CHOOSING WISELY: PHARMACIST-INITIATED NALOXONE DISPENSING

JULY 13, 2017
1:30 – 3:00 PM

ACPE UAN: 0107-9999-17-087-L01-P 0.15 CEU/1.5 hr
              0107-9999-17-087-L01-T 0.15 CEU/1.5 hr

Activity Type: Application-Based

Learning Objectives for Pharmacists and Pharmacy Technicians: Upon completion of this CPE activity participants should be able to:
1. Describe legislation surrounding naloxone access in your state.
2. Discuss the prevalence of opioid overdose and subsequent need for increased access to naloxone.
3. Determine when naloxone co-prescription is appropriate for patients on chronic opioid therapy.
4. Assess a patient’s risk for overdose or serious opioid-induced respiratory depression (OSORD).
5. Select an appropriate naloxone product based on patient-specific and agent-related factors.
6. Educate a patient and/or caregiver on appropriate use and administration of naloxone.

Speaker: Jeffrey Bratberg, PharmD, BCPS
Dr. Bratberg is a Clinical Professor of Pharmacy Practice at the University of Rhode Island College of Pharmacy. In 2012, Dr. Bratberg co-developed an overdose education and naloxone training program for pharmacists in the first statewide Collaborative Pharmacy Practice Agreement for naloxone. This was a result of a partnership between the RI Department of Health, Board of Pharmacy, an addiction medicine physician, and chain drug store pharmacists across the state. He is an unpaid consultant for prescribetoprevent.org, a website devoted to opioid overdose education and naloxone training, that has trained over 10,000 pharmacists nationwide. In 2015, he was selected to serve as a member of the Rhode Island Governor’s Overdose Prevention and Intervention Task Force. He is a consultant or co-investigator on federal grants from NIDA, CDC, and AHRA. Dr. Bratberg is the 2016 NASPA National Cardinal Health Generation Rx Award winner and the guest editor of the first ever special issue on Opioid Safety and Naloxone of the Journal of the American Pharmacists Association.

Speaker Disclosure: Jeffrey Bratberg reports no actual or potential conflicts of interest in relation to this CPE activity. Off-label use of medications will be discussed during this presentation.
Choosing Wisely: Pharmacist-initiated Naloxone Dispensing
Jeffrey Bratberg, PharmD
Clinical Professor of Pharmacy Practice
University of Rhode Island

Disclosure

• Jeffrey Bratberg reports:
  • Speakers bureau member for Merck and Sanofi-Pasteur
  • Adult vaccinations only
Pharmacy-Based Naloxone Implementation

- Policy
- People
- Environment
- Assessment

- State/Health/Mental Health Policy
  - PMP
  - Naloxone access
  - Insurance coverage
  - Good Samaritan
  - First responder
  - Harm reduction/syringe access

- Corporate Policy
  - Store response
  - Training
  - Stocking
  - Technician role
  - Metrics
  - Incentives
Learning Objectives

Upon successful completion of this activity, pharmacists and pharmacy technicians should be able to:

1. Describe legislation surrounding naloxone access in your state.
2. Discuss the prevalence of opioid overdose and subsequent need for increased access to naloxone.
3. Determine when naloxone co-prescription is appropriate for patients on chronic opioid therapy.
4. Assess a patient’s risk for overdose or serious opioid-induced respiratory depression.
5. Select an appropriate naloxone product based on patient-specific and agent-related factors.
6. Educate a patient and/or caregiver on appropriate use and administration of naloxone.

What legislation grants pharmacists the ability to initiate naloxone?
Issue Data

• Received ~60 submissions, 30 accepted (50% acceptance rate)
• 3 letters
• 6 Research
• 6 Notes
• 2 Tools
• 11 Experiences
• 1 Commentary
• 1 Editorial

Search for your state’s Naloxone laws
PDAPS.ORG
Co-Rx Does not Increase Liability Risk

- CDC recommends
- VA implementing system-wide
- Proven success for distribution to heroin users
- Supported by every major healthcare association
- The legal risk associated with prescribing naloxone is no higher than that associated with any other medication, and is lower than many
- In 2015, an expert legal review did not identify a single instance in which prescription or dispensing of naloxone in the outpatient setting was grounds for a lawsuit.

