Opioid Epidemic in Kansas

David Willey MD
Opioid Epidemic and Associated Mortality

Prescription Painkiller Sales and Deaths

Sources:
\( ^a \) Automation of Reports and Consolidated Orders System (ARCOS) of the Drug Enforcement Administration (DEA), 2012 data not available.

Opioid Epidemic and Associated Mortality

• Drug overdose deaths are the leading cause of injury-related deaths and continue to rise (47,055 deaths in 2014)

• 61% of drug overdose deaths involved some type of opioid (28,647 deaths)

18,893 deaths from prescription opioid pain relievers in 2014

10,574 deaths from heroin in 2014
National Overdose Deaths
Number of Deaths from All Drugs

Source: National Center for Health Statistics, CDC Wonder
National Overdose Deaths
Number of Deaths from Prescription Opioid Pain Relievers (excluding non-methadone synthetics)

Source: National Center for Health Statistics, CDC Wonder
National Overdose Deaths

Number of Deaths from Heroin

Source: National Center for Health Statistics, CDC Wonder
National Overdose Deaths
Number of Deaths from Heroin and Non-Methadone Synthetics
(captures illicit opioids)

Source: National Center for Health Statistics, CDC Wonder
Respondents Who Endorsed Past-Month Use of OxyContin or Heroin Before and After Introduction of an Abuse-Deterrent Formulation (ADF)

Drugs Used to Replace OxyContin After the Introduction of the Abuse-Deterrent Formulation (ADF)

Cicero TJ and Ellis MS  JAMA Psychiatry. Published Online March 11, 2015.
Opioid involvement in benzodiazepine overdose

Source: National Center for Health Statistics, CDC Wonder
Drug poisoning death rates in Kansas have tripled since 1999
Drugs caused 8 out of 10 poisoning deaths

In 2014, drugs and medications – including prescription and illicit drugs, and over-the-counter medications - were the underlying cause of death for 84% of all poisoning deaths. Unintentional poisonings contributed to the most deaths (75%) and Kansans aged 45-54 years had the highest age-adjusted death rate (Table 1).

Table 1. Drug poisoning deaths by gender, age group and intent, Kansas, 2014

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
<th>AA Rate per 100,000 persons**</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>156</td>
<td>48%</td>
<td>10.9 (95% CI: 9.3-12.8)</td>
</tr>
<tr>
<td>Male</td>
<td>170</td>
<td>52%</td>
<td>12.1 (95% CI: 10.4-14.2)</td>
</tr>
<tr>
<td><strong>Age Group</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-24 years</td>
<td>30</td>
<td>9%</td>
<td>7.1 (95% CI: 4.8-10.2)</td>
</tr>
<tr>
<td>25-44 years</td>
<td>124</td>
<td>38%</td>
<td>16.9 (95% CI: 14.1-20.2)</td>
</tr>
<tr>
<td>45-54 years</td>
<td>91</td>
<td>28%</td>
<td>24.7 (95% CI: 19.9-30.3)</td>
</tr>
<tr>
<td>55 years and older</td>
<td>80</td>
<td>25%</td>
<td>10.3 (95% CI: 8.2-12.8)</td>
</tr>
<tr>
<td><strong>Intent</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unintentional</td>
<td>246</td>
<td>75%</td>
<td>8.8 (95% CI: 7.7-10.0)</td>
</tr>
<tr>
<td>Suicide</td>
<td>56</td>
<td>17%</td>
<td>1.9 (95% CI: 1.4-2.5)</td>
</tr>
<tr>
<td>Undetermined</td>
<td>24</td>
<td>7%</td>
<td>0.9 (95% CI: 0.6-1.3)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>All Drug Deaths</td>
<td>326</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Counts for age group less than 15 years of age were suppressed due to small numbers. **Death rates are age adjusted (AA) to the 2000 U.S. Standard Population except for age-specific rates. Data source: 2014 Kansas Vital Statistics, Bureau of Epidemiology and Public Health Informatics, KDHE.
Opioid pain relievers contributed to 45% of drug poisoning deaths in the State of Kansas in 2014.
2015 Death Rates for Opioid Drug * Overdose by State

*Opioid Drugs - refer to prescription, illicit, and unspecified drugs containing opioids. A prescription opioid drug requires a medical prescription to be dispensed. An illicit opioid drug is not allowed to be prescribed or possessed under Federal Law. An unspecified opioid drug can be either a prescription or illicit drug.

