Opioid Overdose in the United States

The rate of fatal overdose in the U.S. has tripled since 1991. Widespread use of opioids, particularly synthetic opioid pain relievers, account for most of the increase. Understanding this category of drugs States have enacted various policies that seek to reduce fatal opioid overdose.

This presentation will discuss various aspects of this category of drugs and the associated problems, as well as summarize year to date outcomes data for the MAT PDOA SAMHSA Grant.
Where are we now?

Drug overdoses killed more people in 2015 than HIV/AIDS at its 1995 peak

Total deaths in America by cause and year

Drug overdose deaths in America

Note: Some deaths on this chart may overlap if they involve multiple drugs

Source: https://www.vox.com/2017/2/1/14190234/drug-overdose-deaths-

Life expectancy has improved in the US, but a 2015 dip shows that might be changing

Life expectancy fell from 78.9 to 78.8 years in 2015

The last major decline was in 1993, when life expectancy fell by 0.3 years

Source: National Vital Statistics System
Credit: Sarah Frostenson
White Americans die disproportionately from drugs, but that could be changing

Rate of deaths for every 100,000 people by race and ethnicity

Source: NCHS, National Vital Statistics System, Mortality
Credit: Sarah Frostenson
Americans consume more opioids than any other country

Standard daily opioid dose for every 1 million people

- United States
- Canada
- Germany
- Denmark
- Belgium
- Austria
- Switzerland
- Australia
- Holland
- Spain
- Luxembourg
- Norway
- Great Britain
- Ireland
- New Zealand
- Sweden
- Ireland
- Israel
- France
- Norway
- Portugal
- Finland
- Italy
- Mauritius
- Greece

Source: United Nations International Narcotics Control Board
Credit: Sarah Frostenson
Americans are suffering from more chronic pain

Source: Health and Retirement Study, 1998-2010
Credit: Sarah Frostenson
Risk of continued opioid use increases at 4-5 days

Likelihood of continuing to use opioids

Source: Centers for Disease Control and Prevention
Credit: Sarah Frostenson

10 states have legislation that limits opioid prescriptions to 7 days or less

Source: National Conference of State Legislatures
Credit: Sarah Frostenson
The price of heroin
Per pure gram in inflation-adjusted dollars

Source: https://apps.who.int/iris/handle/10665/28570
Vox

More drug overdose deaths now involve heroin than prescription painkillers

Number of deaths

Source: CDC WONDER
Credit: Sarah Frostenson
**Opioid involvement in benzodiazepine overdose**

- **Total**
- **Benzodiazepines and Opioids**
- **Benzodiazepines without Opioids**

Source: National Center for Health Statistics, CDC Wonder

---

**Graph showing number of people who got treatment vs. those who didn't.**

- Got treatment: 2,000,000
- Didn't get treatment:

Source: National Survey on Drug Use and Health (2014)

Source: https://apps.nccd.chc.gov/ncsrupt/united-states-population-estimates
What Are Opioids?

**OPIOIDS**
Schedule II Narcotics

**FDA Indications:** Pain killers, Cough Suppressants, Anti-diarrheal, Opioid Maintenance and Detoxification

**Examples:** Codeine, Hydrocodone and Long Acting: Morphine, Oxycodone, Oxymorphone, Transdermal fentanyl, Methadone, Buprenorphine

**Illicit Usages:** Euphoria/“Get high”, prevent withdrawal, self-medication (i.e., physical and emotional pain)
Opiate Withdrawal Signs and Symptoms

Withdrawal Syndrome is the characteristic group of signs and symptoms that typically develop after a rapid, marked decrease or discontinuation of a substance of dependence.

