Easy to do Harm Reduction and Naloxone but Naltrexone is Another Cup of Tea

Sharon Stancliff, MD, FASAM
Harm Reduction Coalition
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Sharon Stancliff

- Will discuss off label administration of naloxone with a mucosal atomizer device

The contents of this activity may include discussion of off label or investigative drug uses. The faculty is aware that it is their responsibility to disclose this information.
Target Audience

• The overarching goal of PCSS-O is to offer evidence-based trainings on the safe and effective prescribing of opioid medications in the treatment of pain and/or opioid addiction.

• Our focus is to reach providers and/or providers-in-training from diverse healthcare professions including physicians, nurses, dentists, physician assistants, pharmacists, and program administrators.
Educational Objectives

• At the conclusion of this activity participants should be able to consider the role of discussion of overdose and provision of naloxone in their practice. They will be able to
  - Discuss the epidemiology of and risk factors for opioid overdoses
  - List the components of training a patient on how to use naloxone
  - Find local laws and national resources on line
  - Discuss some of the evidence for the intervention
George

30 year old male requesting refill on hydrocodone for chronic low back pain
Prescription drug monitoring program reveals 3 other opioid prescriptions from 3 other prescribers in past month
Physical exam reveals bruising and needle marks on his arms
Urine toxicology: Cocaine, hydrocodone, morphine, benzodiazepines
George

What are his immediate risks?
How can you engage him in care?
What resources can you offer him?
Age-adjusted rate of drug overdose deaths and drug overdose deaths involving opioids—United States, 2000–2014

Rudd R et al MMWR 2016
Drug overdose deaths involving opioids by type of opioid — United States, 2000–2014

Rudd R et al MMWR 2016
Opioid Overdose

**Opioid Overdose Characteristics**
- Reduced sensitivity to changes in $O_2$ and $CO_2$ outside of normal ranges
- Decreased tidal volume and respiratory frequency
- Respiratory failure and death due to hypoventilation

**Opioid Overdose Toxidrome Develops** Over Minutes to Hours
- Decreased respiratory rate,
- Unresponsiveness
- Blue/gray lips and nails

Opioid receptors are in the respiratory center in the medulla

*White Addiction 1999*
Risk Factors for Opioid Overdose

- Reduced Tolerance
- Using Alone
  (risk factor for fatal OD)
- Illness
- Depression
- Unstable housing

- Mixing Drugs
- Changes in the Drug Supply
- History of previous overdose
Lowered tolerance

- Tolerance - repeated use of a substance may lead to the need for increased amounts to produce the same effect
- Abstinence decreases tolerance increasing overdose risk
  - Incarceration
  - Hospitalization
  - Drug treatment/ Detox/ Therapeutic communities
  - Sporadic patterns of drug use
  - Sporer 2007, Binswanger 2013
Post release mortality

76,208 people released from Washington State Department of Corrections 1999-2009

Overdose was the leading cause of death; opioids were involved in 14.8% of deaths

Binswanger et al Annals of Med 2013
Figure Legend:
Mortality rate, by week since release, for overdose and all other (nonoverdose) causes of death.
Overdose deaths in New York City involve multiple drugs 2014

- 97% of overdose deaths involved more than one substance. Approximately eight in ten (79%) overdose deaths involved an opioid.
- Benzodiazepines were found in 54% of overdose deaths involving opioid analgesics, 41% of deaths involving heroin, and 55% of deaths involving methadone.

NYCDOHMH 2015
Context of Opioid Overdose

- The majority of heroin overdoses are witnessed (gives an opportunity for intervention)
- The circumstances of prescription drug overdoses are less well characterized
- Fear of police may prevent calling 911
- Witnesses may try ineffectual things
  - Myths and lack of proper training
  - Abandonment not uncommon

Tracy 2005
Strategies to address overdose

- Increase access to naloxone
- Good Samaritan laws
- Prescription monitoring programs
- Prescription drug take back events
- Supervised injection facilities
- Safe opioid prescribing education
- Expansion of opioid agonist treatment
Naloxone is an opioid receptor antagonist at mu, kappa, and delta receptors. It works at the opioid receptor to displace opioid agonists, shows little to no agonist activity, and shows little to no pharmacological effect in patients who have not received opioids.
Naloxone

• Reverses clinical and toxic effects of opioid overdose
• Reverses respiratory depression, hypotension, sedation
• Reverses analgesia
• Withdrawal if opioid dependent
Naloxone