**Death rates based on counts of less than twenty (death count < 20) are flagged as "Unreliable". A death rate based on fewer than 20 deaths has a relative standard error (RSE(R)) of 23 percent or more. A RSE(R) of 23 percent is considered statistically unreliable. Death counts and death rates are "Suppressed" when the figure represents zero to nine (0-9) persons.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2015 on CDC WONDER Online Database, released 2016. Data are from the Multiple Cause of Death Files, 1999-2015, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program.
<table>
<thead>
<tr>
<th>Rank</th>
<th>State</th>
<th>Deaths</th>
<th>Population</th>
<th>Age Adjusted Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>West Virginia</td>
<td>5,297</td>
<td>31,138,841</td>
<td>17.6</td>
</tr>
<tr>
<td>2</td>
<td>Utah</td>
<td>5,389</td>
<td>44,050,407</td>
<td>13.3</td>
</tr>
<tr>
<td>3</td>
<td>Nevada</td>
<td>5,668</td>
<td>42,397,289</td>
<td>13.1</td>
</tr>
<tr>
<td>4</td>
<td>New Mexico</td>
<td>4,182</td>
<td>33,510,363</td>
<td>12.9</td>
</tr>
<tr>
<td>5</td>
<td>Rhode Island</td>
<td>2,035</td>
<td>17,971,898</td>
<td>11.3</td>
</tr>
<tr>
<td>6</td>
<td>Maryland</td>
<td>10,272</td>
<td>96,095,812</td>
<td>10.5</td>
</tr>
<tr>
<td>7</td>
<td>Oklahoma</td>
<td>6,208</td>
<td>62,035,326</td>
<td>10.2</td>
</tr>
<tr>
<td>8</td>
<td>Massachusetts</td>
<td>11,227</td>
<td>110,561,604</td>
<td>10.1</td>
</tr>
<tr>
<td>9</td>
<td>New Hampshire</td>
<td>2,199</td>
<td>22,040,058</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>Kentucky</td>
<td>6,890</td>
<td>72,069,687</td>
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</tr>
<tr>
<td>11</td>
<td>Washington</td>
<td>9,869</td>
<td>110,031,695</td>
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<td>12</td>
<td>Ohio</td>
<td>15,613</td>
<td>195,264,288</td>
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<td>Maine</td>
<td>1,737</td>
<td>22,346,589</td>
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<td>14,690,943</td>
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<tr>
<td>15</td>
<td>Tennessee</td>
<td>8,233</td>
<td>104,293,627</td>
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<tr>
<td>16</td>
<td>Arizona</td>
<td>7,628</td>
<td>102,260,320</td>
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<tr>
<td>17</td>
<td>District of Columbia</td>
<td>781</td>
<td>10,140,487</td>
<td>7.7</td>
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<tr>
<td>18</td>
<td>Vermont</td>
<td>794</td>
<td>10,552,926</td>
<td>7.6</td>
</tr>
<tr>
<td>19</td>
<td>North Carolina</td>
<td>11,454</td>
<td>153,789,162</td>
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<tr>
<td>20</td>
<td>Connecticut</td>
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<td>59,851,848</td>
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<td>21</td>
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<td>22</td>
<td>Missouri</td>
<td>6,935</td>
<td>99,548,925</td>
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<td>23</td>
<td>Florida</td>
<td>20,944</td>
<td>307,658,206</td>
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<tr>
<td>24</td>
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<td>776</td>
<td>11,619,054</td>
<td>6.5</td>
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<tr>
<td>25</td>
<td>Colorado</td>
<td>5,463</td>
<td>81,979,602</td>
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<tr>
<td>26</td>
<td>Illinois</td>
<td>13,593</td>
<td>215,629,487</td>
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<tr>
<td>27</td>
<td>Wisconsin</td>
<td>5,892</td>
<td>94,983,188</td>
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<tr>
<td>28</td>
<td>Virginia</td>
<td>7,822</td>
<td>131,420,921</td>
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<tr>
<td>29</td>
<td>Michigan</td>
<td>9,650</td>
<td>169,247,101</td>
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<tr>
<td>30</td>
<td>New York</td>
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<td>327,923,109</td>
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<tr>
<td>31</td>
<td>Montana</td>
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</tr>
<tr>
<td>32</td>
<td>New Jersey</td>
<td>7,539</td>
<td>147,786,615</td>
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</tr>
<tr>
<td>33</td>
<td>Pennsylvania</td>
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<td>213,336,433</td>
<td>5.1</td>
</tr>
<tr>
<td>34</td>
<td>Wyoming</td>
<td>460</td>
<td>9,131,503</td>
<td>5.1</td>
</tr>
<tr>
<td>35</td>
<td>Arkansas</td>
<td>2,258</td>
<td>48,127,139</td>
<td>4.9</td>
</tr>
<tr>
<td>36</td>
<td>South Carolina</td>
<td>3,604</td>
<td>75,243,461</td>
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<tr>
<td>37</td>
<td>California</td>
<td>27,205</td>
<td>618,482,047</td>
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<tr>
<td>38</td>
<td>Idaho</td>
<td>1,032</td>
<td>25,125,742</td>
<td>4.3</td>
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<tr>
<td>39</td>
<td>Georgia</td>
<td>6,703</td>
<td>156,794,347</td>
<td>4.2</td>
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<tr>
<td>40</td>
<td>Hawaii</td>
<td>955</td>
<td>22,391,828</td>
<td>4.2</td>
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<tr>
<td>41</td>
<td>Kansas</td>
<td>1,826</td>
<td>47,492,505</td>
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</tr>
<tr>
<td>42</td>
<td>Texas</td>
<td>15,613</td>
<td>405,679,137</td>
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</tr>
<tr>
<td>43</td>
<td>Indiana</td>
<td>4,066</td>
<td>108,039,336</td>
<td>3.8</td>
</tr>
<tr>
<td>44</td>
<td>Minnesota</td>
<td>3,299</td>
<td>88,349,625</td>
<td>3.7</td>
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<tr>
<td>45</td>
<td>Iowa</td>
<td>1,728</td>
<td>51,106,028</td>
<td>3.5</td>
</tr>
<tr>
<td>46</td>
<td>Louisiana</td>
<td>2,571</td>
<td>76,816,288</td>
<td>3.4</td>
</tr>
<tr>
<td>47</td>
<td>Alabama</td>
<td>2,346</td>
<td>79,153,531</td>
<td>3</td>
</tr>
<tr>
<td>48</td>
<td>South Dakota</td>
<td>374</td>
<td>13,541,850</td>
<td>3</td>
</tr>
<tr>
<td>49</td>
<td>Mississippi</td>
<td>1,193</td>
<td>49,696,268</td>
<td>2.5</td>
</tr>
<tr>
<td>50</td>
<td>Nebraska</td>
<td>646</td>
<td>30,449,575</td>
<td>2.2</td>
</tr>
<tr>
<td>51</td>
<td>North Dakota</td>
<td>241</td>
<td>11,394,034</td>
<td>2.2</td>
</tr>
<tr>
<td>51</td>
<td>North Dakota</td>
<td>241</td>
<td>11,394,034</td>
<td>2.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>309,381</td>
<td>5,112,618,876</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2015 on CDC WONDER Online Database, released 2016. Data are from the Multiple Cause of Death Files, 1999-2015, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program.
### 1999 - 2015 National Average Death Rates for Opioid Drug Overdose by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Deaths</th>
<th>Population</th>
<th>Age Adjusted Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>8,050</td>
<td>279,040,168</td>
<td>2.9</td>
</tr>
<tr>
<td>2000</td>
<td>8,407</td>
<td>281,421,906</td>
<td>3</td>
</tr>
<tr>
<td>2001</td>
<td>9,496</td>
<td>284,968,955</td>
<td>3.3</td>
</tr>
<tr>
<td>2002</td>
<td>11,920</td>
<td>287,625,193</td>
<td>4.1</td>
</tr>
<tr>
<td>2003</td>
<td>12,940</td>
<td>290,107,933</td>
<td>4.5</td>
</tr>
<tr>
<td>2004</td>
<td>13,756</td>
<td>292,805,298</td>
<td>4.7</td>
</tr>
<tr>
<td>2005</td>
<td>14,918</td>
<td>295,516,599</td>
<td>5.1</td>
</tr>
<tr>
<td>2006</td>
<td>17,545</td>
<td>298,379,912</td>
<td>5.9</td>
</tr>
<tr>
<td>2007</td>
<td>18,516</td>
<td>301,231,207</td>
<td>6.1</td>
</tr>
<tr>
<td>2008</td>
<td>19,582</td>
<td>304,093,966</td>
<td>6.4</td>
</tr>
<tr>
<td>2009</td>
<td>20,422</td>
<td>306,771,529</td>
<td>6.6</td>
</tr>
<tr>
<td>2010</td>
<td>21,089</td>
<td>308,745,538</td>
<td>6.8</td>
</tr>
<tr>
<td>2011</td>
<td>22,784</td>
<td>311,591,917</td>
<td>7.3</td>
</tr>
<tr>
<td>2012</td>
<td>23,166</td>
<td>313,914,040</td>
<td>7.4</td>
</tr>
<tr>
<td>2013</td>
<td>25,052</td>
<td>316,128,839</td>
<td>7.9</td>
</tr>
<tr>
<td>2014</td>
<td>28,647</td>
<td>318,857,056</td>
<td>9</td>
</tr>
<tr>
<td>2015</td>
<td>33,091</td>
<td>321,418,820</td>
<td>10.4</td>
</tr>
<tr>
<td>Total</td>
<td>309,381</td>
<td>5,112,618,876</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Source: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2015 on CDC WONDER Online Database, released 2016. Data are from the Multiple Cause of Death Files, 1999-2015, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program.
Youth drug overdose rates have more than quadrupled in Kansas over the past 12 Years.
5.9 number of drug-related deaths in Kansas per 100,000 12- to 25-year-olds is lower than the national average 7.3 number of drug-related deaths nationally per 100,000 12- to 25-year-olds.