- Severity and duration depend on several factors:
  1. Nature of substance
  2. Half-life and duration of action
  3. Length of time substance used
  4. Amount used
  5. Use of other substances
  6. Presence of other medical and psychiatric conditions
  7. Individual biopsychosocial variables

<table>
<thead>
<tr>
<th>Early Signs</th>
<th>Later Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runny nose</td>
<td>Anorexia, weakness</td>
</tr>
<tr>
<td>Sweating</td>
<td>Nausea, vomiting, diarrhea</td>
</tr>
<tr>
<td>Tearing</td>
<td>Goode flesh</td>
</tr>
<tr>
<td>Yawning</td>
<td>Increased Pulse /BP</td>
</tr>
<tr>
<td>Dilated pupils</td>
<td>Agitation, Restlessness</td>
</tr>
<tr>
<td>Increased temperature</td>
<td><strong>Severe Muscle &amp; Bone Pain</strong></td>
</tr>
</tbody>
</table>
Opiate Detoxification

Inpatient Setting
1. Duration: 4-7 days
2. Usual dose to suppress symptoms: 30-40mg/day Methadone
3. Immediate Referral to drug-free treatment setting
4. Clonidine (Catapres) can be considered an effective treatment for inpatient opioid detoxification but not outpatient, to reduce physical symptoms but not cravings.

Outpatient Setting
1. 21 day protocol sufficient for most stable, motivated patients
2. 180 day protocol, done within an opioid agonist therapy program, should be considered to work on patients early recovery problems, while stabilized on relatively low dose (50-60mg) Methadone
3. Equivalent dosages of Suboxone can also be used.

Key Considerations:
- Medical Detoxification is the Standard of Care if non-pregnant
- Methadone/Suboxone substitution therapy is the preferred method of detoxification, but...
- Goal of treatment = reducing withdrawal discomforts, with or without Methadone or Narcotic Substitution
- Comprehensive, long-term treatment is equally important as alleviating acute symptoms
- Fear and Anticipatory Anxiety are predominate emotional responses to detoxification
- Counseling prior to detoxification is necessary (i.e. expectations of withdrawal, treatment planning, patient responsibilities...)
- Treatment should be: individualized, reviewed and approved by a physician
Opioid Medication Assisted Treatment (MAT)

Maintenance and Detoxification
Three pharmacologic treatment options are currently available:
1. Methadone (Pure Mu Agonist)
2. Naltrexone/Naloxone/Vivitrol IM (Opioid Antagonist)
3. Buprenorphine/Suboxone (Opioid Agonist-Antagonist)

What Does the Data Show?
Statistics from the CDC and LDH

- Louisiana is one of 20 states with a significant increase in opioid deaths. (CDC)
- Louisiana had a 12 percent increase in deaths resulting from opioid overdose for 2014-2015. (CDC)
- Louisiana had 478 (17 per 100,000) fatal drug overdoses in 2014. (LDH)
- Data from 2013-2015 indicates there were 6,252 opioid-related substance use treatment admissions in Louisiana. (LDH)
- Since the Prescription Monitoring Program began monitoring narcotic prescribing behavior, Louisiana has averaged 122 prescriptions per 100 people. Meaning, we have more prescriptions for narcotics than we have residents. (LDH)


Overdose by illicit drugs is one measure of the severity of drug problems in a given area. It is noteworthy that although overdose deaths can occur through the use of various drugs, opiates contribute significantly to total number deaths. It has been projected that opiates are responsible for 60% of all overdose deaths.

Like much of the nation, overdose deaths in Louisiana have steadily increased since 1999. Unlike the rest of the nation, Louisiana posted a brief period between 2008 and 2012 that saw a decrease in overdose deaths; however, it should be noted that overdose rates experienced in this window were still almost three times as high as rates experienced in a decade earlier. Further, the age-adjusted rates per 100,000 have consistently been higher than national averages in all recent years with an exception of brief departures in 2011 and 2012. For comparison, Louisiana posted an age-adjusted overdose rate that was 11% higher than the national average in 2014 (17.6 and 15.6 respectively). See Figure 6.
Bienville, Winn, and Grant Parishes
Although rural, this area accounted for 27 opioid OD deaths in the last 5 years.

Washington, St. Tammany, Jefferson, and St. Bernard
New Orleans Metro Area surrounding parishes account for the majority of overdose deaths.

The bulk of all overdose deaths occur in the parishes surrounding Orleans parish. Specifically, St. Tammany Parish experiences close to 50 opioid overdoses a year at a rate that is six times that of the state average (20.96 to 3.54 per 100,000). Similarly, Jefferson Parish has over 55 opioid overdoses a year at a rate 4 times higher than the state average (12.85 to 3.54 per 100,000). Washington and St. Bernard Parishes, though having significantly less population, still maintain high rates of opioid overdoses. Washington parish experienced 27 deaths in the last year; whereas, St. Bernard Parish recorded 13 deaths.