Davis CS et al. Subst Abus. 2016 Sep 20:0. [Epub ahead of print]

Co-Rx Does not Increase Liability Risk

- The liability risk of prescribing naloxone in good faith to patient at risk of overdose (or, in states where such prescribing is permitted, to an associate of such a patient) is either extremely low or absent entirely.
- Where a prescriber determines, in his or her clinical judgment, that a patient is at risk of overdose, co-prescribing naloxone is a reasonable and prudent clinical and legal decision.
- No clinician should fail or refuse to issue such a prescription based on liability concerns.

Davis CS et al. Subst Abus. 2016 Sep 20:0. [Epub ahead of print]
Comprehensive Addiction and Recovery Act of 2016 (CARA)

- On July 22, 2016, President Obama signed into law the Comprehensive Addiction and Recovery Act (P.L. 114-198)
- Senate 92-2; House 407-5
- This is the first major federal addiction legislation in 40 years, and the most comprehensive effort undertaken to address the opioid epidemic
- Authorizes $181 million in new funding *(requires $1.1 Billion)*
- Coordinates six types of responses

Prevention  Treatment  Recovery  Law enforcement  Criminal justice reform  Overdose reversal


An Act Relating to Insurance: 2016 H 7710
Sub A enacted 6/28/2016, Effective Jan 1, 2017

**Opioid antagonists. –**

(a) Every individual or group health-insurance contract, plan, or policy that provides prescription coverage that is delivered, issued for delivery, amended or renewed in this state on or after January 1, 2017, shall provide coverage for at least **one generic opioid antagonist and device**. Prior authorization may be required for non-generic forms of opioid antagonists and devices.
(b) As used in this section: "Opioid antagonist" means naloxone hydrochloride and any other drug approved by the United States Food and Drug Administration for the treatment of opioid overdose.

(c) The coverage mandated by this section shall include generic opioid antagonists prescribed or dispensed via standing order or collaborative-practice agreement intended for use on patients other than the insured. Prior authorization may be required for non-generic forms of opioid antagonists and devices.

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**Important and Unique**

- Illinois and New York also mandate insurance coverage of naloxone
- Only Rhode Island:
  - Does not limit mandate to patients with substance use disorder (SUD) diagnoses and/or treatment
  - Mandates third-party coverage
  - Essentially covering all beneficiaries
Why should we increase access to naloxone?

Age-Adjusted Rate of Drug Overdose Deaths 2010-15

- Total Drug overdoses all-time high: 52,404 deaths
- Opioid OD 33,091 (63% of total), ↑15% from 2014
- Largest change in synthetics: MA, NH, OH, RI, WV
- DEA Nov 2016: Rx drugs, heroin, and fentanyl most significant drug-related threats to the United States

Death rates from Rx opioids, heroin, & synthetics
↑2.6%  ↑20.6%  ↑72.2%

Leading Causes of Death in Nonmetropolitan and Metropolitan Areas — United States, 1999–2014


National Rate of Opioid-Related Inpatient Stays and Emergency Department Visits, 2005-2014

Rhode Island:
Orienting patients to greater opioid safety: models of community pharmacy-based naloxone

DOI 10.1186/s12954-015-0058-x
Rationale for Overdose Education and Naloxone Rescue Kits

- Most opioid users do not use alone
- Known risk factors:
  - High dose opioids, co-prescription benzodiazepine + opioid, mixing substances, abstinence, using alone, chronic medical illness
- Opportunity window:
  - Opioid overdoses take seconds (fentanyl-contaminated heroin to hours (long-acting opioids)
  - Reversible with naloxone
- Bystanders are trainable to recognize and respond to overdoses
- Fear of public safety

Modified from Walley A, Bratberg J, Davis C. "Prescribe to Prevent: Overdose Prevention and Naloxone Rescue Kits for Prescribers and Pharmacists." http://www.opioidprescribing.com/naloxone_module_1

Fatal Opioid Overdose Rates by OEND Implementation

Observational Evidence from Massachusetts INPEDE OD Study

Characteristics of Fentanyl Overdose — Massachusetts, 2014–2016

Percentage of opioid overdose deaths involving fentanyl, heroin/morphine (without fentanyl), and other opioids (without fentanyl, heroin/morphine) — Barnstable, Bristol, and Plymouth counties, Massachusetts, October 2014–March 2015.

