130 (87.8)</td>
</tr>
<tr>
<td>Opioid + Marijuana</td>
<td>170 (47.1)</td>
<td>95 (44.6)</td>
<td>75 (50.7)</td>
</tr>
<tr>
<td>Opioid + Benzodiazepines</td>
<td>64 (17.7)</td>
<td>48 (22.5)</td>
<td>16 (10.8)</td>
</tr>
<tr>
<td>Fentanyl Only</td>
<td>17 (4.7)</td>
<td>15 (7.0)</td>
<td>2 (1.4)</td>
</tr>
<tr>
<td>Fentanyl + Other Drug</td>
<td>244 (67.6)</td>
<td>168 (78.9)</td>
<td>76 (51.4)</td>
</tr>
</tbody>
</table>

### Opioids & Stimulants

<table>
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<tr>
<th>Substance</th>
<th>N (%)</th>
<th>Region</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opioid + Meth</td>
<td>119 (33.0)</td>
<td>39 (18.3)</td>
<td>80 (54.1)</td>
</tr>
<tr>
<td>Opioid + ATS</td>
<td>131 (36.3)</td>
<td>47 (22.1)</td>
<td>84 (56.8)</td>
</tr>
<tr>
<td>Opioid + Any Stimulant</td>
<td>208 (57.6)</td>
<td>110 (51.6)</td>
<td>98 (66.2)</td>
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</tbody>
</table>

Opioids = buprenorphine, opiates, oxycodone, fentanyl
Other Drugs = amphetamines, barbiturates, benzodiazepines, cocaine, ecstasy, methamphetamine, phencyclidine, marijuana
ATS = methamphetamine, Amphetamine
Stimulant = Cocaine, amphetamine, methamphetamine, phencyclidine
Possible Treatment Strategies

• Treat the life-threatening disease with known benefit (OUD with buprenorphine)

• Irregular use of opioids, makes chance of taking daily buprenorphine unlikely
  • XR-BUP 30-day injection is most realistic intervention for severe co-use
  • Use of high-dose buprenorphine to bridge gap between ED and follow-up

• Harm reduction may focus on the binge use of methamphetamines and treating insomnia and thought disorder
  • Provide access to mood stabilizing drugs, sleep aids and antipsychotics
Research Questions & Opportunities for EDs

• Missing critical tools: Test specific pharmaco- & behavioral interventions
  Current behavioral treatments are complex, (contingency management) and would need funding from insurers (private, Medicaid/Medicare)

• Address vulnerable populations in all interventions

• Test strategies that will promote access and linkage to care

• Use of ED INNOVATION network for surveillance (prevention & treatment efforts before OD death data) as well as provides opportunities for future studies
Thank you!!!

Websites:
https://www.drugabuse.gov/ed-buprenorphine
https://medicine.yale.edu/edbup/
# Opioid vs. Sympathomimetic Toxidromes

<table>
<thead>
<tr>
<th>HR &amp; BP</th>
<th>Resp.</th>
<th>Temperature</th>
<th>Pupils</th>
<th>Bowel Sounds</th>
<th>Diaphoresis</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="heart.png" alt="Heart" /></td>
<td><img src="lungs.png" alt="Lungs" /></td>
<td><img src="temperature.png" alt="Temperature" /></td>
<td><img src="pinpoint.png" alt="Pinpoint" /></td>
<td><img src="bowel.png" alt="Bowel" /></td>
<td><img src="diaphoresis.png" alt="Diaphoresis" /></td>
</tr>
</tbody>
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## Opioid
- Morphine
- Codeine
- Tramadol
- Heroin
- Meperidine
- Diphenoxylate
- Hydromorphone
- Fentanyl
- Methadone
- Propoxyphene
- Pentazocine
- DXM
- Oxycodone
- Hydrocodone

## Sympathomimetic
- Caffeine
- Cocaine
- Amphetamines
- Methamphetamines
- Ritalin
- LSD
- Theophylline
- MDMA
A Randomized Trial of ED-Initiated Interventions for Opioid Dependence

Engaged in Treatment 30-Days

Past 7 Day illicit Opioid Use