Rise of youth overdose rates over the past 12 years

Kansas’ overall drug overdose death rate for 12- to 25-year-olds more than quadrupled. Only Wyoming saw a greater jump than Kansas.
## Individuals receiving SUD Treatment

<table>
<thead>
<tr>
<th>GENDER</th>
<th>TOTAL</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>4,641</td>
<td>35.9%</td>
</tr>
<tr>
<td>Male</td>
<td>8,301</td>
<td>64.1%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>12,942</td>
<td>100.0%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>PREGNANT AT ADMISSION</th>
<th>ADMISSION</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>254</td>
<td>4.0%</td>
</tr>
<tr>
<td>No</td>
<td>4,747</td>
<td>95.8%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>5,001</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRIMARY DRUG OF CHOICE</th>
<th>ADMISSION</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>4,869</td>
<td>34.9%</td>
</tr>
<tr>
<td>Marijuana, Hashish, THC, Other Cannibus</td>
<td>3,640</td>
<td>26.1%</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>3,574</td>
<td>25.6%</td>
</tr>
<tr>
<td>Other Opiates And Synthetic</td>
<td>878</td>
<td>6.3%</td>
</tr>
<tr>
<td>Cocaine, Crack</td>
<td>462</td>
<td>3.3%</td>
</tr>
<tr>
<td>Heroin</td>
<td>190</td>
<td>1.4%</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>79</td>
<td>0.6%</td>
</tr>
<tr>
<td>PCP - Phencyclidine</td>
<td>58</td>
<td>0.4%</td>
</tr>
<tr>
<td>Other Hallucinogens</td>
<td>36</td>
<td>0.3%</td>
</tr>
<tr>
<td>Other Drugs Combinations</td>
<td>28</td>
<td>0.2%</td>
</tr>
<tr>
<td>Other Amphetamines</td>
<td>28</td>
<td>0.2%</td>
</tr>
<tr>
<td>Inhalants</td>
<td>17</td>
<td>0.1%</td>
</tr>
<tr>
<td>Over-the-counter</td>
<td>15</td>
<td>0.1%</td>
</tr>
<tr>
<td>Other Sedatives Or Hypnotics</td>
<td>15</td>
<td>0.1%</td>
</tr>
<tr>
<td>All other drugs</td>
<td>34</td>
<td>0.2%</td>
</tr>
<tr>
<td>Unknown</td>
<td>13</td>
<td>0.1%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>13,936</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

## Admissions to Treatment

<table>
<thead>
<tr>
<th>GENDER</th>
<th>ADMISSION</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>5,003</td>
<td>35.9%</td>
</tr>
<tr>
<td>Male</td>
<td>8,933</td>
<td>64.1%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>13,936</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGE AT ADMISSION</th>
<th>ADMISSION</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;18</td>
<td>1,648</td>
<td>11.8%</td>
</tr>
<tr>
<td>18-28</td>
<td>3,881</td>
<td>27.8%</td>
</tr>
<tr>
<td>28-38</td>
<td>4,119</td>
<td>29.6%</td>
</tr>
<tr>
<td>38-48</td>
<td>2,195</td>
<td>15.8%</td>
</tr>
<tr>
<td>48-58</td>
<td>1,665</td>
<td>11.9%</td>
</tr>
<tr>
<td>&gt;58</td>
<td>428</td>
<td>3.1%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>13,936</td>
<td>100.0%</td>
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</table>

<table>
<thead>
<tr>
<th>EMPLOYMENT STATUS</th>
<th>ADMISSION</th>
<th>PERCENTAGE</th>
</tr>
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<tbody>
<tr>
<td>Full-Time</td>
<td>2,900</td>
<td>20.8%</td>
</tr>
<tr>
<td>Part-Time</td>
<td>1,271</td>
<td>9.1%</td>
</tr>
<tr>
<td>Unemployment</td>
<td>2,103</td>
<td>15.1%</td>
</tr>
<tr>
<td>Not In Labor Force</td>
<td>7,564</td>
<td>54.3%</td>
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<tr>
<td>Retired</td>
<td>77</td>
<td>0.6%</td>
</tr>
<tr>
<td>Unknown</td>
<td>21</td>
<td>0.2%</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>13,936</td>
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</table>

<table>
<thead>
<tr>
<th>RECEIVING MH TREATMENT AT ADMISSION</th>
<th>ADMISSION</th>
<th>PERCENTAGE</th>
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<tbody>
<tr>
<td>No</td>
<td>9,494</td>
<td>68.1%</td>
</tr>
<tr>
<td>Yes</td>
<td>4,442</td>
<td>31.9%</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>13,936</td>
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</table>

<table>
<thead>
<tr>
<th>RESIDENTIAL STATUS AT ADMISSION</th>
<th>ADMISSION</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeless</td>
<td>1,311</td>
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<tr>
<td>Dependent Living</td>
<td>4,503</td>
<td>32.3%</td>
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<tr>
<td>Independent Living</td>
<td>8,122</td>
<td>58.3%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>13,936</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Data Source: KCPC
Report produced by: KDADS/PE/tm
Prevention Strategies that Can Help Address the Dangers of Opioid Addiction in the US

