Opioid Deaths in South Carolina

Daniela Nitcheva, PhD
Division of Biostatistics
Bureau of Public Health Statistics
## Death Certificates

### CAUSE OF DEATH

32. **PART I.** Enter the chain of events-diseases, injuries, or complications that directly caused the death. DO NOT enter terminal events such as cardiac arrest, respiratory arrest, or ventricular fibrillation without showing the etiology. DO NOT ABBREVIATE. Enter only one cause on a line. Add additional lines if necessary.

- **IMMEDIATE CAUSE** (Final disease or condition resulting in death)
  - a. ____________________________ Due to (as a consequence of):
  - b. ____________________________ Due to (as a consequence of):
  - c. ____________________________ Due to (as a consequence of):
  - d. ____________________________ Due to (as a consequence of):

- **Sequentially list conditions, if any, leading to the cause listed on line a. Enter the UNDERLYING CAUSE (disease or injury that initiated the events resulting in death) LAST**
  - a. ____________________________
  - b. ____________________________
  - c. ____________________________
  - d. ____________________________

**PART II.** Enter other significant conditions contributing to death but not resulting in the underlying cause given in **PART I**.

33. **WAS AN AUTOPSY PERFORMED?**

- Yes  No

34. **WERE AUTOPSY FINDINGS AVAILABLE TO COMPLETE THE CAUSE OF DEATH?**

- Yes  No

### MANNER OF DEATH

37.

- Natural  Homicide
- Accident  Pending investigation
- Suicide  Could not be determined

### DATE OF INJURY

38. **(Spell Month)**

### TIME OF INJURY

39.

### PLACE OF INJURY

40. (e.g., Decedent's home, construction site, restaurant, wooded area)

### INJURY AT WORK?

- Yes  No

### LOCATION OF INJURY

42. **State:**

- **City or Town:**

- **County:**

**Street & Number:**

**Apartment Number:**

**Zip Code:**

### DESCRIBE HOW INJURY OCCURRED:

43.

**IF TRANSPORTATION INJURY, SPECIFY:**

- Driver/Operator  Pedestrian
- Passenger  Other (Specify)
ICD-10 Codes

• Literal text for cause of death is sent to the National Center for Health Statistics (NCHS)

• NCHS codes cause of death according to ICD-10 rules

• NCHS returns codes to the state

• ICD-10 codes are used to calculate statistics
Drug Overdose Deaths by Intent, SC, 2007-2016
Occurrence Data

- SC Drug Overdose Deaths
- Unintentional Drug Overdose Deaths
- Suicide by Drug Overdose
Opioid Deaths, 2016

- 876 drug overdose deaths occurred in SC, up from 789 deaths in 2015 (11% increase)
- 616 deaths involved opioids, up from 565 in 2015 (9% increase)
- 70.3% of all drug overdose deaths involved opioids
Multiple drugs

• Often deaths involve more than one drug; such deaths are included in more than one category.

• Therefore, categories of drugs are not mutually exclusive and the numbers do not add up to the total.
## Opioid Deaths, 2015-2016

<table>
<thead>
<tr>
<th>Drug/Category</th>
<th>2015</th>
<th>2016</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total opioids</td>
<td>565</td>
<td>616</td>
<td>9%</td>
</tr>
<tr>
<td>Prescription opioids</td>
<td>512</td>
<td>550</td>
<td>7%</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>130</td>
<td>190</td>
<td>46%</td>
</tr>
<tr>
<td>Heroin</td>
<td>95</td>
<td>108</td>
<td>17%</td>
</tr>
</tbody>
</table>
Opioid Deaths by Age, South Carolina, 2014-2016, Occurrence data

Age | 2014 | 2015 | 2016 |
--- | --- | --- | ---
65+ | 19  | 21  | 27  |
55-64 | 101 | 108 | 107 |
45-54 | 145 | 152 | 153 |
35-44 | 117 | 116 | 136 |
25-34 | 136 | 136 | 136 |
18-24 | 50  | 31  | 36  |
0-17  | 5   | 3   | 3   |

