Naloxone for Opioid Safety

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Disclosure Information

Gilead, Donated ledipasvir-sofosbuvir, Study, 2016-present
Alkermes, Donated ER-naltrexone, Study, 2014-2015
Outline

1. Role / Effectiveness of Lay Naloxone
2. Potential impact of OTC status
3. Research gaps
Outcomes of Heroin Overdose

- Self-Managed: 48%
- Emergency Medical Care: 48%
- Death: 4%

Naloxone Programs, 2014

Naloxone/Overdose Legislation

- Naloxone is **not** a controlled substance

- States on this map have added legal protections, such as authorizing:
  - Prescribing/dispensing to potential bystanders
  - Third-party administration by lay bystanders
  - Prescribing/dispensing by standing order or directly from pharmacies

- States in **green** also have laws protecting from prosecution when help is sought

Source: [www.lawatlas.org](http://www.lawatlas.org)
## Predictors of Using Naloxone to Reverse an Overdose

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Adjusted Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use heroin</td>
<td>1.85</td>
</tr>
<tr>
<td>Use methamphetamine</td>
<td>1.71</td>
</tr>
<tr>
<td>Previously witnessed OD</td>
<td>2.02</td>
</tr>
</tbody>
</table>

Fatal Opioid Overdose Rates by Naloxone Distribution in Massachusetts

In California, counties with naloxone programs had an overall slower rate in the growth in opioid overdose death compared to counties without naloxone programs.

Naloxone Cost-Effectiveness

Cost: $421 per quality-adjusted life-year gained

Benefit: 164 naloxone scripts = 1 prevented death

Emerging data suggests that providing naloxone may encourage patients to be safer with their opioid use. If this is the case, the intervention would be cost-saving and 36 prescriptions would prevent one death.

Lay Naloxone and Fentanyl-Related Deaths During Two Fentanyl Outbreaks in San Francisco, 2015

Source: Drug Overdose Prevention/Education Project, San Francisco
Abstinence Settings

**Scottish Naloxone Program, Pre-Release**
- 36% reduction in opioid-related deaths in the 4 weeks post-release
- At least 1 death averted per 285 kits distributed


**Opioid Overdose Deaths Among Persons with OUD in England**

<table>
<thead>
<tr>
<th></th>
<th>Deaths / 1000py</th>
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</thead>
<tbody>
<tr>
<td>Out of Treatment</td>
<td>~4.3</td>
</tr>
<tr>
<td>Residential Treatment</td>
<td>3.9</td>
</tr>
<tr>
<td>1-28 days out</td>
<td>18.8</td>
</tr>
</tbody>
</table>


Overdose prevention, including prescribing or dispensing naloxone, is an essential complement to both detoxification services as well as medically supervised withdrawal.”
Primary / Other Medical Care Settings

Expected Opioid-Related ED Visits / Month by Receipt of Naloxone

Behavior Change Tied to Receipt of Naloxone (N=60)

Positive
- More cautious about dosing or timing
- Improved knowledge about opioids and overdose
- Reduced polysubstance use
- Not using opioids alone

# Opioid / Overdose History of Patients on Opioids for Chronic Pain

<table>
<thead>
<tr>
<th>Patient Characteristics (N=60)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of overdose</td>
<td>37%</td>
</tr>
<tr>
<td>Overdose</td>
<td>20%</td>
</tr>
<tr>
<td>“Bad reaction” consistent with overdose</td>
<td>17%</td>
</tr>
<tr>
<td>Perceived risk of personal overdose</td>
<td>Low (2 / 10)</td>
</tr>
</tbody>
</table>

Interviewer: How many times would you say you’ve had these bouts of delirium, or you’ve stopped breathing because of opioids?

Patient: Ever? 8-10 times.

Interviewer: And how many times has [naloxone] been used on you?

Patient: Oh boy. That would be really hard to answer. I’d say somewhere in the neighborhood of 12-15 times.

Interviewer: So, around 12-15 times someone has given you [naloxone] because you’ve stopped breathing because of opioids?

Patient: Yes. Medical staff each time. Because of the opioids, I’ve stopped breathing.

Interviewer: Over what period of time?

Patient: Over 1 year.

Clinicians should incorporate into the management plan strategies to mitigate risk, including offering naloxone when factors that increase risk for opioid overdose, such as history of overdose, history of substance use disorder, higher opioid dosages (>50 MME/day), or concurrent benzodiazepine use, are present.”
2. Risks / Benefits to OTC Access

OTC Access

- No need for clinicians
- Some products OTC?

Prescription Only

- Standing orders
- Insurance coverage
3. Research Gaps

- New terminology for overdose
- Indications for co-prescribing
- Naloxone in treatment programs / relapse risk
- Implementation strategies
- Optimal dosing regimen
0.4mg/mL IM Naloxone Reversals in Pittsburgh in Setting of Increasing Fentanyl-Involved Overdose Events

Source: Prevention Point Pittsburgh
Percentage Vomiting Among Persons Revived with Lay Naloxone

Santa Fe (N=95)  North Carolina (N=6)  San Francisco (N=702)

Source: Santa Fe Mountain Center; North Carolina Harm Reduction Coalition, DOPE Project
People who use drugs are in best positioned to utilize lay naloxone.

While OTC access would partly alleviate logistic barriers, the major barrier is cost.

Co-prescribing naloxone with opioids is feasible and may have ancillary benefits.

More research is needed regarding overdose terminology, naloxone in SUD treatment settings, dosing strategies, and implementation.