- Clinical guidelines to educate physicians; responsible prescribing and management of chronic pain symptoms
- Mandatory addiction education in medical, nursing and pharmacy schools
- Continued development of use prescription-drug monitoring programs
- Providing safe and efficient ways to dispose of medication
- Abuse-deterrent formulations
- Enforcement policies to discourage diversion
Sources of Prescription Opioids Among Past-Year Non-Medical Users

![Bar chart showing sources of prescription opioids among past-year non-medical users.](chart)

- **Given by a friend or relative for free**
- **Prescribed by ≥1 physicians**
- **Stolen from a friend or relative**
- **Bought from a friend or relative**
- **Bought from a drug dealer or other stranger**
- **Other**

**Number of Days of Past-Year Non-Medical Use**

- Any
- 1-29
- 30-99
- 100-199
- 200-365

**Percent of Users**

---

*a* Obtained from the US National Survey on Drug Use and Health, 2008 through 2011.5

*b* Estimate is statistically significantly different from that for highest-frequency users (200-365 days) \(P<.05\).

*c* Includes written fake prescriptions and those opioids stolen from a physician’s office, clinic, hospital, or pharmacy; purchases on the Internet; and obtained some other way.

Treatment Strategies that Can Help Address the Dangers of Opioid Addiction in the US

• Efforts to de-stigmatize addiction and treatment
  – Education and public awareness

• Increasing access to evidence based treatment
  – Reimbursement, insurance coverage, number of treatment programs

• Expanding medication assisted treatment
  – (suboxone, naltrexone, methadone)
  – Number of providers willing to treat and provide these medications

• Increased psychosocial and recovery support
  – Counseling, mental health, family involvement, monitoring services for extended periods of treatment

• Ongoing research to evaluate current treatment strategies and help direct future care

• Increased availability and utilization of Naloxone to reduce the number of opioid related overdose deaths
Why Medications in treating SUDs?

• SUDs are chronic brain diseases
  – Multifactorial, like other chronic diseases
  – Respond best to comprehensive treatment
  – Require long-term treatment
• Medications improve treatment outcome over psychosocial interventions alone
  – Prevent medical complications of alcohol and opioid withdrawal
  – Facilitate engagement in psychosocial treatment
  – Reduce craving and risk of relapse
  – Protect against opioid overdose
Medications for SUDs

• **Alcohol use disorder:**
  – Acamprosate (Campral®)
  – Disulfiram (Antabuse®)
  – Naltrexone (Revia®, Vivitrol®)
  
  Off Label:
  – Topiramate (Topamax®)
  – Gabapentin (Neurontin®)

• **Opioid use disorder:**
  – Methadone
  – Buprenorphine/naloxone (Suboxone®, Subzolv®, Bunavail®)
  – Naltrexone (Vivitrol®)

• **Tobacco use disorder:**
  – Nicotine replacement (transdermal, gum, spray)
  – Bupropion (Zyban®, Wellbutrin®)
  – Varenicline (Chantix®)

• **Opioid overdose reversal**
  – Naloxone rescue kits and Evzio®
Substance Use Disorders are Chronic Brain Diseases

• Known pathophysiology
• Treatment response similar to other chronic diseases
• Respond best to a combination of psychosocial interventions and medications (when available).
Compliance and Relapse in Chronic Medical Disorders

- **Insulin-dependent diabetes**
  - Compliance with medication <50%
  - Compliance with diet and foot care <30%
    - Retreated within 12 months 30 – 50%

- **Medication-dependent hypertension**
  - Compliance with medication <30%
  - Compliance with diet <30%
    - Retreated within 12 months 50 – 60%

- **Substance use disorders**
  - Compliance with treatment attendance <40%
    - Retreated within 12 months 10 – 40%

Compliance and Relapse in Chronic Medical Disorders

- **Insulin-dependent diabetes**
  - Compliance with medication <50%
  - Compliance with diet and foot care <30%
    - Retreated within 12 months 30 – 50%

- **Medication-dependent hypertension**
  - Compliance with medication <30%
  - Compliance with diet <30%
    - Retreated within 12 months 50 – 60%

- **Substance use disorders**
  - Compliance with treatment attendance <40%
    - Retreated within 12 months 10 – 40%

Opioid Use Disorder

• High mortality\(^1\) – 581 male admits to California Civil Addict Program (CAP)
  – Average age at entry = 25 years
    • 10-year mortality = 14%
    • 20-year mortality = 28%
    • 30-year mortality = 49%

• Insufficient evidence that counseling alone is effective

• Medications:
  – Opioid Agonist Therapy (OAT) is recommended as first-line:
    • **Methadone** (in an OTP)
    • **Buprenorphine/naloxone**
  – If OAT is contraindicated, unavailable, unacceptable, or discontinued:
    • **Extended-release injectable naltrexone**
  – Insufficient evidence to recommend for or against oral naltrexone for OUD.

\(^1\)Hser (2001) Arch Gen Psych 58:503-508
Withdrawal management alone is not recommended.
  - Lack of evidence of efficacy for psychosocial intervention without medication.
  - Risk of overdose (greatest in first few months after discharge from inpatient)
When opioid agonist maintenance treatment is not an option,
  - Recommend withdrawal using opioid agonist medication:
    • Buprenorphine
    • Methadone- in an OTP or when patient is hospitalized for treatment of a medical condition other than narcotic addiction
  - If opioid agonist medication is contraindicated, not preferred, or not available, recommend:
    • Clonidine
    • Plus adjunctive medications such as benzodiazepine, antiemetic, antidiarrheal, NSAIDs.
Full and Partial Agonists vs Antagonists

Treatment Strategies for Opioid Addiction

- Agonist
- Antagonist

**Effect:**
- An agonist drug has an active site of similar shape to the endogenous ligand, so binds to the receptor and produces the same effect.
- An antagonist drug is close enough in shape to bind to the receptor but not close enough to produce an effect. It also takes up receptor space and so prevents the endogenous ligand from binding.