No evidence of compensatory drug use risk behavior among heroin users after receiving take-home naloxone

Heroin use, polydrug use, and ASI drug composite score prior to, and 1 and 3 months following naloxone and overdose training.
* Indicates a significance difference between active users and those in agonist maintenance at p < 0.05. # indicates significant difference from baseline assessment.


Why and when should we coprescribe naloxone?
Common Risks for Opioid Overdose

- Mixing Substances/Polypharmacy
  - Alcohol, stimulants, marijuana, prescribed and non-prescribed medications

- Previous Overdose

- Alcohol,
- stimulants,
- marijuana,
- prescribed and non-prescribed medications

- Social Isolation
  - Using alone

- Opioid Dose and Changes in Purity

- Addiction History
  - • Release from incarceration
  - • Completion of detoxification
  - • Relapse

- Chronic Medical Illness
  - Lung, liver, and kidney compromise

- Abstinence


Benzodiazepine prescribing patterns and deaths from drug overdose among US veterans receiving opioid analgesics: case-cohort study


Unadjusted death rates for drug overdose by benzodiazepine prescription history and daily opioid dose. Error bars represent 95% confidence intervals. Unadjusted overdose death rates are estimates for entire source population.
Citizen Petition: Black Box Warnings

ACTION REQUESTED

The Petitioner requests the FDA to:

1. Amend current black box warnings on all opioid analgesic and benzodiazepine class medications to state:
   
   a. Labeling for all Opioid Class Medications should read:

   WARNING: CONCURRENT USE WITH BENZODIAZEPINES REDUCES THE MARGIN OF SAFETY FOR RESPIRATORY DEPRESSION AND CONTRIBUTES TO THE RISK OF FATAL OVERDOSE, PARTICULARLY IN THE SETTING OF MISUSE.

   b. Labeling for all Benzodiazepine Class Medications should read:

   WARNING: CONCURRENT USE WITH OPIOIDS REDUCES THE MARGIN OF SAFETY FOR RESPIRATORY DEPRESSION AND CONTRIBUTES TO THE RISK OF FATAL OVERDOSE, PARTICULARLY IN THE SETTING OF MISUSE.

2. Require medication guides for both classes of medications that specifically warn patients of the potential dangers of combined use of opioids and benzodiazepines.

Results

- 38% of 1985 patients receiving long term opioids co-prescribed naloxone rescue kits
- Opioid-related ED visits were reduced by 47% at 6 months and 63% at 12 months among those who were co-prescribed naloxone, compared with those who were not
- No change was detected in the net prescribed opioid doses for patients who were co-prescribed naloxone

Implementing Models in the Field

Three approaches to patient selection for overdose risk reduction:

- **Self-selection**: patient or family member requests based on self-assessment of risk
- **Risk-based**: provider assesses individual risk and prescribes based on criteria
- **Universal**: all patients prescribed an opioid, independent of risk characteristics

Each approach has different implications for policies and procedures, staffing, supply, and cost

National Pharmacist Survey (APhA)
Summary (9/15)

- Nationally, pharmacist’s interest, willingness to stock and provide naloxone are high
- Attitudes toward overdose prevention and naloxone align with perceptions of pharmacist as preventing injury, providers of other harm reduction supplies
- Naloxone dispensing experience is uncommon, infrequent
- **Least confident** in ability to proactively identify those at risk/would benefit and to educate on naloxone use
  - Clear policy/rubric for proactive offering of naloxone
  - Trainings needed: pharmacy schools, online, in stores
- Experience with naloxone and discussing overdose prevention needs practice
  - Community based organizations, harm reduction groups can help

Kentucky: Pharmacists’ Willingness to participate in dispensing naloxone

http://dx.doi.org/10.1016/j.japh.2016.12.064

![Graph showing willingness of Kentucky pharmacists to participate in dispensing naloxone](image)

**Figure 1.** Kentucky pharmacists’ willingness to participate in opioid overdose risk prevention strategies. Willingness scores were collapsed for clarity (1 and 2 = Not Willing, 3 and 4 = In the Middle, 5 and 6 = Willing). Responses of “Don’t Know” are not included on the figure.

