Drug Overdose Update & Response: Combatting Opioid Overdose
Overview

• The Problem
  - Overdose in North Carolina (and a little nationally)
  - Other associated health threats

• PDAAC-NC’s Response Coordination

• Surveillance Data Sources & Systems
Opioid Related Deaths

Public Health primarily works on the top 3 layers; coordinates across all layers.

Deaths
Emergency care
EMS, Hospital

Disease Spread
HepC, HIV-AIDS, STD’s

Behavior Health Services
Substance Abuse treatment, Suicide

Law Enforcement, Criminal Justice, Corrections

Social Services
family destruction, foster care services

Increased demand on public services across the spectrum
Medical Examiner, EMS, crime, Medicaid charges, foster care, dependence/addiction treatment, employment, education

Injury Prevention
Focuses on top 2 layers

Acute injurious exposure to Opioids are poisonings. Poisonings are injuries.

- Epidemiology
- Convene Partners
- Evidence-based strategies and policy.

Injury Prevention
Focuses on top 2 layers

Acute injurious exposure to Opioids are poisonings. Poisonings are injuries.

- Epidemiology
- Convene Partners
- Evidence-based strategies and policy.

*Per 100,000, age-adjusted to the 2000 U.S. Standard Population

α - Transition from ICD-8 to ICD-9
β - Transition from ICD-9 to ICD-10

1989 – Pain added as 5th Vital Sign

Source: Death files, 1968-2015, CDC WONDER
Analysis by Injury Epidemiology and Surveillance Unit
Unintentional Medication & Drug Deaths by County
North Carolina Residents, 2011-2015*

$1.8 BILLION
total combined costs for 2015 alone

Data Source: State Center for Health Statistics, Death Certificate Data (Unintentional medication or drug (X40-X44).
Does not include non-resident or out of state resident deaths.
Demographics of Medication or Drug Overdose Deaths
All intents, North Carolina Residents, 2015


The data provided here are part of the Vital Registry System of the State Center for Health Statistics and have been used to historically track and monitor the drug overdose burden in NC using ICD10 codes. The definitive data on deaths come from the NC Office of the Chief Medical Examiner (OCME). For the most recent data and data on specific drugs, please contact at OCME at http://www.ocme.dhhs.nc.gov/annreport/index.shtml.

Analysis by Injury Epidemiology and Surveillance Unit
Unintentional Rx and Illicit Opioid Deaths
NC Residents, 1999 - 2015

Unintentional medication/drug (X40-X44) with specific T-codes by drug type.
Rx medication=T40.2 or T40.3 and Illicit Drug=T40.1 or T40.4.
Analysis by Injury Epidemiology and Surveillance Unit
National Rates of Opioid Prescribing and Rates of Opioid Death

Sharp rate increases in opioid prescribing
Sharp rate increases in prescription opioid deaths

Opioid Sales (kg per 10k)
Rx Opioid Deaths (per 100k)

Source: CDC, Len Paulozzi
Rates of Unintentional/Undetermined Prescription Opioid Overdose Deaths & Outpatient Opioid Analgesic Prescriptions Dispensed

Analysis: Injury and Epidemiology Surveillance Unit
Overdose: (X40-X44 & Y10-Y14) and prescription opioid T-codes

Average mortality rate: 6.4 per 100,000 persons
Average dispensing rate: 82.9 Rx per 100 persons
Heroin, Fentanyl, Fentanyl Analogues Detected in Toxicology Testing
Office of Chief Medical Examiner (OCME) Investigated Deaths, 2011-2016*

2016 – Fentanyl & Fentanyl Analogues detected in a larger proportion of death investigations by the OCME.

Data Source: N.C. Office of the Chief Medical Examiner (OCME) and the OCME Toxicology Laboratory.
*Data for 2016 is considered provisional and is current as of Feb. 2017.
**Fentanyl analogues include: Acetyl fentanyl, Butyrlfentanyl, Furanylfentanyl, Fluorofentanyl, Acrylfentanyl, Fluoroisobutrylfentanyl, Beta-Hydroxythiofentanyl, Carfentanil. The presence of a drug does not necessarily indicate that it was attributed to the cause of death.
2015: Reported Law Enforcement Fentanyl Encounters

Source: CDC, 2017
What replaced the neighborhood ice cream truck...

SUBURBS

OD-USA

OPIOIDS

Heroin

©DAVE GRANLUND.COM
POLITICAL CARTOONS.COM
Drug Overdose Deaths & Emergency Department Visits, NC 2015

The average NC county has about **one overdose death per month** but just under **one overdose ED visit per day**.