**Graph:**
- Log Dose on the x-axis
- Opioid Effect on the y-axis
- Full Agonist (Methadone)
- Partial Agonist (Buprenorphine)
- Antagonist (Naloxone)
Methadone

- Mu opioid agonist
- Usual dose: 60 - 120 mg once daily
- Efficacy: 1.72 (high dose vs low dose (<60 mg)
- Must be administered through Federally Regulated Opioid Treatment Program
  - Methadone can be continued for patients hospitalized for treatment of a medical condition other than narcotic addiction (including alcohol use disorders).
- Adverse reactions:
  - Common:
    - Constipation
    - Drowsiness
    - Low testosterone
    - Hyperalgesia
  - Serious:
    - Cardiac arrhythmias
    - Sudden cardiac death
# Methadone Precautions

<table>
<thead>
<tr>
<th>Contraindications</th>
<th>Precautions</th>
<th>Drug interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergy to methadone</td>
<td>Respiratory, renal or liver impairment</td>
<td>Concurrent benzodiazepines, alcohol, or other CNS depressants</td>
</tr>
<tr>
<td></td>
<td>Prolonged QTc or arrhythmias</td>
<td>CYP3A4 inhibitors may ↑ levels-</td>
</tr>
<tr>
<td></td>
<td>Concurrent opioids (e.g. enrollment in another OTP)</td>
<td>ketoconazole, erythromycin, HIV protease inhibitors</td>
</tr>
<tr>
<td></td>
<td>Partial opioid agonists or antagonists</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head injury</td>
<td></td>
</tr>
</tbody>
</table>

VETERANS HEALTH ADMINISTRATION
Methadone

Methadone is an Unusual Opioid:

- Slow onset of action: patient starts to ‘feel’ the swallowed dose 30-45 minutes later.
- Delayed peak action: greatest effect from single dose is 2-4 hours post ingestion.
- Tissue stores: methadone deposited in tissue over 3-7 days to reach steady state. This means that during induction, a given dose will have stronger effect and last longer with each day of ingestion.
Methadone

Steady State: The point at which during each interdose interval the rise and fall of drug concentration for the interdose interval is identical for each dose

(Slide courtesy of Dr. Thomas Payte)

Days/Half-Lives – Methadone half-life= 24-36 hours
Dose constant at 30 mg daily. Interdose interval = 24 hrs (trough to trough)
Peak levels increase daily for 5-6 days with NO increase in dose!
First Dose Limited in Regulation, 42 CFR Part 8.12

- Maximum first dose is limited to 30mg.
- Maximum total dose during first day of treatment is 40mg.

Note: Patients estimated to have high tolerance, for example a history of daily use of 3gm of heroin by injection for a year, with many track marks in different stages of healing, physical signs of withdrawal, and a history of previous MMT (i.e., patient familiar with methadone effects), would probably benefit from maximum dose, with evaluation for additional dose increases over the first several days. Many patients need lower than maximum dose, for example a patient naïve to methadone treatment who has used hydrocodone tablets for six months and does not have dilated pupils at admission may benefit from a starting dose of 10mg followed by observation.
Methadone

Recent Heroin Use by Current Methadone Dose

Ref: J. C. Ball, November 18, 1988 Slide adapted from Tom Payte
Methadone

Should MMT Ever be Discontinued?

• Opioid addiction is a chronic, relapsing condition, so long-term treatment is indicated.

• Prognosis after withdrawal from MMT is dismal: most patients relapse before 12 mos. (compare this to diabetes, hypertension, epilepsy, etc. – other chronic conditions that require ongoing medication)
Methadone

Relapse to IV Drug Use After MMT
105 Male Patients who Left Treatment

Adapted from Ball & Ross - *The Effectiveness of Methadone Maintenance Treatment*, 1991
Opioid Agonist Treatment of Addiction - Payte - 1998
Methadone

Treatment Outcome Data: Methadone Maintenance

- 4-5 fold reduction in death rate
- reduction of drug use
- reduction of criminal activity
- engagement in socially productive roles
- reduced spread of HIV
- excellent retention

(see: Joseph et al, 2000, Mt. Sinai J.Med., vol 67, # 5, 6)
Methadone

Crime Among 491 Patients Before and During MMT at 6 Programs

Adapted from Ball & Ross - The Effectiveness of Methadone Maintenance Treatment, 1991
Opioid Agonist Treatment of Addiction - Payte - 1998
HIV infection rates by baseline treatment status. In treatment (IT) n=138, not in treatment (OT) n=88

Opioid Maintenance Pharmacotherapy - A Course for Clinicians - 1997
Buprenorphine (Suboxone®)

- Partial $\mu$ opioid agonist
- Usual dose: 4 - 24 mg once daily
- Efficacy: >8mg daily similar to methadone
- Adverse reactions:
  - Common:
    - Drowsiness
    - Constipation
    - May precipitate opioid withdrawal
  - Serious:
    - Cytolytic hepatitis
# Buprenorphine Precautions

<table>
<thead>
<tr>
<th>Contraindications</th>
<th>Precautions</th>
<th>Drug interactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergies to buprenorphine or naloxone</td>
<td>May precipitate opioid withdrawal</td>
<td>Alcohol, benzodiazepines, and other CNS depressants</td>
</tr>
<tr>
<td></td>
<td>Patients with liver, renal or respiratory impairment</td>
<td>CYP3A4 inhibitors may ↑ levels-ketoconazole, erythromycin, HIV protease inhibitors</td>
</tr>
<tr>
<td></td>
<td>CNS depression</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Caution in operating heavy machinery</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Head injury</td>
<td></td>
</tr>
</tbody>
</table>
Mu Opioid Receptor Availability Decreases with Increasing Doses of Buprenorphine

PET/11 Carfentanil Label of Mu Receptors
Greenwald et al. 2003 Nearly all mu receptors are occupied by BUP 16 mg
Buprenorphine vs. Withdrawal and Drug-Free Treatment for Heroin Dependence: Maintenance is Associated With Longer Duration of Treatment

Kakko, Lancet 2003

4 Subjects in Control Group Died
Short Buprenorphine Taper versus Extended Buprenorphine

• Multisite randomized trial- 2-phase adaptive treatment research design
  – 653 treatment-seeking outpatients dependent on prescription opioids
  – Randomized to Standard Medical Management (SMM) or SMM plus counseling
  – Phase 1: Two week stabilization, 2-week taper, 8-week post-medication follow-up
    • Successful patients exited study; those who returned to opioid use entered Phase 2
  – Phase 2: Twelve week treatment, 4-week taper, 8-week post-medication follow-up
• Results:
  – Phase 1: 43 of 653 (6.6%) had successful outcomes
  – Phase 2:
    • 177 of 360 (49%) achieved success at week 12, no group differences
    • 31 of 360 (8.6%) maintained success 8 weeks post-medication
    • Chronic pain did not affect outcome
    • History of heroin use predicted poorer outcome during Phase 2 medication.
Treatment for Addiction to Opioid Medications

Brief and Extended Buprenorphine-Naloxone Tx for Rx Opioid Dependence

- Phase 1 (Brief): 6.6%
- Phase 2 (Extended): 49.2%
- After Taper: 8.6%

Retention In Methadone Maintenance Drug Tx

ODDS RATIO

- PTOP: 1.2
- Heroin: 1.4

NS after adjusting for demographics, treatment agencies, other drug use, public assistance type, medical, psychiatric, social, legal and familial factors.