Number of deaths
Opioid Deaths by Race/Sex, South Carolina, 2014-2016,
Occurrence data

- White Male: 58%
- White Female: 35%
- Black and Other Male: 4%
- Black and Other Female: 3%

Legend:
- White Male
- White Female
- Black and Other Male
- Black and Other Female
CONTACT US

Email: info@dhec.sc.gov
Phone: (803) 898-DHEC (3432)

Media Relations
Media Contact Information
Email: media@dhec.sc.gov

Stay Connected
Opioid Related Treatment in South Carolina

Andrew Fogner, MSPH
Epidemiologist
Objectives

- Historical Admission Rates
- Total Patient Count
- Percentage of Patients with Opioid related Problem
- Geographic/Demographic Breakdown
- Route of Administration
Opiates Admissions Trend

Number of Opiates Admissions by Calendar Year

- **Opiates = Primary Problem**
- **Opiates = Prim, Sec, or Tert**

Calendar Year: 2003 to 2012

- 2003: 1,391
- 2004: 1,360
- 2005: 1,494
- 2006: 1,498
- 2007: 1,668
- 2008: 2,002
- 2009: 2,175
- 2010: 2,329
- 2011: 2,524
- 2012: 2,792

South Carolina Department of Alcohol and Other Drug Abuse Services
<table>
<thead>
<tr>
<th>Substance Use Category</th>
<th>2016-07</th>
<th>2016-08</th>
<th>2016-09</th>
<th>2016-10</th>
<th>2016-11</th>
<th>2016-12</th>
<th>2017-01</th>
<th>2017-02</th>
<th>2017-03</th>
<th>2017-04</th>
<th>2017-05</th>
<th>2017-06</th>
<th>SFY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Opiate Problem Type*</td>
<td>17%</td>
<td>16%</td>
<td>17%</td>
<td>15%</td>
<td>17%</td>
<td>18%</td>
<td>18%</td>
<td>16%</td>
<td>15%</td>
<td>18%</td>
<td>17%</td>
<td>19%</td>
<td>17%</td>
</tr>
<tr>
<td>Primary Problem Type = Heroin</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5%</td>
</tr>
<tr>
<td>Any Problem Type = Heroin</td>
<td>7%</td>
<td>6%</td>
<td>7%</td>
<td>6%</td>
<td>7%</td>
<td>7%</td>
<td>6%</td>
<td>6%</td>
<td>7%</td>
<td>8%</td>
<td>8%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Primary Problem Type = Other Opiates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6%</td>
</tr>
<tr>
<td>Any Problem Type = Other Opiates</td>
<td>12%</td>
<td>12%</td>
<td>12%</td>
<td>12%</td>
<td>13%</td>
<td>14%</td>
<td>13%</td>
<td>11%</td>
<td>13%</td>
<td>12%</td>
<td>14%</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Any Injection Use Mentioned**</td>
<td>3%</td>
<td>2%</td>
<td>3%</td>
<td>3%</td>
<td>2%</td>
<td>3%</td>
<td>3%</td>
<td>2%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Past 30 Day Injection Use Mentioned</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
</tr>
</tbody>
</table>

* Any Opiate Problem = Heroin, Methadone, and Other Opiates and Synthetics
** Any Injection use and past 30 day injection use includes injection of non-opiate substances
## FY17 Patient % with Opiate Problem

