The Addiction Epidemic: Impacts and Opportunities

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Slides courtesy of
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Objectives

01 Describe the changing landscape of the Opioid Mortality Crisis in 2018
02 Provide an Overview of the Evolving Federal and State Strategy to Combat the Crisis
03 Share What We Can Do To Minimize Risk for Opioid Use Disorder, Overdose and Death
The Rapidly Changing Landscape of the Opioid Mortality Crisis in 2018

Each day, more than 1,000 people are treated in emergency departments for not using prescription opioids as directed.
Total USDrug Deaths 2000-2016
On average 142 people die each day

Drug Overdose Deaths in the US
2000-2016  Fentanyl, Fentanyl Analogues and Heroin are Outpacing Precipitation Opioid Deaths

Adapted from CDC• National Center for Health Statistics • National Vital Statistics System as of 8/16/17
Among Opioids, Rates of Drug Overdose Deaths Among Adolescents Aged 15–19 in 2015 Were Highest for Heroin

![Graph showing rates of drug overdose deaths among adolescents aged 15–19 for different opioids](image)

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**Neonatal Abstinence Syndrome (NAS)**

A 2012 study from the University of Michigan and the University of Pittsburgh published in the *Journal of the American Medical Association* analyzed information on 7.4 million discharges from 4,121 hospitals in 44 states, to measure trends and costs associated with NAS over the past decade.

- The study indicated that between 2000 and 2009, the number of mothers using opiates increased from 1.19 to 5.63 per 1,000 hospital births per year.
- Between 2000 and 2009, total hospital charges for NAS cases, adjusted for inflation, are estimated to have increased from $190 million to $720 million.
- Newborns with NAS were 19% more likely than all other hospital births to have low birthweight and 30% more likely to have respiratory complications.
When the Prescription is the Problem
When the Prescription Is the Problem

The amount of opioids prescribed per person was three times higher in 2015 than in 1999.

*In 2010, the rate was 4x higher than 1999

The Risk for Continued Opioid Use Goes Up with Days Supply and Number of Prescriptions in the First Episode of Care

FIGURE 1. One- and 3-year probabilities of continued opioid use among opioid-naïve patients, by number of days’ supply* of the first opioid prescription — United States, 2006–2015

FIGURE 2. One- and 3-year probabilities of continued opioid use among opioid-naïve patients, by number of prescriptions* in the first episode of opioid use — United States, 2006–2015

* Days’ supply of the first prescription is expressed in days (7–10 or 30 days). If a patient had multiple prescriptions on the first day, the prescription with the longest days’ supply was considered the first prescription.

* Number of prescriptions is expressed as 1–15, in increments of one prescription.
Distribution of New Opioid Prescriptions for Number of Days Prescribed – Michigan Medicaid
(Treatment Naïve ≥ 6 Months – Oct 1, 2016 through March 31, 2017)

Goal is to limit prescription opioids for acute pain to 7 days, reevaluate, then limit additional use to prevent tolerance, dependence and addiction


Goal is to decrease prescription rates for long term use, avoid tolerance and shrink supply for diversion

1/3 of the Population Has Some Form of Pain
1/6 of the Population Took an Opioid > 30 days

<table>
<thead>
<tr>
<th>Prescriptions</th>
<th>Medicaid (Actual)</th>
<th>Commercial and No-Insurance (Estimated)</th>
<th>Total (Estimated)</th>
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<tbody>
<tr>
<td>30 Days</td>
<td>402,154</td>
<td>1,206,462</td>
<td>1,608,616</td>
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<tr>
<td>90 Days</td>
<td>115,841</td>
<td>347,523</td>
<td>463,364</td>
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<tr>
<td>365 Days</td>
<td>21,847</td>
<td>65,541</td>
<td>87,388</td>
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</table>
FFSMI Medicaid High MEDD w/ and w/o Benzodiazepines

Goal is to decrease prescription rates for high dose opioids and concurrent use of benzodiazepines

<table>
<thead>
<tr>
<th>August 2017 Data</th>
<th>Triggered Providers</th>
<th>Targeted Unique Members</th>
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<tbody>
<tr>
<td>High Morphine Equivalent Dosing (MED) &gt; 50 MED</td>
<td>1746</td>
<td>1671</td>
</tr>
<tr>
<td>High MED &gt; 90</td>
<td>851</td>
<td>676</td>
</tr>
<tr>
<td>High MED &gt; 120</td>
<td>601</td>
<td>462</td>
</tr>
<tr>
<td>High MED &gt; 50 with Benzodiazepine Use</td>
<td>497</td>
<td>325</td>
</tr>
<tr>
<td>High MED &gt; 90 with Benzodiazepine Use</td>
<td>225</td>
<td>128</td>
</tr>
<tr>
<td>High MED &gt; 120 with Benzodiazepine Use</td>
<td>150</td>
<td>87</td>
</tr>
<tr>
<td>Multiple Controlled Substances from Multiple Doctor and pharmacies</td>
<td>103</td>
<td>20</td>
</tr>
</tbody>
</table>

Magellan Whole Health Rx

Data From Drug Users Responding to the DEA NDTA Survey – 2/3 of Prescription Opioids Were Obtained For Free, Bought or Stolen

- Much of This Use Started for Recreational and Not Medicinal Purposes
About 40% of Frequent Chronic Users and Recent Initiates Still Receive Their Prescription Opioid From a Provider – By Prescription or Stealing It

Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health (NSDUH)

2017 National Drug Threat Assessment

Source: National Drug Threat Survey
When Heroin is the Problem

The National Heroin Threat is the Greatest in the Northeast Corridor, Midatlantic States and the Midwest
2015-16: Heroin Became the Greatest National Threat As the Controlled Prescription Drug (CPD) Threat Diminished

(U) Chart 2. Percentage of NDTs Respondents Reporting the Greatest Drug Threat, 2007 to 2016

Heroin

Source: National Drug Threat Survey

Figure 35. Percentage of NDTs Respondents Reporting High Heroin Availability, 2010-2011, 2013-2017

Source: 2017 National Drug Threat Survey
2016 - Heroin Deaths are Related to Large Corporate-like Success of Drug Cartels

- $300 billion illegal drug business run predominately by 6 Mexican Cartels
- Adoption of the strategy and tactics used by large global corporations such as Walmart, McDonald's, and Coca-Cola.
- Highly sophisticated agricultural, manufacturing, sales, and distribution practices including creating brand value and fine-tuning customer service
- Leverages smart phone technologies and the dark internet

Source: National Center for Health Statistics/Centers for Disease Control
$300B of Heroin Revenues are As High as the Largest Global Corporations

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Name</th>
<th>Industry</th>
<th>Revenue (USD billions)</th>
<th>Revenue growth</th>
<th>Headquarters</th>
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<tbody>
<tr>
<td>1</td>
<td>Walmart</td>
<td>Retail</td>
<td>$482</td>
<td>0.7%</td>
<td>Bentonville, Arkansas</td>
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<tr>
<td>2</td>
<td>State Grid</td>
<td>Electric utility</td>
<td>$330</td>
<td>2.9%</td>
<td>Beijing</td>
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<tr>
<td>3</td>
<td>China National Petroleum</td>
<td>Oil and gas</td>
<td>$299</td>
<td>30.2%</td>
<td>Beijing</td>
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<td>4</td>
<td>Sinopec Group</td>
<td>Oil and gas</td>
<td>$294</td>
<td>34.1%</td>
<td>Beijing</td>
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<tr>
<td>5</td>
<td>Royal Dutch Shell</td>
<td>Oil and gas</td>
<td>$272</td>
<td>36.9%</td>
<td>The Hague</td>
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<tr>
<td>6</td>
<td>Exxon Mobil</td>
<td>Oil and gas</td>
<td>$240</td>
<td>35.6%</td>
<td>Irving, Texas</td>
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<tr>
<td>7</td>
<td>Volkswagen</td>
<td>Automotive</td>
<td>$237</td>
<td>11.9%</td>
<td>Wolfsburg</td>
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<tr>
<td>8</td>
<td>Toyota</td>
<td>Automotive</td>
<td>$237</td>
<td>4.5%</td>
<td>Toyota, Aichi</td>
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<td>9</td>
<td>Apple</td>
<td>Consumer electronic</td>
<td>$234</td>
<td>27.9%</td>
<td>Cupertino</td>
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<tr>
<td>10</td>
<td>BP</td>
<td>Oil and gas</td>
<td>$223</td>
<td>37%</td>
<td>London</td>
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When Fentanyl and Fentanyl Analogues Are the Problem
Six Days of Drug Overdose: Cincinnati

In a six day period (August 19-24, 2016) Cincinnati area experienced 174 opioid overdose reactions.

The culprit responsible was heroin cut with a fentanyl analogue: Carfentanyl.

Carfentanyl is 10,000 times as potent as morphine.

Carfentanyl is used to tranquilize elephants.

When Fentanyl Analogues Are the Problem — Overdose Deaths in Ohio, January–February 2017

The Cause For Many Overdose Deaths Cannot Be Determined When Synthetic Opioids Are Not Measured

Summary
What is already known about this topic?
Illicitly manufactured fentanyl has become a significant contributor to unintentional overdose deaths in the United States.

What is added by this report?
Approximately 90% of unintentional overdose deaths examined in 24 Ohio counties that occurred during January–February 2017 involved fentanyl, fentanyl analogs, or both, whereas heroin was identified in the minority (6%) of cases, with somewhat higher prevalence in Appalachian counties. Fentanyl is commonly appearing in combination with other analogs.

What are the implications for public health practice?
These findings highlight the urgent need to make illicitly manufactured fentanyl testing a part of standard toxicology panels for biological specimens. Because multiple naloxone doses are often required to reverse overdoses from illicitly manufactured fentanyl, assuming that sufficient supplies are provided to first responders and distributed through community overdose prevention programs can mitigate the effects of opioid overdoses.
Six Days of Drug Overdose: Cincinnati

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Carfentanyl Deaths in Michigan

September 15, 2016 - First documented carfentanyl overdose seen in Kent County

October 6, 2016

19 confirmed carfentanyl overdose deaths in Wayne County since July
U-47700 Death in Michigan

October 5, 2016 - First documented U47700 (aka, pink) overdose seen in White Lake, MI

The then legal drug was purchased over the internet and shipped from China

It was designated as a Schedule I restricted drug in November, 2016

Grey Death in GA, FL, OH and WV

May 4, 2017 - Gray Death is a combination of several powerful substances such as Heroin, Fentanyl, Carfentanil and a synthetic opioid called U-47700

The drug has the appearance of a concrete rock. It is chunky and solid, created from compressed and cooked powder

At least 50 people have reportedly overdosed, some dying after their first dose of the drug

What Can Be Done to Decrease Death Rates and Prevent Addiction

The current costs total $249 billion a year, amounting to about 9.5 percent of total U.S. health expenditures.

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Presidents Commission Final Report – November 1, 2017

Understand and Respond to the Clues of Addictive Behavior

1. Sudden change in baseline behavior
2. Loss of Personal Hygiene
3. Loss of interest in school or work
4. Inability to constrain personal spending within available financial resources
5. Sudden changes in typical relationship networks
6. Sudden defiant behavior and unwillingness to discuss changes in behavior
7. Drugs or drug paraphernalia immediately in sight

Know the Signs of Opioid Withdrawal – First 24 Hours

Early symptoms typically begin in the first 24 hours after you stop using the drug, and they include:

- muscle aches
- restlessness
- anxiety
- lacrimation (eyes tearing up)
- runny nose
- excessive sweating
- inability to sleep
- yawning very often
Know the Signs of Opioid Withdrawal – Days 2-4

Later symptoms, which can be more intense, begin after the first day or so. They include:
- diarrhea
- abdominal cramping
- goose bumps on the skin
- nausea and vomiting
- dilated pupils and possibly blurry vision
- rapid heartbeat
- high blood pressure

Although very unpleasant and painful, symptoms usually begin to improve within 72 hours, and within a week there is a significant decrease in the acute symptoms of opiate withdrawal.

Other Non-opioid Pain Management Strategies Including Cross-functional Team Approaches
1. Osteopathic and Chiropractic Manual Medicine
2. Epidural and Facet Blocks (for spinal pain)
3. Radiofrequency Ablation
4. Complex Regional Pain Syndrome Techniques
5. Meditation and Yoga Techniques
What Else Can You Do to Prevent Addiction, Overdose and Death – Starting On Monday

1. Don’t Abandon Patients with Life-altering Pain or Force Patients Taking Long Term Opioids to the Street
2. Stay abreast with the constantly evolving facts that uncover the root causes of the Opioid Epidemic
3. Take a Team-based approach and Don’t Go it Alone – Surgery, Rehabilitation Medicine, Pain Management, Addiction Management, Behavioral Health
4. Remember Opioid Tolerance Starts Somewhere Between 5-7 days, so either avoid opioids whenever possible and stop them ASAP after starting them
5. Start Conversations at the First Day of Prescribing Opioids and Continue Them until they are stopped
6. Utilize Patient Contracts That Include Meaningful Informed Consent
7. Monitor and Screen for Tolerance, Dependence, Addiction and Risk for Overdose and Death
8. Learn How to Appropriately Taper Existing Opioids and Determine If An Underlying Opioid Use Disorder (OUD) Exists
9. Use MAPS Frequently To Detect Patterns of Misuse or Abuse and Ensure Both Coordination & Continuity of Care with Other Providers
10. Use Urine Drug Screens to Check for Compliance and Potential I illicit Drug Use
11. Treat or Refer Early
12. Write for naloxone to patients who are at high risk for overdose
13. Obtain a DEA waiver to help stabilize patients with Opioid Use Disorder (Regardless of the Reason)
14. Get Involved with Your Community to Stop Cultural Expectations That Encourage Illicit Drug Use
15. Work Through Your Professional Societies and Personally Talk to Your Legislators and Regulators to Share Your Experiences and What They Can Do to Help You

Summary

1. The root causes for the opioid epidemic are complex and multifactorial
2. It is imperative to shrink supply and demand for both prescription opioids and heroin/fentanyl analogues
3. A well organized Michigan-wide and nation-wide plan is necessary to avoid abandoning patients with “true” pain and also not send people to the street for heroin and synthetic opioids
4. Focusing only on prescription opioids without simultaneously addressing “heroin and fentanyl trafficking” will dramatically shrink probability of success
5. Most of all it will “take a village” – “every village” here in Michigan
6. Health professionals are well positioned to help lead the way
Additional Themes

Understanding The Neurological Basis and Social Consequences of Opioid Addiction
Addiction Is A Neurodegenerative and Neurocognitive Disorder From Prolonged Exposure of External Chemicals on the Brain

Loss of Neural Dendrites (Prolonged Drug Exposure)  Normal Dendrites  Loss of Brain Function Including the Frontal Lobe

Biological and Social Consequences of Ongoing Addiction

- Prolonged exposure leading to downregulated structure and function (decreased neurotransmitters, receptors and structural proteins)
- Loss of self control and executive function, ie, judgement
- Inability to calculate risk versus benefit
- Severe uncontrollable drug seeking to satisfy craving and avert withdrawal symptoms
- Loss of Family, Job and Shelter
- Petty Theft Leading to Larger Crimes, Arrest and Incarceration
- Accidental overdose, respiratory arrest and death
Neonatal Abstinence Syndrome (NAS)

• Drug and alcohol use during pregnancy can lead to many health problems in the baby besides NAS, including --
  • Birth defects
  • Low birth weight
  • Premature birth
  • Small head circumference
  • Sudden infant death syndrome (SIDS)
  • Problems with development and behavior

• Neonatal abstinence syndrome treatment can last from 1 week to 6 months

• Even after medical treatment for NAS is over and babies leave the hospital, they may need continued treatment for weeks or months

Neonatal Abstinence Syndrome (NAS)

• Generally, an infant going through withdrawal has a distinctive cry.
  • It can be described as being high-pitched, non-stop and shrill.

• A newborn withdrawing from drugs or alcohol have neurological problems.
  • Fever, increased muscle tone and have convulsions.
  • Seizures, increased Moro reflex, tremors, irritability, and disturbed sleep patterns can be observed.
  • The sucking reflex can be incessant and uncoordinated.

• Respiratory symptoms of withdrawal include tachypnea, apnea, nasal congestion, nasal flaring, blotchy skin, and yawning.

• Withdrawal can produce gastro-intestinal symptoms such as poor appetite, regurgitation, projectile vomiting and diarrhea.

• Babies of mothers who use other addictive drugs (e.g. nicotine, amphetamines, cocaine, marijuana) may have long-term problems.
What We Know About Drug Addiction on Parents and its Impact on Young Children

Envision . . .

...the impact of an 8-year witnessing the death of a parent due to an opioid overdose.

...the impact of a 3-year dying from an overdose after taking several opioid pain medication from an open bottle.

...the impact on the nervous system of being born addicted to opioids at birth.
Adverse Childhood Events (ACES): Common Challenges for Families of Young Children

1. Stressful or traumatic events, including abuse and neglect
2. May include household dysfunction, including substance use disorders or witnessing domestic violence
3. Strongly related to the development/prevalence of a wide range of health problems across a person’s lifespan, including those associated with substance misuse

The Relationship Between ACEs and a Variety of Known Risk Factors for Disease, Disability, and Early Mortality

- The Division of Violence Prevention at the Centers for Disease Control and Prevention (CDC), in partnership with Kaiser Permanente, conducted a landmark ACE study from 1995 to 1997 with more than 17,000 participants. The study found:
  - ACEs are common
  - ACEs cluster
  - ACEs have a dose-response relationship with many health problems
  - Furthermore, many problems related to ACEs tend to be comorbid or co-occurring

Adverse Childhood Experiences (ACEs) Include

- Physical abuse
- Sexual abuse
- Emotional abuse
- Physical neglect
- Emotional neglect
- Intimate partner violence
- Mother treated violently
- Substance misuse within household
- Household mental illness
- Parental separation or divorce
- Incarcerated household member

ACEs Were Found To Increase the Risk For:

- Alcoholism and alcohol abuse
- Chronic obstructive pulmonary disease (COPD)
- Depression
- Fetal death
- Health-related quality of life
- Illicit drug use
- Ischemic heart disease (IHD)
- Liver disease
- Risk for intimate partner violence
- Multiple sexual partners

- Sexually transmitted diseases (STDs)
- Smoking
- Suicide attempts
- Unintended pregnancies
- Early initiation of smoking
- Early initiation of sexual activity
- Adolescent pregnancy
- Lung cancer


The Cyclical Nature of Aberrant Behaviors and ACEs

Landmark study of 17,000 participants from 1995-1997 by the Centers for Disease Control in partnership with Kaiser Permanente

Aberrant Behaviors Increase Risk for ACEs
- Physical abuse
- Sexual abuse
- Emotional abuse
- Physical neglect
- Emotional neglect
- Intimate partner violence
- Mother treated violently
- Substance misuse within household
- Household mental illness
- Parental separation or divorce
- Incarcerated household member

Findings: A person's ACEs score has a strong relationship to numerous health, social and behavioral problems across a lifespan, including substance use disorders

ACEs Increase Risk for Aberrant Behaviors
- Alcoholism and alcohol abuse
- Chronic obstructive pulmonary disease (COPD)
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- Fetal death
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Next MQIC Guideline – When and How to Taper Opioids