Prescription Opioid Abusers can be treated at MMT facilities at least as effectively as heroin users in terms of treatment retention.

Weiss RD et al., Arch Gen Psych 2011;68(12): 1238-1246.

NEW THERAPEUTICS for Opioid Use Disorders

- Extended release medications (improve compliance)

**IMPLANTABLE Buprenorphine Probuphine™ (6 months)**

![EVA polymer + Buprenorphine = Probuphine](image)

**Retention of Patients**

- **Buprenorphine**
  - 100 patients at Week 0
  - 66% retention at Week 24

- **Placebo**
  - 100 patients at Week 0
  - 31% retention at Week 24

Ling, W. et al. JAMA 2010

**% Patients Failing Success**

- % Urines Negative (out of 72) Weeks 1 to 24

Rosenthal RN et al., Addiction 2013;105: 2141-2149
ED-initiated Buprenorphine Increased TX Engagement, Reduced Opioid Use & Inpatient

Infectious Clinic’s-Based Buprenorphine of Opioid-Dependent HIV+ Patients vs Tx Referral

- Clinic-Based BUP
- Referred Tx

% engaged in treatment 30th day

Buprenorphine: 78%
Referral: 37%

Participation in Opioid Agonist Therapy (%)

74% vs 41%

P<0.001

D’Onofrio JAMA. 2015.
Medications Assisted Therapies

Opioid Agonist Treatments
Decreased Heroin OD Deaths

Baltimore, Maryland, 1995-2009


Methadone Promotes Initiation Of Antiretroviral Therapy in IDU

**Buprenorphine (Suboxone)**

<table>
<thead>
<tr>
<th>Barriers to Buprenorphine Prescribing</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient nursing support</td>
<td>20%</td>
</tr>
<tr>
<td>Insufficient office support</td>
<td>19%</td>
</tr>
<tr>
<td>Payment issues</td>
<td>17%</td>
</tr>
<tr>
<td>Lack of institutional support</td>
<td>16%</td>
</tr>
<tr>
<td>Insufficient staff knowledge</td>
<td>12%</td>
</tr>
<tr>
<td>Pharmacy issues</td>
<td>8%</td>
</tr>
<tr>
<td>Low demand</td>
<td>7%</td>
</tr>
<tr>
<td>Office staff stigma</td>
<td>5%</td>
</tr>
<tr>
<td>Insufficient physician knowledge</td>
<td>3%</td>
</tr>
<tr>
<td>One or more barriers</td>
<td>55%</td>
</tr>
</tbody>
</table>

Walley AY et al J Gen Intern Med 2008; 23(9): 1393-8
All Certified Buprenorphine Physicians as of Nov 2015
Buprenorphine Physicians Certified for 30 patients
Buprenorphine Physician Certified for 100 Patients
Naltrexone (Revia/Vivitrol)

- Opioid antagonist with high affinity for mu-opioid receptors and lower affinity at kappa- and delta-opioid receptors
  - Effectively blocks the effects of heroin and other opioids
- Long half-life can be administered 3x week in doses of 100-150 mg
- Generally well tolerated, side effects can include:
  - GI distress, headaches, rare liver toxicity
- Poor adherence suggest use of injectable formulation
- Only given when acute withdrawal has been completed
Naltrexone (Revia/Vivitrol)

Improving Treatment Retention Using Long-Acting Preparations

- **Injections**
  - 1\(^{st}\) gen: oil suspension (e.g., Wedgewood’s naltrexone palmitate)
  - 2\(^{nd}\) gen: microspheres with NTX in suspension Vivitrol licensed in 2007 (approved for OUD in 2010)

- **Implants**
  - 1\(^{st}\) gen: compressed NTX c. 1996, now licensed in Russia (Prodetoxzone)
  - 2\(^{nd}\) gen: NTX mixed with polymer matrix c.2001, (Go-Medical)
Naltrexone (Revia/Vivitrol)

Efficacy of Naltrexone: oral vs. XR

- Retention in treatment is used as a primary outcome of treatment with NTX as a great majority of patients retained on NTX are abstinent from opioids
- Treatment retention rate in groups treated with XR preparations is twice that of the oral group, approximating 50-70% at 6 months

(Sullivan et al., 2015)
Improved Abstinence from Opioids and Reduced Craving with Extended-Release Naltrexone (XR-NTX) vs Placebo

Long-Acting Injectable Naltrexone

XR-NTX: Positive Phase 3 Results
Opioid Dependence

**Primary Endpoint**
Rates of opioid-free urine tests | P=0.0002

**Median Percent Opioid-Negative Urines**

- **Placebo:** N=124
- **XR-NTX:** N=126

**Secondary Endpoints: XR-NTX vs. Placebo**
- Improved study retention during 6-month study period | P=0.004
- Lower opioid craving scores | P<0.001
- Less incidence of relapse to physiologic opioid dependence | P=0.017
- Less self-reported opioid use | P=0.003

**IM Injection every 4 weeks for 24 weeks**

**Post Prison-Release Outcomes**

**Percent**

- **XR-NTX**
- **No Medication**

**Opiate Neg Urine Tox**
Weeks 1-8

*Krupitzky et al., Lancet 2010*

*Lee JD et al., Addiction 2015;100:1008-1014.*
Medication Assisted Treatment Options

<table>
<thead>
<tr>
<th></th>
<th>Agonist</th>
<th>Antagonist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain physiological dependence/withdrawal on stopping</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Reinforcing effects promoting medication adherence</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>Euphoric effects/abuse/diversion</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>Potential for tolerance development</td>
<td>+/-</td>
<td>-</td>
</tr>
<tr>
<td>Compatible with ongoing illicit opioid use</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>Protection against overdose</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>May alter use of other drugs</td>
<td>+/-</td>
<td>++</td>
</tr>
<tr>
<td>Duration of treatment</td>
<td>Indefinite?</td>
<td>?</td>
</tr>
<tr>
<td>Cultural/ideological barriers to availability</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>Professional/public opposition</td>
<td>++</td>
<td>+</td>
</tr>
</tbody>
</table>
Selection of Candidates for Naltrexone