<table>
<thead>
<tr>
<th>Substance Use Category</th>
<th>2016-07</th>
<th>2016-08</th>
<th>2016-09</th>
<th>2016-10</th>
<th>2016-11</th>
<th>2016-12</th>
<th>2017-01</th>
<th>2017-02</th>
<th>2017-03</th>
<th>2017-04</th>
<th>2017-05</th>
<th>2017-06</th>
<th>SFY Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Problem Type = Heroin</strong></td>
<td>33%</td>
<td>29%</td>
<td>29%</td>
<td>28%</td>
<td>29%</td>
<td>31%</td>
<td>28%</td>
<td>27%</td>
<td>31%</td>
<td>29%</td>
<td>36%</td>
<td>31%</td>
<td>30%</td>
</tr>
<tr>
<td><strong>Any Problem Type = Heroin</strong></td>
<td>44%</td>
<td>38%</td>
<td>40%</td>
<td>39%</td>
<td>38%</td>
<td>41%</td>
<td>39%</td>
<td>37%</td>
<td>40%</td>
<td>41%</td>
<td>47%</td>
<td>43%</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Primary Problem Type = Other Opiates</strong></td>
<td>35%</td>
<td>36%</td>
<td>36%</td>
<td>34%</td>
<td>37%</td>
<td>34%</td>
<td>38%</td>
<td>41%</td>
<td>35%</td>
<td>37%</td>
<td>33%</td>
<td>37%</td>
<td>36%</td>
</tr>
<tr>
<td><strong>Any Problem Type = Other Opiates</strong></td>
<td>71%</td>
<td>74%</td>
<td>73%</td>
<td>72%</td>
<td>72%</td>
<td>74%</td>
<td>75%</td>
<td>78%</td>
<td>76%</td>
<td>73%</td>
<td>71%</td>
<td>73%</td>
<td>74%</td>
</tr>
<tr>
<td><strong>Any Injection Use Mentioned</strong></td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
<td>17%</td>
<td>18%</td>
<td>14%</td>
<td>18%</td>
<td>16%</td>
<td>15%</td>
<td>18%</td>
<td>16%</td>
<td>17%</td>
<td>16%</td>
</tr>
<tr>
<td><strong>Past 30 Day Injection Use Mentioned</strong></td>
<td>12%</td>
<td>10%</td>
<td>12%</td>
<td>10%</td>
<td>13%</td>
<td>9%</td>
<td>11%</td>
<td>9%</td>
<td>10%</td>
<td>11%</td>
<td>11%</td>
<td>10%</td>
<td>11%</td>
</tr>
</tbody>
</table>

* Any Opiate Problem = Heroin, Methadone, and Other Opiates and Synthetics

** Any Injection use and past 30 day injection use includes injection of non-opiate substances
# FY17 % Distribution of Patients

<table>
<thead>
<tr>
<th>Agency</th>
<th>Total Unduplicated Admissions</th>
<th>% Opiate Related Admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>York</td>
<td>2,026</td>
<td>28.1%</td>
</tr>
<tr>
<td>Charleston</td>
<td>2,652</td>
<td>28.0%</td>
</tr>
<tr>
<td>Colleton</td>
<td>360</td>
<td>24.7%</td>
</tr>
<tr>
<td>Greenville</td>
<td>4,286</td>
<td>23.9%</td>
</tr>
<tr>
<td>Florence</td>
<td>1,300</td>
<td>20.2%</td>
</tr>
<tr>
<td>Horry</td>
<td>2,044</td>
<td>19.5%</td>
</tr>
<tr>
<td>Georgetown</td>
<td>352</td>
<td>18.5%</td>
</tr>
<tr>
<td>Williamsburg</td>
<td>301</td>
<td>18.3%</td>
</tr>
<tr>
<td>LRADAC</td>
<td>4,213</td>
<td>18.1%</td>
</tr>
<tr>
<td>Lancaster</td>
<td>437</td>
<td>17.6%</td>
</tr>
<tr>
<td>Spartanburg</td>
<td>1,803</td>
<td>16.9%</td>
</tr>
<tr>
<td><strong>State Average</strong></td>
<td><strong>35,028</strong></td>
<td><strong>16.8%</strong></td>
</tr>
</tbody>
</table>
FY17 Total Opiate Problem

FY17 Gender
- Male: 48%
- Female: 52%

FY17 Race
- White: 88%
- Black: 9%
- Other: 3%

44% of patients with an opiate related problem are between the ages of 25-34.
## FY17 Opiate Problem Type by Route of Administration

<table>
<thead>
<tr>
<th>Route of Administration</th>
<th>Total</th>
<th>Inhalation</th>
<th>Injection</th>
<th>Oral</th>
<th>Other</th>
<th>Smoking</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Opiate Admissions</td>
<td></td>
<td>858</td>
<td>1,923</td>
<td>2,862</td>
<td>20</td>
<td>48</td>
<td>15</td>
<td>5,726</td>
</tr>
</tbody>
</table>

### Avg. Age in Years at Admission

<table>
<thead>
<tr>
<th>Category</th>
<th>Total</th>
<th>Inhalation</th>
<th>Injection</th>
<th>Oral</th>
<th>Other</th>
<th>Smoking</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Age at Admission</td>
<td>32.95</td>
<td>32.47</td>
<td>35.35</td>
<td>32.95</td>
<td>32.09</td>
<td>31.88</td>
<td>33.98</td>
<td>5,726</td>
</tr>
</tbody>
</table>

### % Male

<table>
<thead>
<tr>
<th>Route of Administration</th>
<th>Total</th>
<th>Inhalation</th>
<th>Injection</th>
<th>Oral</th>
<th>Other</th>
<th>Smoking</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Male</td>
<td>55.0%</td>
<td>54.3%</td>
<td>46.4%</td>
<td>50.0%</td>
<td>47.9%</td>
<td>40.0%</td>
<td>50.3%</td>
<td>5,726</td>
</tr>
</tbody>
</table>

### % White

<table>
<thead>
<tr>
<th>Route of Administration</th>
<th>Total</th>
<th>Inhalation</th>
<th>Injection</th>
<th>Oral</th>
<th>Other</th>
<th>Smoking</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% White</td>
<td>85.4%</td>
<td>92.3%</td>
<td>85.7%</td>
<td>85.0%</td>
<td>83.3%</td>
<td>60.0%</td>
<td>87.8%</td>
<td>5,726</td>
</tr>
</tbody>
</table>

### % Hispanic

<table>
<thead>
<tr>
<th>Route of Administration</th>
<th>Total</th>
<th>Inhalation</th>
<th>Injection</th>
<th>Oral</th>
<th>Other</th>
<th>Smoking</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Hispanic</td>
<td>5.1%</td>
<td>4.9%</td>
<td>5.1%</td>
<td>0.0%</td>
<td>6.3%</td>
<td>6.7%</td>
<td>5.0%</td>
<td>5,726</td>
</tr>
</tbody>
</table>

### % CJ System Referral

<table>
<thead>
<tr>
<th>Route of Administration</th>
<th>Total</th>
<th>Inhalation</th>
<th>Injection</th>
<th>Oral</th>
<th>Other</th>
<th>Smoking</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% CJ System Referral</td>
<td>15.2%</td>
<td>15.1%</td>
<td>23.8%</td>
<td>40.0%</td>
<td>25.0%</td>
<td>20.0%</td>
<td>19.6%</td>
<td>5,726</td>
</tr>
</tbody>
</table>

### % Social Services Referral

<table>
<thead>
<tr>
<th>Route of Administration</th>
<th>Total</th>
<th>Inhalation</th>
<th>Injection</th>
<th>Oral</th>
<th>Other</th>
<th>Smoking</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Social Services Referral</td>
<td>16.2%</td>
<td>11.5%</td>
<td>23.3%</td>
<td>5.0%</td>
<td>16.7%</td>
<td>46.7%</td>
<td>18.2%</td>
<td>5,726</td>
</tr>
</tbody>
</table>

### % Self-Referral

<table>
<thead>
<tr>
<th>Route of Administration</th>
<th>Total</th>
<th>Inhalation</th>
<th>Injection</th>
<th>Oral</th>
<th>Other</th>
<th>Smoking</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Self-Referral</td>
<td>53.0%</td>
<td>61.0%</td>
<td>35.8%</td>
<td>45.0%</td>
<td>47.9%</td>
<td>13.3%</td>
<td>46.9%</td>
<td>5,726</td>
</tr>
</tbody>
</table>

### % Employed Full or Part Time

<table>
<thead>
<tr>
<th>Route of Administration</th>
<th>Total</th>
<th>Inhalation</th>
<th>Injection</th>
<th>Oral</th>
<th>Other</th>
<th>Smoking</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Employed Full or Part Time</td>
<td>35.7%</td>
<td>26.7%</td>
<td>33.9%</td>
<td>45.0%</td>
<td>27.1%</td>
<td>26.7%</td>
<td>31.7%</td>
<td>5,726</td>
</tr>
</tbody>
</table>

### % Homeless

<table>
<thead>
<tr>
<th>Route of Administration</th>
<th>Total</th>
<th>Inhalation</th>
<th>Injection</th>
<th>Oral</th>
<th>Other</th>
<th>Smoking</th>
<th>Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Homeless</td>
<td>6.3%</td>
<td>8.8%</td>
<td>3.0%</td>
<td>0.0%</td>
<td>10.4%</td>
<td>0.0%</td>
<td>5.5%</td>
<td>5,726</td>
</tr>
</tbody>
</table>

Source: South Carolina Department of Alcohol and Other Drug Abuse Public Substance Use Disorder Treatment System

* Admission counts presented in table represent distinct treatment episodes for 5,002 unduplicated individuals
CONTACT US

Physical Address:
1801 Main Street, 4th Floor
Columbia, SC 29201

Phone:
803.896.5555

www.daodas.sc.gov
South Carolina Department of Health and Environmental Control

South Carolina Opioid Epidemic

Khosrow Heidari
Senior Epidemiologist
Prescription Monitoring Program, Bureau of Drug Control

Sept. 7TH 12:35pm – 1:05pm, Lexington A Ballroom
Objectives:

• How bad is the opioid epidemic?
• Any mortality and morbidity?
• Factors impacting opioid epidemic?
• What is DHEC doing to reduce the burden of opioid epidemic?
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 1999

Drug-poisoning deaths are defined as having ICD–10 underlying cause-of-death codes X40–X44* (unintentional)

*Accidental poisoning by and exposure to drugs and other biological substances
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2000
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2001
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2002
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2003
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2004
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2005
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2006

Select Year
2006

Legend for Estimated Age-adjusted Death Rate per 100,000
- 0-2
- 2.1-4
- 4.1-6
- 6.1-8
- 8.1-10
- 10.1-12
- 12.1-14
- 14.1-16
- 16.1-18
- 18.1-20
- 20.1-22
- 22.1-24
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2007
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2008
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2009
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2010
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2012
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2013
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2014
Estimated Age-adjusted Death Rates for Drug Poisoning by County, 2015
The Opioid Epidemic in the U.S.

In 2015...

12.5 million
People misused prescription opioids

2.1 million
People misused prescription opioids for the first time

33,091
People died from overdosing on opioids

2 million
People had prescription opioid use disorder

15,281
Deaths attributed to overdosing on commonly prescribed opioids

828,000
People used heroin

9,580
Deaths attributed to overdosing on synthetic opioids

135,000
People used heroin for the first time

12,989
Deaths attributed to overdosing on heroin

$78.5 billion
In economic costs (2013 data)

Sources:
1. 2015 National Survey on Drug Use and Health (SAMHSA).
3. Prescription Overdose Data (CDC).
4. heroin overdose (CDC).
Higher opioid prescribing puts patients at risk for addiction and overdose. The wide variation among counties suggests a lack of consistency among providers when prescribing opioids. The 2016 CDC Guideline for Prescribing Opioids for Chronic Pain offers recommendations that may help to improve prescribing practices and ensure all patients receive safer, more effective pain treatment.

SOURCE: CDC Vital Signs, July 2017
EMS, Monthly Suspected Opioid Overdose Rescue Cases, South Carolina 2014- Mid 2017

South Carolina Drug Overdose Morbidity (Emergency Department and Hospitalization Visit) Rates

Source: RFA- Health and Demographics
* 2016 Data is preliminary
SC Rate of opioid Analgesics per 1,000 state Residents

Opioid Rx

Source: DHEC – SCRIPTS – Analysis by MUSC
Summary

• Opioid crisis is in its epidemic stage:
  • Increased overdose death (num. and rates),
  • Increased overdose incidence and rescue,
  • Increased ED and hospitalization

• Prescription medication has been increasing over the last decade

• The percent of patient receiving high dosage of opioid (≥90 MME) has been declining.