In 2006, the DEA found that heroin in New Orleans was up to 60% purity compared to 10% purity prior to Hurricane Katrina. The purity levels gradually decreased to about 15% in 2012, 9% in 2013, but has increased to approximately 25.5% purity. The decrease from 60% purity is due to the growing demand and supply.

(New Orleans DEA)
• People are using heroin and Fentanyl at increasing rates because of the ease of accessibility and price compared to drugs such as Oxycontin or Lortab.

• Fentanyl and related synthetic analogues (i.e., carfentanil...) pose the greatest threat to elevated morbidity and mortality for opioid users who are frequently exposed without awareness.

A report was compiled by LDH on NAS among Louisiana Medicaid infants between 2003 and 2013, stating that 70% of Louisiana births are covered by Medicaid.

Of those Medicaid births between 2003 and 2013, 4,143 or 0.9% of infants were exposed to drugs prenatally and 51% of those or 2,114 were diagnosed with NAS. The NAS rate quadrupled from 2.1 in 2003 to 8.0 per 1,000 Medicaid births in 2013.

26% percent of the mothers had a diagnosis code for drug dependence during pregnancy with opioid abuse/dependence being the most common; 30% percent had both a mental illness and a drug dependence claim.

The report recommended that all pregnant women with opioid use disorders are referred for comprehensive SUD treatment that includes MAT.

(DHH; September 2015 Neonatal Abstinence Syndrome among Louisiana Medicaid Infants 2003-2013)
Louisiana Strategies and Approaches

Louisiana, like other states, is engaging a variety of legislative, treatment and prevention strategies to reduce opioid overdose deaths. The following slides cover a number of approaches engaged by Louisiana. Though not exhaustive of all available strategies and programs, Louisiana’s approaches are consistent with what other States have implemented in response to national increases in opioid misuse and opioid-related overdose deaths.
Louisiana Legislation

Improves access to naloxone and emergency medical services.

- 911 Good Samaritan laws
- Naloxone prescribing and administration protections
- Naloxone distribution programs

Call 911! ...but...

911 Good Samaritan Laws

As of July 2015, 31 States and the District of Columbia have enacted 911 Good Samaritan laws, an increase of 17 States since 2013. Included among them is Louisiana, in both the 2014 and 2015 Legislative Sessions.

In broad terms, these laws provide immunity for victims and witnesses who “act in good faith” to seek medical assistance when they believe an overdose is occurring.
**Relevant 2014-2016 Legislation**

*Naloxone Prescribing and Administration Protections*

- **2014 Act No. 253** Representative Helena Moreno  
  Authorizes 1st responders to carry Naloxone and administer it to a third-party who is undergoing an opioid-related drug overdose

- **2014 Act No. 392** Senator Sharon Weston Broome  
  Provides immunity for rendering assistance in medical emergencies involving alcohol consumption or drug overdose.

- **2015 Act No. 192** Representative Helena Moreno  
  Authorizes the prescribing or dispensing of naloxone to third parties.*

- **2016 Act No. 370** Representative Helena Moreno  
  Provides relative to non-patient specific standing orders, pharmacists storing and dispensing of Naloxone and other opioid antagonists

- **2016 HCR 113** Representative H. Bernard LeBas  
  Establishes the Commission on Preventing Opioid Abuse

- **2016 HB 791** Representative Helena Moreno  
  Limits the supply of opioids for a first time prescription to a seventy-two hour supply. (Status: 3/14 Deferred to H&W-no action)

*CVS announced May 25, 2016, Naloxone will be available without a prescription at their pharmacies across Louisiana.

**Relevant 2017 Legislation**

- **HB 192** (Moreno) *Provides for limitations on prescribing opioids.*  
  *Became Act No. 82; signed by Governor Edwards on 6/2/2017.

- **HB 250** (Pylant) *Authorizes local needle exchange programs.*  
  *Became Act No. 40; signed by Governor Edwards on 6/3/2017.