- Patients who are not interested or able to be on agonist maintenance
  - Highly motivated for abstinence from all opioids (e.g., active in 12-step programs)
  - In professions where treatment with agonist is still controversial (e.g., healthcare professionals, pilots)
- Patients who are detoxified and abstinent but at risk for relapse
  - Released from a controlled setting (prison, residential program)
  - Moving back to old neighborhood,
  - With increased stress or worsening of psychiatric problems

Selection of Candidates for Naltrexone (2)

- Patients who failed prior treatment with agonist
  - Continued to have cravings and used of opioids, non-compliant with agonists, diverting/misusing agonists, dropped out of treatment
- Patients with less severe form of a disorder
  - Short history of use, lower level of use
- Young adults which are often unwilling to commit to a long-term agonist maintenance
- Individuals who use opioids sporadically
- Patients successful on agonist but who want to discontinue them without risking relapse
Patients who may be better candidates for agonists

- Patients with history of overdoses, particularly following detoxification
- Patients with serious psychiatric or medical problems
- Patients with limited social supports (unstable lives, homeless)
- Patients who have been opiate-free but never felt “normal”
  - Patients in whom psychiatric illness emerged/worsened after previous detoxifications (with or w/o naltrexone)
- Patients with chronic pain requiring chronic opioid treatment

Patients who may be better candidates for agonists (2)

- Patients with severe GI disorders exacerbating during withdrawal/abstinence
- Patients with advanced liver disease
  - Concerns about hepatotoxicity were not based on the representative data and the black-box warning was removed from the medication label
  - Patients with LFTs <3-5 ULN have minimal risk
Naltrexone Induction Strategies

Initiating Naltrexone

- Two phases of treatment: 1) detoxification, 2) naltrexone induction
- Current FDA-sanctioned method involves 7-10 days “washout” period between the two phases: last dose of opioid and first dose of NTX

Detoxification

- Agonist-assisted + opioid washout
- Symptomatic only
- Not using agonist during detox, shortens duration of “washout”

NTX Induction

- BUP taper
- Clonidine/bdz
- NTX

- Introducing naltrexone during detoxification accelerates the process
Clinical Challenges: Testing the Blockade

- It is expected that approximately a third of patients will ‘test’ blockade, often within 1-2 days post-injection
  - As blood level may be low the first 24hrs, oral supplementation may be considered on the first day
- Most commonly patients will ‘test’ 1-2 times with small amounts of opioid during the first week of treatment, after which they are reassured blockade works and do not resume use
- Some patients will use large amounts, for 1-3 weeks, but very few will persist in the use if they receive full blocking doses of the medication
- Continuous blockade prevents patients from relapsing to physical dependence and many of those patients prefer to remain on the medication
  - Relapse happens when patients miss the scheduled dose
Naltrexone Management

Clinical Challenges: Managing Relapse

- Some patients have increased craving and may use in weeks 3-4; in those more frequent injection (every 3 weeks) or oral supplementation is needed.
- Most commonly, the first sign of relapse is missing doses/injections. The blockade wears off 2-3 days after oral and 5-6 weeks after injectable doses:
  - Additional therapy, involving network members, is useful to improve adherence
  - Inpatient stabilization and another attempt at antagonist treatment
  - Residential treatment/sober house
  - Transition onto agonist
Naltrexone

Safety Concerns: Overdose

- Risk of overdose is significant if patient decides to stop taking naltrexone, stop attending treatment, and resume opiate use.

- Provide a detailed description of risks (signed consent for treatment), continue discussing risks in patients who continue use:

  "I understand that after I stop naltrexone I may be more sensitive to the effects of heroin and any other narcotics. The amount of heroin or narcotics I may have been using on a routine basis before I started naltrexone, might now cause overdose and death. I fully understand the nature and seriousness of this possible consequence. If I am not sure that I can avoid opiate use, I understand that I can be referred to alternative treatment programs, such as a methadone maintenance, which is an effective treatment for heroin dependence and has a reduced risk of fatal overdose."

- Fear of overdose applies to any completed detoxification or discontinuation of agonist maintenance. Naltrexone, especially long-acting may be protective against overdose for its duration of action.
## Naltrexone

### Controversies Surrounding Antagonist Based Treatment: OVERDOSE

- Overall, treatment with agonist or antagonists reduces mortality as compared to drug-free treatment.
- The risk of overdose is comparable while patients are *in treatment* with MAT (naltrexone oral/XR, buprenorphine, methadone).
- Mortality rates differ between patients who *discontinue treatment* with various medications:
  - Higher in patients treated with oral naltrexone as compared to methadone.
  - Higher in patients treated with oral vs. XR-naltrexone.
  - Comparable in patients treated with XR-naltrexone and methadone.
- The long “tail” on the serum naltrexone curve with XR preparation may provide protection during early experience of the drug-free lifestyle, which was previously marked by an elevated mortality.
Naltrexone

Controversies Surrounding Antagonist Based Treatment: DEPRESSION

- There are concerns about safety of this treatment: whether treatment with naltrexone increases risk of depression and suicidality
  - Though theoretically plausible, there is no systematic clinical evidence that naltrexone increases depression in this population
  - Depressive symptoms usually improve during early abstinence from opioids
- Opioid Use Disorder is a risk factor for suicide: 10% vs. 1.3% in the general population
- Depression and suicidality warning is included in the package insert for Vivitrol
  - Suicidality was reported in 5% of patients treated with Vivitrol (10% in oral naltrexone) in open-label long-term US safety study
  - No such warning on buprenorphine PI
Naltrexone

Controversies Surrounding Antagonist Based Treatment: EFFECTIVENESS

- There are concerns about inadequate efficacy of naltrexone as compared to agonists
  - There is much less efficacy data on naltrexone (oral and XR) as compared to methadone or buprenorphine
- What is the best way to compare the effectiveness of naltrexone and buprenorphine?
  - On what outcomes? – treatment retention, illicit opioid use, improvement in overall health, reduction of medical costs
  - What patient population? actively using vs. already abstinent, different patients may be attracted to each medication
  - Fewer active users are able to initiate treatment with naltrexone
  - Recent studies show comparable treatment retention but lower rates of continuing opioid use in naltrexone-treated patients
- The first, controlled, direct comparison trial is now underway
Naltrexone

