The Opioid Epidemic and the Impact on the Queen City

Dr. Jennifer Mooney
Director, Family Health Division
How does addiction happen?

Opioids have side effects.
A person who takes opioids can become tolerant to them. This means that more of the drug is needed to obtain its effects. It is also possible to become dependent on opioids—to feel sick if there are no opioids in the body. This sickness is called withdrawal.

From SAMHSA
Heroin: 101

• Heroin ("smack", "junk", or "dope") is made from the opium poppy.
• Heroin belongs to a class of drugs known as opioids, along with opium, codeine, morphine, methadone, and oxycodone.
• Long ago, heroin was prescribed or even sold over the counter.
• Heroin is snorted, smoked (chased or mixed with pot), or injected.
• Withdrawal symptoms include diarrhea, stomach cramps, sweating, itching, insomnia, vomiting and nausea.
Heroin Euphoria

- Heroin users report feelings of warmth, well-being, euphoria, contentment, pain relief, a dreamlike state and dulled emotion.
- Undesirable effects may include appetite loss; nausea and vomiting; constipation; itchiness; sweating; slow, shallow breathing; lowered pulse; unconsciousness.
- Heroin can disconnect you from reality, leaving you vulnerable.
According to the CDC

• Since 2000, the age-adjusted drug overdose death rate has more than doubled, from 6.2 per 100,000 persons in 2000 to 14.7 per 100,000 in 2014.

• Heroin overdose death rates increased by 26% from 2013 to 2014 and have more than tripled since 2010, from 1.0 per 100,000 in 2010 to 3.4 per 100,000 in 2014

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6450a3.htm
Key facts about heroin addiction:

• More than 9 in 10 people who used heroin also used at least one other drug.
• 45% of people who used heroin were also addicted to prescription opioid painkillers.
• Heroin use more than doubled among young adults ages 18–25 in the past decade.
• According to the DEA, approximately 120 people die each day in the United States of a drug overdose.
Heroin use is part of a larger substance abuse problem.

Nearly all people who used heroin also used at least 1 other drug.

Most used at least 3 other drugs.

**Heroin** is a highly addictive opioid drug with a high risk of overdose and death for users.

People who are addicted to...

- Alcohol: 2x
- Marijuana: 3x
- Cocaine: 15x
- Rx Opioid Painkillers: 40x

...more likely to be addicted to heroin.

Why the Recent Rise?

• Pharma and Doctor shopping regulated
• Many folks addicted to pain pills
• Need to avoid withdrawal
• Turn to the black market
• Eventually turn to injection
HCPH Data: Kevin Strobino, MPH

Death due to Unintentional Overdose, by select drugs; Hamilton County, 2007-16

- Total Unintentional ODs
- Heroin and/or other opioids and/or other synthetic narcotics
- Heroin
- Other synthetic narcotics*
- Other opioids

Graph showing the number of deaths due to different types of drugs from 2007 to 2016.
ED Visits and Emergency Response due to Drug Overdose:
Daily Surveillance Report for March 2, 2017
Data compiled cooperatively by Hamilton County Law Enforcement, Public Health, and Fire/EMS agencies

Estimated Overdose Hospital Visits for March 2:
9

Estimated Fire/EMS and Law Enforcement Overdose Emergency Responses for March 2:
7

Drug Overdoses* by Patient’s ZIP code**;
February 24 - March 2, 2017

<table>
<thead>
<tr>
<th>ZIP Code</th>
<th>Number</th>
<th>Percent***</th>
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<tbody>
<tr>
<td>45205</td>
<td>5</td>
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<tr>
<td>45236</td>
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<td>6%</td>
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<tr>
<td>45211</td>
<td>4</td>
<td>5%</td>
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<tr>
<td>45212</td>
<td>3</td>
<td>4%</td>
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<td>45219</td>
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<td>45230</td>
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<td>45239</td>
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<td>4%</td>
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<td>45241</td>
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<tr>
<td>41042</td>
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<td>2%</td>
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<tr>
<td>45102</td>
<td>2</td>
<td>2%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>82</td>
<td>100%</td>
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Drug Overdoses* by Sex;
February 24 - March 2, 2017

<table>
<thead>
<tr>
<th>Sex</th>
<th>Number</th>
<th>Percent***</th>
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<tbody>
<tr>
<td>Female</td>
<td>33</td>
<td>39%</td>
</tr>
<tr>
<td>Male</td>
<td>51</td>
<td>61%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>84</td>
<td>100%</td>
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Drug Overdoses* by Age;
February 24 - March 2, 2017

<table>
<thead>
<tr>
<th>Age</th>
<th>Number</th>
<th>Percent***</th>
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</thead>
<tbody>
<tr>
<td>Younger than 18</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>18-24</td>
<td>12</td>
<td>15%</td>
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<tr>
<td>25-34</td>
<td>25</td>
<td>30%</td>
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<tr>
<td>35-49</td>
<td>29</td>
<td>35%</td>
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<tr>
<td>50-64</td>
<td>12</td>
<td>15%</td>
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<tr>
<td>65 and Older</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>82</td>
<td>100%</td>
</tr>
</tbody>
</table>

Drugs overdose data are retrieved from the state’s EpiCenter surveillance tool. “Overdose” cases include all ED visits to Hamilton County hospitals in which drugs were indicated as reason for visit. Cases were included in analysis if the case notes for the patient included the term “overdose” or “OD.” Where specified, traumatic injuries due to drugs caused by suicide attempts, adverse reactions to normal medications, or accidental overdose of over-the-counter or common drugs such as Tylenol or insulin were excluded from analysis. ZIP codes refer to the ZIP code of residence of the patient visiting the emergency department (ED). Dates are defined as a 6 a.m. of a day to 5 a.m. of the following day, which more accurately reflects drug use patterns than standard day intervals. For example, January 1st refers to the period of 6 a.m. on January 1st to 6 a.m. on January 2nd.

Data from the EpiCenter surveillance tool is subject to at least 2 limitations. First, case notes in the EpiCenter tool are limited and often do not include full details of ED visit, such as drug used or intent of use. As such, overdose estimates will include not just opioids, but potentially any drug. Second, case notes are recorded at patient intake and may change from a patient’s initial examination to their final diagnosis.

Emergency dispatches refer to Fire/EMS and law enforcement responses to 911 emergency calls related to drug overdose, in which a unit was dispatched. Call notes are reviewed and included/excluded using the same criteria as EpiCenter, adapted for the format of 911 dispatch call logs.

* Demographics reported from hospital & ED visits (red line), and do not include demographic information from 911 dispatches (blue line).
** Ten most frequent ZIP codes displayed; if more than 10 ZIP codes reported in a day, percentages will not add to 100 and ZIP codes beginning “452” are given highest precedence for inclusion over other ZIP codes.
*** Percent among those who do not have missing information for the respective demographic factor.

For any questions, contact: Kevin Strobin, MPH, Epidemiologist at HCPH; 513-946-7520; kevin.strobin@hamilton-co.org
HCPH Surveillance Data: Kevin Strobino, MPH

Home ZIP Code of Drug Overdose Hospital ED Patients;
Hamilton County Hospitals & EDs, Week of February 22 - February 28, 2017

Cincinnati Neighborhoods Legend

Legend
1
2
3
4
5-6

city of CINCINNATI HEALTH DEPARTMENT
Why is heroin today different that prior drug waves in the past?
Overdose

• Not just your run of the mill heroin anymore.
• **Fentanyl** (aka fentanil) is a potent, synthetic opioid pain medication with a rapid onset and short duration of action. 80 times the potency of morphine *(CDC, 2016).*
  – Used right after surgery and as part of anesthesia
• **Carfentanyl**: an analog of the synthetic opioid analgesic fentanyl. It is 10,000 times more potent than morphine, making it among the most potent commercially used opioids.
  – Used on large animals such as elephants. *(CDC, 2016).*
Fentanyl reports in NFLIS, by State
July – December 2014

National Forensic Laboratory Information System

Drug Enforcement Administration, Office of Diversion Control, Drug and Chemical Evaluation Section, Data Analysis Unit
Communicable Disease

• Primary concern for Hepatitis C Virus (HCV) and HIV.
  • IV drug users and individuals with multiple sex partners are at greater risk.

• Transmitted by:
  • Sharing needles and syringes.
  • Sharing cookers, cotton and rinse water.
  • Not using a condom or barrier during sex.
  • You increase your chances of getting HIV/HCV if you have unprotected sex with: Someone who has several sex partners or someone who injects drugs

• Hepatitis C has increased. HIV has been stable.
Hepatitis C

Figure 1: Annual Rate of Hepatitis C Cases Reported for City of Cincinnati Residents by Type, 2011-2016

Annual rate of newly reported infections per 100,000 residents of Cincinnati (based on confirmed or probable cases reported to the City of Cincinnati Health Department).

Data Sources: The number of cases comes from the Ohio Disease Reporting System and the population of the City of Cincinnati comes from the US Census Bureau, single year population estimates.
Communicable Disease: City of Cincinnati

- For acute hepatitis C, the 2016 incidence rate was more five times higher than the 2011-2015 average.

- The 2016 incidence rate for chronic hepatitis C was 24% higher than the 2011 rate and 96% higher than the 2011-2015 average.
Pregnancy and Infant Birth Outcomes

• Universal testing for women delivering in Cincinnati/Hamilton County.
  – Prior to this testing done but based on profiling of women.

• Increase in identified cases of Neonatal Abstinence Syndrome (NAS) – due to screening.

• Not meant to be punitive, but infants can get the care they need if exposed.
DRAMATIC INCREASES IN MATERNAL OPIOID USE AND NEONATAL ABSTINENCE SYNDROME

The use of opioids during pregnancy can result in a drug withdrawal syndrome in newborns called **neonatal abstinence syndrome** (NAS), which causes lengthy and costly hospital stays. According to a new study, an estimated 21,732 babies were born with this syndrome in the United States in 2012, a **5-fold increase** since 2000.

**Every 25 minutes, a baby is born suffering from opioid withdrawal.**

<table>
<thead>
<tr>
<th>NEWBORNS</th>
<th>AVERAGE LENGTH OR COST OF HOSPITAL STAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>WITH NAS</td>
<td>16.9 days</td>
</tr>
<tr>
<td>W/O NAS</td>
<td>2.1 days</td>
</tr>
</tbody>
</table>

**NAS and maternal opioid use on the rise**

*2012 maternal opioid use data not currently available.*

What is being done?
Hamilton County Heroin Coalition
Taskforces – regional
Syringe Exchange Project
Hospital reports on ED overdoses
Naloxone (Narcan) distribution to fire, police, health systems
Medication Assisted Therapy (MAT)
Pregnancy prevention/screening
Funding requests
Daily monitoring and tracking: OD, ED, Death
Social Determinants of Health

• The social determinants of health (SDH) are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. World Health Organization (WHO)
Social determinants of health

Current medical model

Primary Prevention

Safety net programs and secondary prevention

Medical Care and tertiary prevention

Graphic by: Camara Jones, MD, PhD, MPH
Cincinnati Police and Fire

• Struggle with
  – Fatigue
  – Resource availability
  – Role/identity confusion – morale and public perception
  – Legal challenges and changes
  – Exposure to infections
  – Quick Response Teams (QRT) resources
  – Data collaboration and dissemination of findings
Hamilton County Public Health

• Regular monthly meetings
  – Identifying challenges
  – Collaboration on epidemiology

• Healthcare Subcommittee
• Harm Reduction Subcommittee
• Childhood Outreach Subcommittee
• Poison Death Review
• Expansion of Naloxone (Narcan) to additional settings
• EBP is nebulous with this new epidemic –
  – The good: variety of modalities available in Hamilton County (outpatient, MAT, 28 day inpatient, long-term residential, detox)
  – The challenge: the nature of this new addiction trajectory has tasked traditional models
• MAT: buprenorphine, methadone, naltrexone (aka Vivitrol)
  – Variety of responses to each, comfort level of prescribing clinician
• MAT should always include behavioral modification and individual counseling components.
Cincinnati Exchange Project (CEP)

- Successfully exchanges over 15,000 syringes (1:1 ratio) per month
- Referral to treatment (10% linked to treatment) – higher than national average
- Requires sustainability plan –
  - Necessary program to reduce risk for HCV and HIV transmission
  - Necessary to identify pregnant women to reduce NAS potential and further trauma to families
  - Necessary to identify newly infected with HCV and HIV
  - Necessary to link to primary care physician and dental provider
Supporting Behavioral Health in Primary Care

• Cincinnati Health Department Federally Qualified Health Centers (FQHCS)
  – Using HRSA grant dollars to secure social work services from Behavioral Health Partners
    • Greater Cincinnati Behavioral Health (GCBH)
    • Talbert House
    • Children’s Home
  – Consistently screening using:
    • Screening. Brief Intervention. Referral to Treatment (SBIRT) Model in primary care.
    • CRAFFT behavioral health screening tool for anyone under age of 21
    • The Patient Health Questionnaire (PHQ-9) depression screening
  – Provider and administrator training on prescribing practices, SBIRT
Priorities - Reducing Potential Spread of Disease

• Hierarchy of Harm Reduction:
  – Reduce risk of transmission of communicable disease, as to prevent an epidemic.
    • Syringe Exchange reduces threat of disease
  – Reduce incidence of injection drug use
  – Reduce use of street drugs
  – Reduce use of prescribed drugs
  – Increase abstinence from drug use
Medication Assisted Therapy (MAT)

- According to SAMHSA (Substance Abuse and Mental Health Services Administration), Medication-assisted treatment (MAT), including opioid treatment programs (OTPs), combines behavioral therapy and medications to treat substance use disorders.
Types of MAT

- **Opioids**: Methadone (Dolophine®, Methadose®), buprenorphine (Suboxone®, Subutex®, Probuphine®), and naltrexone (Vivitrol®) are used to treat opioid addiction.
- Acting on the same targets in the brain as heroin and morphine, **methadone and buprenorphine suppress withdrawal symptoms and relieve cravings**.
- Naltrexone **blocks the effects of opioids at their receptor sites in the brain** and should be used only in patients who have already been detoxified.
- All medications help patients reduce drug seeking and related criminal behavior and help them become more open to behavioral treatments.

- National Institute on Drug Abuse (NIDA)
Responding to the Heroin Epidemic

PREVENT
People From Starting Heroin
Reduce prescription opioid painkiller abuse.
Improve opioid painkiller prescribing practices and identify high-risk individuals early.

REDUCE
Heroin Addiction
Ensure access to Medication-Assisted Treatment (MAT).
Treat people addicted to heroin or prescription opioid painkillers with MAT which combines the use of medications (methadone, buprenorphine, or naltrexone) with counseling and behavioral therapies.

REVERSE
Heroin Overdose
Expand the use of naloxone.
Use naloxone, a life-saving drug that can reverse the effects of an opioid overdose when administered in time.

SOURCE: CDC Vitalsigns, July 2015
What we still don’t know:

• Long term effect on children living with heroin users
  – Trauma
• Extent of folks dying at home versus ED
  – Real time data unavailable
• How many analogs of Fentanyl exist
• Infectious diseases unidentified
• Extent of Responder fatigue
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