- **HB 490** (Leger) *Creates the Advisory Council on Heroin & Opioid Prevention & Education.*  
  *Became Act No. 88; signed by Governor Edwards on 6/12/2017

- **SB 55** (Mills) *Provides relative to the prescription monitoring program.*  
  *Became Act No.76; signed by Governor Edwards on 6/12/2017.

- **HCR 75** (M. White) *Requests that LDH examine need to eliminate "pain" as fifth vital sign.*  
  *Taken by the Clerk of the House and presented to the Secretary of State in accordance with Rules of the House.

LDH secretary Gee signs the state prescription order for Naloxone availability at retail pharmacies across Louisiana.
Medicaid Expansion January 2016
and passage of the 2008 Mental Health Parity and
Addictions Equity Act (MHPAEA)
Drastically increased the number of previously
uninsured/enrolled individuals with diagnosed Substance
Use Disorders (SUDs) making opioid
and other previously unavailable treatments accessible for
all ASAM Levels of care.

Greater New Orleans
and the
MAT PDOA
Grant Award
In New Orleans, accidental drug-related deaths in 2016 were more than double that of 2015.

There were 211 drug-related deaths in 2016 as compared to 92 drug-related deaths in 2015.

This is likely the first time that drug-related deaths have surpassed homicides in the history of New Orleans.

Toxicological analysis in most drug-related deaths revealed the presence of multiple drugs.

In 2016, opiates were discovered in 166 drug-related deaths, a doubling as compared to 81 in 2015.

Within this group of accidental opiate-related deaths in New Orleans, there was a more than threefold increase in the frequency of fentanyl, a powerful synthetic opioid.

In 2016, 48 persons died accidentally with fentanyl in their system, compared to 13 in 2015.
CORONER’S REPORT ON 2016 ACCIDENTAL DRUG-RELATED DEATHS IN NEW ORLEANS
March 27, 2017

Cocaine was present in 105 accidental drug-related deaths in 2016 as compared to 34 in 2015.

Methamphetamines/amphetamines were present in 18 accidental drug-related deaths in 2016 as compared to 4 in 2015.

No significant change was seen in gender distribution between the years, with males representing 80% of the drug-related deaths.

While the absolute numbers of drug-related deaths in both African-Americans and Caucasians increased in 2016, a statistically significant increase was seen in the proportion of African Americans in 2016.

African-Americans were 45% of drug-related deaths in 2016, as compared to 28% in 2015.

“New Orleans is in the midst of an accelerating public health crisis of drug-related deaths, driven chiefly but not exclusively by the ongoing national opiate epidemic. Medically, expanding access to all levels of addiction treatment is the solution, before persons end up in my office. Regarding criminal justice, I call upon leaders at all levels to support and expand drug diversion programs and drug courts that prioritize treatment rather than punishment for users. Finally, I call upon all those who seek to lead this city as our next mayor to heed these grim statistics and to articulate their plan to stem this growing tide of preventable deaths.”
The SAMHSA Medication Assisted Treatment-Prescription Drug and Opioid Addiction (MAT-PDOA) project seeks to address major challenges in substance use disorder (SUD) treatment within Louisiana by expanding/enhancing access to and increasing awareness of medication-assisted treatment (MAT) services for persons with opioid use disorder seeking or receiving MAT in the Greater New Orleans Area.

MAT PDOA Grant: Goals

To implement the Medication MAT-PDOA project to expand/enhance awareness of and access to medication-assisted treatment (MAT) and recovery support services for persons with opioid use disorder in the Greater New Orleans area.

The proposed project activities will decrease illicit opioid drug use and behavioral health disparities among the population of focus by:

1. Expand MAT Methadone/Suboxone maintenance capacity for uninsured individuals
2. Increase wrap-around and recovery support services
3. Enhance care coordination
4. Increase outreach contacts
5. Reduce drug use and behavioral health disparities
MAT PDOA Grant Locations include several MHSD Partner Addiction Service Providers in the Greater New Orleans Area

- Metropolitan Human Service District (MHSD)-New Orleans, St. Bernard Parish & Plaquemines Parish
- Odyssey House Louisiana (OHL)-New Orleans
- Behavioral Health Group (BHG)-New Orleans & Gretna
- Bridge House/Grace House (BH/GH)-New Orleans

**Service Options**

MAT PDOA Partners provide complimentary ASAM Addiction Treatment Services:

- Comprehensive Screenings and Evaluations
- Resource Coordination
- Outpatient Intensive and non-Intensive services (group and individual therapy)
- Residential/24 hour treatment
- Medication Assisted Treatment (MAT) for singular and co-occurring SUD, MI and Medical Conditions (Methadone, Naloxone, Buprenorphine/Suboxone)
- Therapeutic treatments such as Motivational Interviewing and Enhancement Therapy, Cognitive Behavioral therapies, Non-traditional therapies such as acupuncture
- Cultural and Linguistically matched care
- HIV/AIDS Testing
- Primary care services
- Peer Support Services
### MAT PDOA

**Year to Date Outcomes**

<table>
<thead>
<tr>
<th>Target</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase wraparound and recovery support services</td>
<td>50 individuals in the first year</td>
</tr>
<tr>
<td></td>
<td>100 in year 2</td>
</tr>
<tr>
<td></td>
<td>100 in year 3</td>
</tr>
<tr>
<td>Expand Methadone and/or Suboxone treatment to uninsured individual by 100% of what is currently served or 132 individuals</td>
<td>36 individuals in the first year</td>
</tr>
<tr>
<td></td>
<td>48 in year 2</td>
</tr>
<tr>
<td></td>
<td>48 in year 3</td>
</tr>
<tr>
<td>Total number of uninsured individuals with opioid use disorders</td>
<td>250 individuals by the end of year 3</td>
</tr>
<tr>
<td>receiving coordinated and integrated care through a network of providers</td>
<td></td>
</tr>
</tbody>
</table>

| Total Enrolled To Date                                                 | 168                                               |
| (August 1, 2016 to July 24, 2017)                                      |                                                   |
| Total Discharged                                                       | 26                                                |
| (August 1, 2016 to July 24, 2017)                                      |                                                   |
### MAT PDOA Grant: Participants Demographics

#### Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Rate</th>
<th>Valid Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>100</td>
<td>59.5 %</td>
<td>59.5 %</td>
</tr>
<tr>
<td>Female</td>
<td>67</td>
<td>39.9 %</td>
<td>39.9 %</td>
</tr>
<tr>
<td>Transgender</td>
<td>1</td>
<td>0.6 %</td>
<td>0.6 %</td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>100% *</td>
<td>100% *</td>
</tr>
</tbody>
</table>

#### Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Frequency</th>
<th>Rate</th>
<th>Valid Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black or African American</td>
<td>59</td>
<td>35.1 %</td>
<td>35.1 %</td>
</tr>
<tr>
<td>Native Hawaiian or Other Pacific Islander</td>
<td>1</td>
<td>0.6 %</td>
<td>0.6 %</td>
</tr>
<tr>
<td>White</td>
<td>82</td>
<td>48.8 %</td>
<td>48.8 %</td>
</tr>
<tr>
<td>American Indian</td>
<td>1</td>
<td>0.6 %</td>
<td>0.6 %</td>
</tr>
<tr>
<td>None of the above</td>
<td>25</td>
<td>14.9 %</td>
<td>14.9 %</td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>100% *</td>
<td>100% *</td>
</tr>
</tbody>
</table>

#### Age group

<table>
<thead>
<tr>
<th>Age group</th>
<th>Frequency</th>
<th>Rate</th>
<th>Valid Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>10</td>
<td>6.0 %</td>
<td>6.0 %</td>
</tr>
<tr>
<td>25-34</td>
<td>55</td>
<td>32.7 %</td>
<td>32.7 %</td>
</tr>
<tr>
<td>35-44</td>
<td>48</td>
<td>28.6 %</td>
<td>28.6 %</td>
</tr>
<tr>
<td>45-54</td>
<td>38</td>
<td>22.6 %</td>
<td>22.6 %</td>
</tr>
<tr>
<td>55-64</td>
<td>15</td>
<td>8.9 %</td>
<td>8.9 %</td>
</tr>
<tr>
<td>65+</td>
<td>2</td>
<td>1.2 %</td>
<td>1.2 %</td>
</tr>
<tr>
<td>Total</td>
<td>168</td>
<td>100% *</td>
<td>100% *</td>
</tr>
</tbody>
</table>
### MAT PDOA Grant: Outcomes at Discharge

**Number of Discharge Interviews Received:** 26

<table>
<thead>
<tr>
<th>GPRA Measures</th>
<th>Number of Valid Cases</th>
<th>Percent at Intake</th>
<th>Percent at Discharge</th>
<th>Rate of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstinence: did not use alcohol or illegal drugs</td>
<td>26</td>
<td>39.5%</td>
<td>69.2%</td>
<td>90.0%</td>
</tr>
<tr>
<td>Crime and Criminal Justice: had no past 30 day arrests</td>
<td>26</td>
<td>92.3%</td>
<td>100.0%</td>
<td>8.3%</td>
</tr>
<tr>
<td>Employment/Education: were currently employed or attending school</td>
<td>26</td>
<td>7.7%</td>
<td>7.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Health/Behavioral/Social Consequences: experienced no alcohol or illegal drug-related health, behavioral, social consequences</td>
<td>22</td>
<td>27.3%</td>
<td>69.1%</td>
<td>116.7%</td>
</tr>
<tr>
<td>Social Connectedness: were socially connected</td>
<td>26</td>
<td>96.2%</td>
<td>100.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Stability in Housing: had a permanent place to live in the community</td>
<td>26</td>
<td>3.8%</td>
<td>0.0%</td>
<td>-100.0%</td>
</tr>
</tbody>
</table>

---

### MHSD Medication Assisted Treatment Grant Marketing Strategy
- Billboards (Pelican, Outfront, LAMAR)
- Bus Sideboards/Benches (RTA)
- Print LA Weekly, The Tribune
- WBOK, Cumulus Radio
- WDSU TV
- WWL TV
- WGNO
- N.O. Agenda
- Total: $72,500

### Marketing & Communication Strategy
- Making Metropolitan Human Services District a household name
- Spreading Awareness about MHSD services and making it digestible for the families we serve
- Position MHSD as an expert in the mental health, development disabilities and addiction fields
- Attract legislation and Local Government Entities to support our mission
For Persons Served:

- Affordability - perception of the cost of treatment programs. Free medication does not change the perception. Louisiana is in year two of Medicaid expansion under current administration, albeit barriers still exist with regard to Medicaid covering the cost of treatment.
- Engagement - difficult for OTP to influence persons to receive medication although treatment is at “no cost”.
- Finding adequate resources - housing, employment opportunities (especially while engaged in treatment), and legal status (clearing criminal justice issues).
- Complexity of medical issues - persons served usually have an array of medical issues and although they are in the process of being enrolled for Medicaid insurance, Medicaid it will not pay for all medical issues.
- Retention - retaining individuals for the duration of treatment for various reasons. (lack of adequate support system, adequate resources, withdrawal & cravings)
- Follow up;
  - difficulties occur when individuals leave treatment, or discharge against medical advice. Oftentimes phone numbers or contact information changes.
  - Reconnecting persons served to their primary support again. Most times the family is exhausted with the person and the treatment team is their only support system (resource coordinators)

Additional Resources

- FDA 2012 Naloxone Meeting; [http://www.fda.gov/drugs/newsEvents/ucm277119.htm](http://www.fda.gov/drugs/newsEvents/ucm277119.htm)
- FDA PowerPoint on Potential OTC (over the counter) Naloxone (presented at the FDA on April 12, 2012), [http://www.fda.gov/drugs/newsEvents/ucm277119.htm](http://www.fda.gov/drugs/newsEvents/ucm277119.htm)
Additional Resources


- FDA 2012 Naloxone Meeting: [http://www.fda.gov/drugs/newsEvents/ucm277119.htm](http://www.fda.gov/drugs/newsEvents/ucm277119.htm)
- FDA PowerPoint on Potential OTC (over the counter) Naloxone (presented at the FDA on April 12, 2012), [http://www.fda.gov/drugs/newsEvents/ucm277119.htm](http://www.fda.gov/drugs/newsEvents/ucm277119.htm)
Additional Resources


  [http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2570543/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2570543/)

  [http://press.psprings.co.uk/bmj/january/opioid.pdf](http://press.psprings.co.uk/bmj/january/opioid.pdf)