Treatment Termination

- For many patients opioid dependence is a chronic and relapsing condition
  - Demands long-term treatment with intensity matching the severity and response to treatment
- Duration of treatment with naltrexone positively correlates with favorable outcome (relapse prevention)
  - It is not known what (if any) duration of treatment will reduce the risk to that of a general population
  - Ongoing psychosocial treatment and linking with long-term recovery-support services is necessary to sustain benefits of MAT
- Recommended duration of treatment with naltrexone in patients who achieved full remission and abstinence
  - Minimum: 6 months
  - Optimal: 1 year, but longer duration prevents relapse risk in the long run
Improving Implementation of Medication Assisted Treatments: Addiction

% Treatment Programs Offering FDA-approved SUD medications

- Buprenorphine: 25%
- Methadone: 9%
- Tablet naltrexone: 17%
- Injectable naltrexone: 9%
- Disulfiram: 16%
- Acamprosate: 19%

% OTP patients receiving methadone, buprenorphine, or vivitrol

- Methadone: 26.4%
- Buprenorphine: 3.9%
- Vivitrol: 0.3%
- Not receiving Methadone, Buprenorphine or Vivitrol: 69.4%


2012 N-SSATS Data, SAMHSA
One strategy to mitigate opioid drug overdose deaths includes increasing the accessibility and utilizing of Naloxone

- Naloxone is a safe and effective antidote for opioid-related overdose that has been used for more than 40 years.

- Naloxone has no abuse potential and can reverse a life-threatening overdose by blocking the opioids effects, restoring breathing and preventing death.
Opioid overdose prevention programs

- In 1996, Community-based programs began distributing naloxone directly to patients at high risk for overdose.

- Programs have since expanded to provide overdose training and naloxone kits to laypersons who might witness an opioid overdose in efforts to reduce opioid overdose mortality in these areas.

- These programs have since shown to be safe and cost-effective by providing naloxone kits to 152,283 laypersons and received reports of 26,463 overdose reversals.
(Figure 3) Number* and location of local drug overdose prevention programs providing naloxone to laypersons, as of June 2014, and age-adjusted rates† of drug overdose deaths§ in 2013 — United States

* Total N = 644; numbers on map indicate the total number of programs within each state.
† Per 100,000 population.
§ CDC, National Center for Health Statistics; Compressed Mortality File 1999–2013 on CDC WONDER Online Database, released January 2015.
Naloxone Rescue Kit Contents

Naloxone Rescue Kit IM

NDC 99999-9991-08

Naloxone Rescue Kit Nasal

NDC 09999-9991-07
Naloxone Autoinjector- Evzio®

Improving OD Treatments: Naloxone for Overdose

- Lay-friendly administration: intranasal naloxone

- *AntiOp*, developing disposable naloxone nasal spray. Product could be on the market 2015

- *Lightlake Therapeutics*, conducting clinical trials with intranasal naloxone for binge eating disorder will test this for opioid overdose

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*BMJ*

Opioid overdose rates and implementation of overdose education and nasal naloxone distribution in Massachusetts: interrupted time series analysis

Alexander Y Walley assistant professor of medicine, medical director of Massachusetts opioid overdose prevention pilot, Ziming Xuan research assistant professor, H Holly Hackman epidemiologist, Emily Quinn statistical manager, Maya Doe-Simkins public health researcher, Amy Sorensen-Alawad program manager, Sarah Ruiz assistant director of planning and development, Al Ozonoff director, design and analysis core
Naloxone Access Laws

Forty-two jurisdictions now have laws that address access to naloxone for people at risk of opiate overdose.

Jurisdictions: 42 (AL, AR, CA, CO, CT, DC, DE, FL, GA, ID, IL, IN, KY, LA, MA, MD, ME, MI, MN, MS, NC, ND, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, TN, TX, UT, VA, VT, WA, WI, WV)

Immunity from Criminal Prosecution Provided for Prescribers

Thirty jurisdictions provide criminal immunity for prescribers who prescribe, dispense, or distribute naloxone to laypersons.

Jurisdictions: 30 (AL, AR, CA, CO, CT, DE, FL, GA, ID, IL, LA, MA, MN, MS, NC, ND, NE, NH, NJ, NM, NV, NY, OH, PA, SC, TX, VT, WA, WI, WV)

Prescription by Standing Order Authorized

Thirty-three jurisdictions authorize prescriptions of naloxone by standing order for people at risk of opiate overdose.

Jurisdictions: 33 (AL, AR, CA, CO, DE, GA, IL, IN, KY, LA, MA, MD, ME, MN, MS, NC, ND, NH, NJ, NV, NY, OH, OR, PA, RI, SC, TN, TX, VA, VT, WA, WI, WV)
Ongoing Efforts to Increase the Accessibility of Naloxone

• In February 2016, Walgreens announced that they will make Naloxone available without a prescription in 35 states throughout the year

• CVS and other pharmacies are planning for the same

• Pharmacies will also be providing safe disposal medication kiosks in a majority of states
Existing Work in Kansas to Address Drug Poisoning Deaths

- The Kansas Medication Disposal Program at the Kansas Department of Health and Environment offers Kansans a convenient, safe, and environmentally responsible option for disposing of unwanted medications. Proper disposal reduces accumulation in the home and the subsequent risk of unintentional poisoning, drug misuse, abuse, and diversion. For more information, visit www.kdheks.gov/waste/about_medwaste.html

- The 2015 Kansas Behavioral Risk Factor Surveillance System is collecting data on prescription drug misuse among Kansas adults.

- The University of Kansas Hospital’s Poison Control Center is a 24-hour toll free hotline available throughout the state, 1-800-222-1222. Critical care nurses, medical doctors nationally certified in poisoning management and pharmacists operate the hotline.

- The Kansas Tracking and Reporting of Controlled Substances (K-TRACS) operated by the Kansas Board of Pharmacy is the state’s prescription drug monitoring program that aims to reduce inappropriate prescribing behavior and drug abuse. This program started in 2010 and actively tracks all Scheduled II-IV controlled substances dispensed in Kansas.
Resources:

- Providers’ Clinical Support System For Opioid Therapies  [http://pcss-o.org/](http://pcss-o.org/)
- Shatterproof Organization  [https://www.shatterproof.org/](https://www.shatterproof.org/)
- Adolescent Center for Treatment – Johnson County  [https://www.jocogov.org/facility/adolescent-center-for-treatment](https://www.jocogov.org/facility/adolescent-center-for-treatment)
- Cottonwood Springs Behavioral Health Hospital  [www.cottonwoodsprings.com/](http://www.cottonwoodsprings.com/)
- David Willey MD  Email:  [dwilley@kumc.edu](mailto:dwilley@kumc.edu) or  [davidwilley@spsh.com](mailto:davidwilley@spsh.com)
References:


