Indiana University Bloomington

Indiana CTSI Retreat 2018
Medical Science Solutions to Indiana’s Opioid Crisis

Wednesday, April 25, 2018
Keynote Lecture 1 “Where Indiana Stands: NAS and the Opioid Epidemic”

Kristina Box, M.D.
Where Indiana Stands: NAS and the Opioid Epidemic

Indiana Clinical and Translational Sciences Institute

Kris Box, MD, FACOG
State Health Commissioner
April 25, 2018
ISDH Priorities for 2018

- Opioid epidemic
- Infant mortality
- Obesity and related health issues
- Adult smoking
Drug Poisoning Death Rates by Year
Indiana and U.S., 2004-2016

Age-Adjusted Drug Poisoning Death Rate Per 100,000

Source: CDC WISQARS, Prepared by ISDH Division of Trauma and Injury Prevention
Drug Overdose Death Rates, Indiana, 2012-2016

Source: ISDH Stats Explorer
Non-fatal ER Visits due to Opioid Overdose

2012

2016

Source: ISDH Stats Explorer
Percent Change in Leading Cause of Injury Death in Indiana, 1999-2016

- Suicide: 64.70%
- Homicide: 24.30%
- Unintentional Motor-Vehicle Accident: -14.40%
- Unintentional Fall: 87.60%
- Unintentional Poisoning: 1038.70%

Source: CDC WISQARS, Prepared by ISDH Division of Trauma and Injury Prevention
Drug Deaths Involving Heroin by Year, Indiana, 2004-2016

Source: Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team
Prepared by: ISDH Division of Trauma and Injury Prevention
Drug Poisoning Deaths by Age Group
Indiana, 2016

Number of Deaths

Source: CDC WISQARS, Prepared by ISDH Division of Trauma and Injury Prevention
Ongoing State Efforts

- Just one of many state agencies collaborating
- ISDH HIV division provided funding to Fayette Regional health system for additional treatment beds for people with HIV and substance use disorder
- ISDH Stats Explorer makes data more accessible: https://gis.in.gov/apps/isdh/meta/stats_layers.htm
- Fresh Start treatment program
- Renewed statewide standing order for naloxone
- www.optIN.in.gov (naloxone locator)
- Naloxone grants to local health departments and first responders
- Statewide 211
- Extension for Community Healthcare Outcomes (ECHO)
Ongoing ISDH Efforts

- Syndromic surveillance for overdoses: ISDH has been sending out overdose alerts to local health departments and hospitals since the fall.
- Working with 6 local health departments to develop an overdose response toolkit that can be utilized by other counties.
- Promoting the CDC prescribing guidelines, as well as Indiana prescribing guidelines. ISDH, ISMA and IHA are hosting regular opioid-related webcasts.
- The ISDH Division of Trauma and Injury Prevention is helping to financially support integration of the state’s PDMP, INSPECT, with electronic medical records around the state.
- Coroner reporting law requires standardizes, comprehensive toxicology screen on suspected fatal overdose cases.
Addiction Inpatient Units and Residential Facilities
New or Expanded Points of Access
Infant Mortality Defined

The death of a baby before his/her first birthday

The Infant Mortality Rate (IMR) is an estimate of the number of infant deaths for every 1,000 live births

Large disparities in infant mortality in Indiana and the United States exist, especially among race and ethnicity

Infant Mortality is the #1 indicator of health status in the world
Infant Mortality in Indiana

- 623 Indiana babies died before their 1st birthday in 2016
  - More than 50 babies EVERY month
  - Nearly 12 babies EVERY week
- Nearly 3,000 infant lives lost in the last 5 years
  - Nearly 42 school buses at maximum capacity

Source: Indiana State Department of Health, Division of Maternal and Child Health [April 28, 2017]
Indiana Original Source: Indiana State Department of Health, Epidemiology Resource Center, Data Analysis Team
Infant Mortality Rates
Indiana, U.S. & Healthy People 2020 Goal
2009 - 2016

Source: Indiana State Department of Health, Maternal & Child Health Epidemiology Division [January 5, 2017]
United States Original: Centers for Disease Control and Prevention National Center for Health Statistics
Indiana Original Source: Indiana State Department of Health, PHPC, ERC, Data Analysis Team
Indiana Infant Mortality Rates by Race
2006 - 2016

Source: Indiana State Department of Health, Maternal & Child Health Epidemiology Division [January 5, 2018]
Indiana Original Source: Indiana State Department of Health, PHPC, ERC, Data Analysis Team
Factors Contributing to Infant Mortality

- Obesity
  - Obese=25% chance prematurity
  - Morbidly Obese= 33% prematurity
  - Indiana is 10th most obese state in US

- Smoking
  - 13.4% pregnant mothers smoke (2 x US avg)

- Limited prenatal care
  - Only 69.4% pregnant IN women receive PNC in 1st trimester (2016)

- Limited breastfeeding
- Elective deliveries before 39 weeks gestation
- Delivering at risk-appropriate facilities
- Unsafe sleep (13.6% of deaths 2016)
Neonatal Abstinence Syndrome 
Definition

A drug withdrawal syndrome that presents in newborns after birth when the transfer of harmful substances from the mother to the fetus abruptly stops at the time of delivery.

NAS most frequently is a result of opioid use in the mother but may also occur as a result of exposure to benzodiazepines and alcohol.
Indiana Legislation to Address Drug-Exposed Newborns

The Indiana General Assembly requires the following:

- The development of the appropriate standard clinical definition of Neonatal Abstinence Syndrome (NAS).
- The development of a uniform process of identifying NAS.
- Determine the estimated time and resources needed to educate hospital personnel in implementing an appropriate and uniform process for identifying NAS.
Indiana Legislation (continued)

- The identification of standard reporting and trending NAS diagnoses and related data.

- The identification of whether payment methodologies for identifying NAS and the reporting of NAS data are currently available or needed.

- Permissive language for the ISDH to conduct hospital pilots to determine the prevalence of perinatal drug exposure.
Neonatal Abstinence Syndrome Diagnosis

Babies who are:

- Symptomatic
- Have two or three consecutive Modified Finnegan scores equal to or greater than a total of 24
- Have one of the following:
  - A positive toxicology test
  - A maternal history with a positive verbal screen or toxicology test
Prevalence of NAS in the United States

The incidence of NAS has increased significantly:
- 2000 rate per 1,000 births = 1.2
- 2009 rate per 1,000 births = 3.4

Maternal opiate use has increased even more dramatically:
- 2000 rate per 1,000 births = 1.19
- 2009 rate per 1,000 births = 5.63

The cost to care for infants diagnosed with NAS:
- 2000 = $190 million
- 2009 = $720 million

Indiana NAS Pilot

- Launched in 2016
- Expanded in 2017
- Nearly 3,000 umbilical cords tested
- Goal is to better understand prevalence of babies born drug-exposed
2016 Testing Results

Represents 3 hospitals over 12 months

<table>
<thead>
<tr>
<th>Drug</th>
<th>Total</th>
<th>Positive</th>
<th>Indiana Percentage Positive</th>
<th>National Percentage Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMPHETAMINES</td>
<td>635</td>
<td>18</td>
<td>2.83%</td>
<td>4.4%</td>
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<tr>
<td>COCAINES</td>
<td>635</td>
<td>20</td>
<td>3.15%</td>
<td>1.9%</td>
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<td>OPIATES</td>
<td>635</td>
<td>140</td>
<td>22.05%</td>
<td>9%</td>
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<td>CANNABINOIDS</td>
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<td>102</td>
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<td>19.4%</td>
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<td>BARBITURATES</td>
<td>635</td>
<td>8</td>
<td>1.26%</td>
<td>1.8%</td>
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<td>METHADONE</td>
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<td>10</td>
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<td>BENZODIAZEPINE</td>
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<td>OXYCODONE</td>
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<tr>
<td>BUPRENORPHINE</td>
<td>635</td>
<td>13</td>
<td>2.05%</td>
<td>8.6%</td>
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</table>
Hospital Pilot Phase Two

- Includes 29 of Indiana’s 89 birthing hospitals
- Began in January 2017
### 2017 Positivity Testing Results

21 hospitals
2,938 Cords Tested

<table>
<thead>
<tr>
<th>Drug</th>
<th>Total Positive</th>
<th>Indiana Percentage Positive</th>
<th>National Percentage Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMPHETAMINES</td>
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<td>2.32%</td>
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<td>COCAINES</td>
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<td>OPIATES</td>
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<td>CANNABINOIDS</td>
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<tr>
<td>BARBITURATES</td>
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<td>METHADONE</td>
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<tr>
<td>BENZODIAZEPINE</td>
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<tr>
<td>ETHYL GLUCURONIDE</td>
<td>28</td>
<td>0.94%</td>
<td>2.4%</td>
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Number of Substances Present in Positive Cords

- One Substance: 79.20%
- Two Substances: 15.70%
- Three Substances: 4.30%
- Four Substances: 0.90%
Risks of Substance Misuse

- Birth defects
- Problems with central nervous system
- Low birth weight
- Preterm delivery (< 37 weeks)
- Slow growth and development
- Fetal Alcohol Syndrome (FAS)
- Learning disabilities
- Heart problems

http://pediatrics.aappublications.org/content/pediatrics/131/3/e1009.full.pdf
http://americanpregnancy.org/pregnancy-health-illegal-drugs-during-pregnancy/
Public Health Prevention and Intervention Strategies

- Multidisciplinary, systematic and coordinated approach in the care of the mother-baby dyad throughout pregnancy, delivery, discharge and beyond

- NAS prevention should be focused on the life course, not only the neonatal period and should be based on the public health approach of primary, secondary and tertiary prevention

- Punitive approaches have been found to be ineffective and may lead to women avoiding medical care

Source: CDC, MMWR/March 10, 2017, Patrick et al. Pediatrics. 2015
Public Health Prevention and Intervention Strategies

Primary Prevention:
- Responsible opioid prescribing and access to preconception and family planning services

Secondary Prevention:
- Provision of treatment for pregnant women with opioid use disorder

Tertiary Prevention:
- Consistency in the identification of infants and standardized treatment and approach to care

CDC, MMWR/March 10, 2017, Patrick et al. Pediatrics. 2015
Infant Mortality Rates
Midwest, 2015

Rate per 1,000 live births

<table>
<thead>
<tr>
<th>State</th>
<th>Rate</th>
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<tbody>
<tr>
<td>Iowa</td>
<td>4.2</td>
</tr>
<tr>
<td>Minnesota</td>
<td>5.2</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>5.8</td>
</tr>
<tr>
<td>Illinois</td>
<td>6.0</td>
</tr>
<tr>
<td>Missouri</td>
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</tr>
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<td>Michigan</td>
<td>6.6</td>
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<tr>
<td>Ohio</td>
<td>7.2</td>
</tr>
<tr>
<td>Indiana</td>
<td>7.3</td>
</tr>
</tbody>
</table>
Infant Mortality: Indiana’s Plan

- Governor Holcomb’s charge: Have lowest rate in Midwest by 2024
- How we get there:
  - Obstetrical care/coordination
    - Nurse Family Partnership
    - Paramedicine
    - Community Health Workers
  - LARC
  - Progesterone
  - Safe Sleep education
    - Cribs for Kids
    - Direct On-Scene Education (DOSE) training for first responders
  - Perinatal levels of care
  - Improve health of moms by decreasing obesity & smoking
  - Safety PIN grants
Indiana’s Plan (continued)

- Statewide Infant Mortality Campaign
  - Labor of Love (laboroflove.in.gov)
  - Annual Labor of Love Summit
  - Liv mobile application (launched Nov. 15, 2017)
- WIC app and EBT = make WIC experience easier
- Cribs for Kids program – more than 13,000 free cribs since October 2015
- MOMS Helpline (1-844-MCH-MOMS)
- Working to expand Baby and Me-Tobacco Free programs
- Indiana Tobacco Quitline – additional supports for pregnant women
- Perinatal Levels of Care
Each pair of baby booties represents an Indiana child who died before reaching age one.
Your Turn

What do I need to know from you?