<table>
<thead>
<tr>
<th>Factor</th>
<th>OR</th>
<th>95% CI</th>
</tr>
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<tbody>
<tr>
<td>Terminal degree</td>
<td>Ref.</td>
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</tr>
<tr>
<td>BSPharm</td>
<td>1.13</td>
<td>0.81-1.59</td>
</tr>
<tr>
<td>PharmD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (PhD, others)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years in practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 to 2</td>
<td>Ref.</td>
<td></td>
</tr>
<tr>
<td>3 to 5</td>
<td>0.80</td>
<td>0.59-1.13</td>
</tr>
<tr>
<td>6 to 10</td>
<td>0.79</td>
<td>0.52-1.19</td>
</tr>
<tr>
<td>11 to 20</td>
<td>0.94</td>
<td>0.63-1.41</td>
</tr>
<tr>
<td>&gt;20</td>
<td>1.05</td>
<td>0.68-1.61</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>1.26*</td>
<td>1.01-1.59</td>
</tr>
<tr>
<td>Male</td>
<td>Ref.</td>
<td></td>
</tr>
<tr>
<td>Pharmacy practice setting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community pharmacy</td>
<td>1.15</td>
<td>0.89-1.49</td>
</tr>
<tr>
<td>Other practice setting (e.g., hospital)</td>
<td>Ref.</td>
<td></td>
</tr>
<tr>
<td>Experience with naloxone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever administered naloxone</td>
<td>1.32</td>
<td>0.82-2.13</td>
</tr>
<tr>
<td>Ever dispensed naloxone for prevention</td>
<td>1.41</td>
<td>0.88-2.24</td>
</tr>
<tr>
<td>Pharmacist confidence*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to identify signs of overdose</td>
<td>1.10</td>
<td>0.96-1.26</td>
</tr>
<tr>
<td>Ability to identify individuals at risk</td>
<td>1.17</td>
<td>1.03-1.34</td>
</tr>
<tr>
<td>Ability to educate patients about naloxone</td>
<td>1.56*</td>
<td>1.38-1.78</td>
</tr>
</tbody>
</table>
Perpetuating stigma or reducing risk? Perspectives from naloxone consumers and pharmacists on pharmacy-based naloxone in 2 states (RI/MA)

"If it was up to me, every single opiate prescription that was being filled would also be dispensed with Narcan. Even if the patients aren’t using them or the families aren’t using it, it would help, I think, to over time kind of reduce the stigma and that Narcan is only for heroin.” – RI Pharmacist in Focus Group ‘16

“[W]e can say, you know, I have to hand this out to you on any prescription refill, and this is just to let you know there is a little section here on Narcan and if you have any questions, please feel free to ask and leave it at that and move on.” – MA Pharmacist in Focus Group ‘16

http://dx.doi.org/10.1016/j.japh.2017.01.013
8 Focus Groups (n=61) Results: Pharmacy Naloxone

“...[You can take] the stigma away [from naloxone] by making it...as common as ...'Do you want fries with that?’” – Caregiver, MA

- Very few had attempted to obtain NLX at a pharmacy, mostly because they did not know it was there, or how to ask for it
- Relationships to pharmacists were mixed: positive, negative, impersonal
  - Patient groups tended to have very positive relationships
  - Generally see pharmacists as knowledgeable, helpful but very busy
- Universally endorsed, considered LEAST stigmatizing was an automatic opt-out (“corporate/state policy”) offering naloxone

- Pharmacists: Very uncomfortable, stigmatizing, could “lead to people thinking you think they are an addict.”
- Offending patients was a concern of pharmacists. They felt standardized, opt-out naloxone offer policies would reduce concerns

Pharmacy-Based Naloxone Implementation

- Associations
  - Training – CPE
  - Policy/education champions
- Pharmacists
  - Training
  - Stigma
  - Workload/priority
  - Reimbursement
  - Metrics/ incentives
- Patients
  - Stigma / Acceptance
  - Awareness
  - Rx opioid user vs. non-medical user vs. injection user
How can we target overdose risk?

50 MME/day:
- 50 mg of hydrocodone (10 tablets of hydrocodone/acetaminophen 5/300)
- 33 mg of oxycodone (~2 tablets of oxycodone sustained-release 15 mg)
- 12 mg of methadone (~3 tablets of methadone 5 mg)

90 MME/day:
- 90 mg of hydrocodone (9 tablets of hydrocodone/acetaminophen 10/325)
- 60 mg of oxycodone (~2 tablets of oxycodone sustained-release 30 mg)
- ~20 mg of methadone (4 tablets of methadone 5 mg)

Opioid Induced Respiratory Depression (OIRDO) Screening Tool

Risk Index for Overdose or Serious Opioid-induced Respiratory Depression (RIOSORD)

- 15-item questionnaire
  - PMH – especially mental health
  - Use of long-acting opioids
  - Opioid dose and MED
  - Hospitalization/ED visit

- Opioid Induced Respiratory Depression (OIRD) Probability based on Calculated Risk Index

### Morphine Equivalents

<table>
<thead>
<tr>
<th>Opioid (doses in mg/day)</th>
<th>Conversion Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Codeine</td>
<td>0.15</td>
</tr>
<tr>
<td>Fentanyl transdermal (mcg/hr)</td>
<td>2.4</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>1</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>4</td>
</tr>
<tr>
<td>Methadone (dose dependent)</td>
<td>4-12</td>
</tr>
<tr>
<td>Morphine</td>
<td>1</td>
</tr>
<tr>
<td><strong>Oxycodone</strong></td>
<td><strong>1.5</strong></td>
</tr>
<tr>
<td>Oxymorphone</td>
<td>3</td>
</tr>
</tbody>
</table>

- Oxycodone 5 mg Q4hr
- Total daily dose (TDD) = 30 mg
- Conversion factor = 1.5
- Morphine Equivalent Dose (MED) = 45 mg
Review the list of current prescriptions and optimize medication safety:

- Prescription monitoring program?
- Multiple psychoactive or sedating medications?
- Dispensing buprenorphine or methadone?
- Multiple prescribers and/or multiple pharmacies?
- Patient has a lockbox for medications?

Review the list of current prescriptions and optimize medication safety:

- Are prescribers aware of all prescriptions?
- Is patient aware of risks?
- Children or pets at home?
- Patient, friends and family know how to respond?
- Do they have naloxone?
Offer Naloxone to Everyone

**Opt-out Options**
- Any opioid prescription
- Has prescription for IR & ER opioid
- Any opioid/benzo rx combination
- Any methadone (pain)
- Any buprenorphine
- Syringe purchase w/o concurrent injectable medication

**Opt-in Options**
- Friends and family of those at risk
- Syringe buyer request
- Prescriptions
- Referral from treatment
- Referral from correctional institution
- Referral from behavioral health

Expanding Access to Naloxone for Family Members: The MA Experience

- Authors: Bagley SM, Forman L, Ruiz S, Walley A
- Objective - Describe characteristics of rescue attempts by participants in MDPH OEND program
- Rescue details documented on refill form
- 10,827 family members enrolled retrospectively 2008-2015 from community support groups (Learn2Cope.org)
- 860 rescue attempts documented
- Limitations
  - Naloxone provided at no cost from MDPH
  - Self-reported information – exact relationship unverified
  - No follow up post-OEND (likely underreporting of rescues)
  - Unpublished (Presented at 2016 AMERSA Conference 11/16)

Data used with permission – email communication, Bagley S 2016 Dec 21.
Results: Characteristics of Rescue Attempts

<table>
<thead>
<tr>
<th>Response</th>
<th>Overall (n=4373)</th>
<th>Family Member (n=860)</th>
<th>Non Family Member (n=3513)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who Overdosed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friend</td>
<td>65.9% (2846)</td>
<td>55.7% (475)</td>
<td>68.4% (2371)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Stranger</td>
<td>9.0% (391)</td>
<td>7.9% (67)</td>
<td>9.3% (324)</td>
<td></td>
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<tr>
<td>Client</td>
<td>2.7% (118)</td>
<td>2.6% (22)</td>
<td>2.8% (96)</td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>7.8% (336)</td>
<td>7.2% (61)</td>
<td>7.9% (275)</td>
<td></td>
</tr>
<tr>
<td>Partner</td>
<td>7.5% (326)</td>
<td>6.4% (55)</td>
<td>7.8% (271)</td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td>7.0% (304)</td>
<td>29.3% (173)</td>
<td>3.8% (131)</td>
<td></td>
</tr>
<tr>
<td>Gender of Overdose Victim</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(female)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emergency Help</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sought</td>
<td>37.2% (1595)</td>
<td>36.0% (304)</td>
<td>37.5% (1291)</td>
<td>0.6222</td>
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<tr>
<td>Survived (yes)</td>
<td>43.0% (1840)</td>
<td>51.4% (434)</td>
<td>40.9% (1406)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Data used with permission – email communication, Bagley S 2016 Dec 21.

Naloxone Conversation Starters

“Opioids can cause bad reactions that make your breathing slow or even stop. This can happen if your body can’t handle the opioids you take that day, or if you take opioids with alcohol or other drugs. Naloxone is a lifesaver, just like a seatbelt or a fire extinguisher.”

“These medications can be helpful but have a range of side effects, like slowing down or even stopping breathing completely. Naloxone can help if this happens by restoring breathing.”

“Opioid medications increase the risk of breathing emergency for the person who takes the opioid and anyone in their household. Naloxone is needed in case of emergency.”

“Let’s keep you and your family as healthy as possible with these medications in your house. Just in case, get naloxone.”
Practice Naloxone Offer

• Play the pharmacist and the patient
• Patients can be any of the following:
  • High dose opioids
  • Opioids and benzodiazepines
  • Nonprescription syringe purchaser

• Styles to use
  • Scripts
  • Motivational interviewing
  • Combination

Syringe Bag Stickers
Pharmacy-Based Naloxone Implementation

Environment

- Store/hospital/clinic/ED/Corrections/Treatment Center
  - Electronic reminders, stickers, posters, cards
  - Treatment referral / collaborations
- Community/public
  - Awareness/ stigma
  - Billboards, social media
  - First responders, recovery groups, parent groups

Which products should I stock, recommend, and dispense?
The Rising Price of Naloxone – Risks To Efforts to Stem Overdose Deaths

<table>
<thead>
<tr>
<th>Naloxone Product</th>
<th>Manufacturer</th>
<th>Previous $ Price (year)</th>
<th>Current $ Price (2016)</th>
<th>[% increase]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injectable or intranasal 1 mg/mL - 2 mL vial</td>
<td>Amphastar</td>
<td>20.34 (2009)</td>
<td>39.60</td>
<td>[95%]</td>
</tr>
<tr>
<td>Injectable 0.4 mg/mL 10 mL vial</td>
<td>Hospira</td>
<td>62.29 (2012)</td>
<td>142.49</td>
<td>[128%]</td>
</tr>
<tr>
<td>Injectable 0.4 mg/mL 1 mL vial</td>
<td>Mylan</td>
<td>23.72 (2014)</td>
<td>23.72</td>
<td>[0%]</td>
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<tr>
<td>Injectable 0.4 mg/mL 1 mL vial</td>
<td>West-Ward</td>
<td>20.40 (2015)</td>
<td>20.40</td>
<td>[0%]</td>
</tr>
<tr>
<td>Single-use auto-injector two-pack 0.4 mg</td>
<td>Kaleo Approved ‘14</td>
<td>690 (2014)</td>
<td>4500</td>
<td>[552%]</td>
</tr>
<tr>
<td>Single-use nasal spray two-pack 4 mg</td>
<td>Adapt Approved ‘15</td>
<td>150 (2015)</td>
<td>150 #</td>
<td>[0%]</td>
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</tbody>
</table>

^Prices info obtained from Medi-Span Price Rx

Pharmacy-Based Naloxone Implementation

- Naloxone dispensing from pharmacies
  - Pharmacy-origin
  - Prescriber origin
- Correlate to:
  - Overdose deaths
  - Opioid prescribing
  - Opioid-benzodiazepine co-prescribing
  - Syringe sales
  - HIV and HCV diagnoses

Assessment
Questions?
Jeffrey Bratberg, PharmD
Clinical Professor of Pharmacy Practice