Overdose E.D. visits dwarf overdose deaths

20,371 Emergency Department visits

1,305 deaths

Data Sources: NC DETECT (statewide ED data), N.C. Division of Public Health and UNC Carolina Center for Health Informatics (CCHI); EMSpic- UNC Emergency Medicine Department, N.C. Office of Emergency Medical Services (OEMS)
**ICD9 to ICD10 coding changed in October 2015. Impact on surveillance is unclear. Some ED visits are coded as substance abuse rather than overdose and these counts are likely undercounted from the above. Naloxone administration alone by EMS does not necessarily equate to an opioid overdose.
Self-reported Lifetime Use of Drugs among High School Students

North Carolina HS Students, 2013 & 2015

Almost 20% of North Carolina High School Students have reported using prescription opioids recreationally.

Source: NC Youth Risk Behavioral Survey (YRBS), 2013-2015
Analysis: Injury Epidemiology and Surveillance Unit
Other Health Threats
Hospitalization Rates Associated with Drug Withdrawal Syndrome in Newborns
North Carolina Residents, 2004-2015*

800%+ increase - 2004 to 2015*

N = 1,252 in 2015

*2014 data structure changed to include up to 95 diagnosis codes. It is unclear the overall impact of this change.
**2015 ICD 9 CM coding system transitioned to ICD10 CM. Impact unclear.

NOTE: 2014 Hospital Discharge datafile structure significantly changed. Impact on surveillance unknown
Primary Payment Type Associated with Drug Withdrawal Syndrome in Newborns per 100,000 Live Births, North Carolina, 2015

$51,152,130 - Total charges* in 2015
$40,856 - Average charge* 2015

*Charges do not reflect what the care actually cost the hospital or what the hospital received in payment. Charges typically negotiated with insurance providers.

Source: N.C. State Center for Health Statistics, Hospital Discharge Dataset, 2015
NOTE: 2015 data coding system (ICD9CM to ICD10 CM) changed. Impact on surveillance unknown
Increase in Acute Hepatitis C Cases
North Carolina, 2000–2015

2009 to 2015, Reported Hep C cases increased more than 10–15x higher than number of reported cases

Heart valve infections associated with injection drug use increased 13.5 times.

Sepsis (bloodstream infections) increased 4 times.
PDAAC and Prevention Efforts
North Carolina Prescription Drug Abuse Advisory Committee

About Us · Meetings · Agendas & Presentations · Workgroups · Strategic Plan · Contact

Upcoming Events

- Opioid Misuse and Overdose Prevention Summit, June 27 - 28, 2017
  - Register here for the upcoming summit!
- The next PDAAC meeting will be held in September. Please join us at the Opioid Misuse and Overdose Prevention Summit!

Quick Links

- Naloxone Saves
- North Carolina Safer Syringe Initiative
- North Carolina Injury and Violence Prevention Strategic Plan, 2015 - 2020

Resource website: https://sites.google.com/view/ncpdaac
Prescription Drug Abuse Advisory Committee (PDAAC)
Mandated Coordination of State Response to the Opioid Epidemic

2015 Session Law 241 mandates
State strategic plan • DHHS creates PDAAC • Annual report to General Assembly

- Prevention and Public Awareness
- Intervention and Treatment
- Professional Training and Coordination
- Core Data

Group A: Community
Group B: Law Enforcement

- Meets quarterly
- 5 work groups & action plans
- 150+ participate
- State agencies, partner organizations; anyone working on the opioid epidemic
Prevention Efforts & Strategies
Drug Take Back in North Carolina
Since 2010

- Collected 53 million pills at 1,600 events
- 150+ Permanent Take-Back Locations

Largest Drug Take Back Program in the Country, National Model

NCMJ, NC’s Operation Medicine Drop, Fleming et al, Jan-Feb 2016

2013 North Carolina
Good Samaritan/Naloxone Access Law

Since August 1, 2013

39,451 overdose rescue kits distributed
6,268 confirmed overdose reversals

www.nchrc.org/programs-and-services
Opioid Overdose Reversals with Naloxone by County
Reported by NC Harm Reduction Coalition
8/1/2013 - 12/31/2016

16 reversals in an unknown location in North Carolina and 60 reversals using NCHRC kits in other states reported to NCHRC.

Source: North Carolina Harm Reduction Coalition
Counties with Law Enforcement Carrying Naloxone
As of March 31, 2017 (64 Counties, 145 Agencies)

Source: North Carolina Harm Reduction Coalition, April 2017
Analysis: Injury Epidemiology and Surveillance Unit
Number of Opioid Overdose Reversals with Naloxone Reported by NC Law Enforcement by Date
1/1/2015 - 3/31/2017 (513 total reversals reported)

Source: North Carolina Harm Reduction Coalition, April 2017
Analysis: Injury Epidemiology and Surveillance Unit
Statewide Standing Order for Naloxone

Signed by State Health Director in June 2016

Authorizes any pharmacist practicing in the state and licensed by the N.C. Board of Pharmacy to dispense naloxone to:

- A person at risk of experiencing an opiate-related overdose
- A family member or friend of a person at risk of experiencing an opiate-related overdose.
- A person in the position to assist a person at risk of experiencing an opiate-related overdose.
NC’s Statewide Standing Order for Naloxone

June 20, 2016 – Law authorizes state health director to issue statewide standing order for naloxone

1,362 Pharmacies dispensing Naloxone under a standing order

www.NaloxoneSaves.org
NC Syringe Exchange Programs (SEP)

- **July 11, 2016** - Legalized in NC

- Any governmental or nongovernmental organization “that promotes scientifically proven ways of mitigating health risks associated with drug use and other high risk behaviors” can start a SEP

- **Legal Protections**
  
  “No employee, volunteer or participant of the syringe exchange can be charged with possession of syringes or other injection supplies, or with residual amounts of controlled substances in them, obtained from or returned to a syringe exchange”
 Counties with Syringe Exchange Programs (SEP) as of April 4, 2017

20 active SEP’s covering 19 counties

Source: North Carolina Division of Public Health, April 2017
Analysis: Injury Epidemiology and Surveillance Unit
4TH North Carolina Summit on the Opioid Epidemic since 2014

OpioidPreventionSummit.org

Planning & Sponsorship: DMH/DD/SAS and DPH
Surveillance: Data Sources and Systems
Current Surveillance: Data Sources and Systems

- Death Certificate data
- Medical Examiner data
- Controlled Substances Reporting System (CSRS)
- Hospital discharge data
- Emergency Department data
  - NC DETECT
    - Treatment admissions
    - Self-report methods
    - Emergency medical system (EMS/PreMIS)

- Naloxone
  - N.C. Harm Reduction Coalition
    - Project Lazarus
    - County reports
<table>
<thead>
<tr>
<th>CAUSE OF DEATH (See instructions and examples)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMEDIATE CAUSE (Final disease or condition resulting in death)</td>
</tr>
<tr>
<td>a. ANOXIA BRAIN INJURY</td>
</tr>
<tr>
<td>Due to (or as a consequence of):</td>
</tr>
<tr>
<td>b. SECONDARY TO INGESTION OF METHADONE</td>
</tr>
<tr>
<td>Due to (or as a consequence of):</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART II Enter other significant conditions contributing to death but not resulting in the underlying cause given in Part I</th>
</tr>
</thead>
<tbody>
<tr>
<td>35. DID TOBACCO USE CONTRIBUTE TO DEATH?</td>
</tr>
<tr>
<td>36. IF FEMALE:</td>
</tr>
<tr>
<td>37. IF PREGNANT:</td>
</tr>
<tr>
<td>38. DATE OF INJURY (Mo/Day/yr)(Spell Month)</td>
</tr>
<tr>
<td>39. TIME OF INJURY</td>
</tr>
<tr>
<td>40. PLACE OF INJURY (e.g., Decedent’s home, construction site, restaurant, wooded area)</td>
</tr>
<tr>
<td>41. INJURY AT WORK?</td>
</tr>
<tr>
<td>42. LOCATION OF INJURY:</td>
</tr>
<tr>
<td>43. DESCRIBE HOW INJURY OCCURRED</td>
</tr>
<tr>
<td>44. TRANSPORTATION INJURY, SPECIFY</td>
</tr>
<tr>
<td>45. OTHER INJURY (Specify):</td>
</tr>
</tbody>
</table>

**Notes:**
- G93.1 Anoxic brain damage, NEC
- T40.3 Methadone
- X42 Accidental poisoning and exposure to narcotics and psychodysleptics, NEC
- T50.9 Other and unspecified drug
Office of the Chief Medical Examiner (OCME)

• De-centralized state-wide medical examiner system
  – Oversight by OCME
  – Deaths that are sudden and unexpected or due to external means or violence are investigated by a medical professional, the county medical examiner
  – **Complete autopsies are performed for all suspected overdose deaths**

• Nationally accredited toxicology laboratory
  – Serves all 100 counties
  – Comprehensive drug and poison analysis
  – Pathologists review toxicology-related deaths
NC Controlled Substance Reporting System (NC’s PMP)
CSRS

- Prescribers
  - Out-of-State Prescribers

- Dispensers
  - Pharmacies

- Law Enforcement

- Department of Health and Human Services
  - Researchers
  - Federal Stake Holders

- Licensing Boards

- Professional Societies
  - Health Care Systems

- Community Coalitions
  - Stake Holders

NC CSRS
Controlled Substances Reporting System (CSRS)

- North Carolina’s statewide prescription drug monitoring program (PDMP)
- Established by NC law to improve the state’s ability to identify people who abuse and misuse prescription drugs classified as Schedule II-V (drugs with abuse potential)
- Assists clinicians to determine if or how to prescribe an opioid to patients using other controlled substances
- Assists clinicians in identifying and referring for treatment patients misusing controlled substances

Photo used under Creative Commons from bunkejer4
CSRS Web Data Overview

- Prescription Rates by County (2011-2016)
  - Benzo
  - Opioid
  - Opioid (MME)
  - Stimulant

- CSRS Utilization by County (August-December 2016)
  - Delegate Account
  - Pharmacist
  - Prescriber

- Data available at the county level
- Available less than six months on web, very new and subject to change as system improves

Source: CSRS- Division of Mental Health, Developmental Disability and Substance Abuse Services (MH/DD/SAS)
Prescription Rates by County

<table>
<thead>
<tr>
<th>County No.</th>
<th>Population</th>
<th>Average MME</th>
<th>Pills Per Resident</th>
<th>Rx Per Resident</th>
<th>Total Pills</th>
<th>Total Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alamance</td>
<td>158,276</td>
<td>50.4</td>
<td>64.6</td>
<td>0.916</td>
<td>10,224,591</td>
<td>145,028</td>
</tr>
<tr>
<td>Alexander</td>
<td>37,326</td>
<td>51.6</td>
<td>99.7</td>
<td>1.301</td>
<td>3,721,125</td>
<td>48,571</td>
</tr>
<tr>
<td>Alleghany</td>
<td>10,837</td>
<td>53.6</td>
<td>73.6</td>
<td>0.885</td>
<td>737,927</td>
<td>9,307</td>
</tr>
<tr>
<td>Anson</td>
<td>25,759</td>
<td>40.5</td>
<td>66.3</td>
<td>0.997</td>
<td>1,707,783</td>
<td>25,687</td>
</tr>
</tbody>
</table>

Source: CSRS- Division of Mental Health, Developmental Disability and Substance Abuse Services (MH/DD/SAS)
Source: CSRS- Division of Mental Health, Developmental Disability and Substance Abuse Services (MH/DD/SAS)
Task Force to Prevent Deaths from Unintentional Drug Overdoses recommends creation of NC PDMP

Legislature establishes CSRS, statewide database to track dispensing of Schedule II-V controlled substances

CSRS becomes operational

Legislative revisions to CSRS
Top 10 Prescribed Controlled Substances

Analysis: Injury Epidemiology and Surveillance Unit
North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT)

• N.C. state enhanced surveillance tool

• Established in 2004 with the Center for Carolina Health Informatics (CCHI), UNC- Chapel Hill

• Collects data from:
  – Emergency Departments (N=129 in 2017)
  – Carolinas Poison Center
  – Pre-Hospital Medical Information System (PreMIS)
  – Pilot urgent care data

• Local health departments can request data accounts or can request their own data
Access to NC DETECT

• NC DETECT web application access for:
  - Health Departments
  - Data Providers (Hospitals, EMS, Poison Center)

• Authorized users are able to view data from:
  - Emergency Departments
  - The Carolinas Poison Center
  - The Pre-hospital Medical Information System (PreMIS)

• Web application account requests reviewed by NC DPH CD Branch
  - To request an account, visit http://ncdetect.org
  - Email ncdetect@listserv.med.unc.edu with questions

• Training webinars provided periodically by DPH and NC DETECT

• Datasets shared with researchers after DUA and IRB approval
Hot Topics Dashboard

Click on a point to access line listing
Thank you

Division of Public Health
Chronic Disease and Injury Section
Injury and Violence Prevention Branch
Scott.Proescholdbell@dhhs.nc.gov