• Reverses overdose and prevents fatalities
  • Mu opioid receptor antagonist
    ▪ No clinical effect in absence of opioid agonists
    ▪ Displaces opioids from receptors
  • Takes effect in 2-5 minutes
    ▪ May cause withdrawal
    ▪ Lasts for 30-90 minutes (longer for newest formulation)
• Hepatic metabolism; renal excretion
Models of increasing access to naloxone

- Community prescribing/distribution to drug user and/or social networks
- Prescribing in outpatient care
- Increasing access among first responders
- Pharmacy collaborative agreements
Access to naloxone

- Effective 10/1/16 all Medicaid programs must cover at least one formulation of naloxone for persons at risk of opioid overdose
- No barriers to prescribing for persons at risk of witnessing an overdose
- Many states “don’t ask, don’t tell”
States allowing 3rd party administration of naloxone
Training Essentials

• What does naloxone do?
• Overdose recognition
  ▪ Sternal rub/grind
• Action
  ▪ Call EMS and administer naloxone- whichever one is closest should be first
• Recovery position

NYSDOH guidance
What does naloxone do?

- Reverses opioid effects of sedation and respiratory depression (slowing of breathing)
- Causes sudden withdrawal in the opioid dependent person – an unpleasant experience
- Works for opioids
- Will not cause harm if it is not an opioid overdose
- Same drug carried on ambulances and used in emergency rooms
How to recognize an overdose?

• Unresponsive
• Shallow or no breathing
• Snoring, gurgling.
• Turning blue around nail beds and lips
Painful stimulation

If no response to calling and shaking:
Sternal grind (make a fist and rub the sternum with the knuckles)

- Assessment of level of consciousness
- May make the overdoser breathe a bit, even though they may not wake up
Activate emergency medical services (911) “my friend is overdosing and not breathing”

and

Administer naloxone

Whichever is closer at hand
Naloxone administration

- Inject into a muscle (subcutaneous and intravenous are also effective) or spray up the nose
- Acts within 2-5 minutes
- If no response in 2-5 minutes, give 2nd naloxone injection
- Lasts for 30 – 90 minutes
Results: awake and breathing

Narcan wears off in 30-90 minutes

- Reassure the survivor if s/he is drug sick - the naloxone will wear off - don’t use more opioids to feel better!!

- Encourage survivor to go to the hospital, either by ambulance or other transportation
Recovery Position

- If you must leave the overdoser even for a few minutes put them into the recovery position so they won’t choke on vomit
Prevention Messages

Both drug users and those associated with drug users should be informed about:

- The risk of mixing drugs
- The risk of use after loss of tolerance
- The risk of using alone
Recommended training/knowledge

- Risk factors for overdose/overdose death
  - Loss of tolerance
  - Mixing drugs
  - Using alone
- Good Samaritan Law: provide substantial protection against arrest and or prosecution for drug crimes in an emergency
- Hands on practice with device with the generic devices
- Resuscitation
  - Rescue breathing and/or chest compressions

Stancliff S et al 2015
States with Good Samaritan Laws
In July 2014, a survey of managers of 140 organizations known to provide naloxone kits to laypersons.

136 (97.1%) responded reporting on 660 local opioid overdose prevention sites in 30 states and the District of Columbia.

From 1996- June 2014 the programs reported providing training and kits to 152,283 and receiving 26,463 reports of overdose reversals.

Wheeler et al MMWR 6/19/15
Lay naloxone program 2014

**FIGURE 2.** 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.
Massachusetts

- Massachusetts compared interrupted time series of towns by enrollment in Opioid Education and Naloxone Distribution programs
- 2912 kits distributed
- 327 rescues, 87% by drug users; 98% effective
- EMS revived the other 3

Walley et al BMJ 2013
Fatal opioid OD rates compared no implementation

- Program enrollment 1-100 per 100k population (ARR: 0.73)
- Program enrollment >100 per 100,000 (ARR:0.54)

No differences were found in nonfatal opioid OD rates.

Walley et al BMJ 2013
Increase drug use?

Of the 325 with 2 points of data on drug use:

• No increase in reported use of opioids, alcohol, cocaine or number of substances used

• Significant increase in reported use of benzodiazepines:
  - 30% increased use
  - 23% decreased use

Doe-Simkins et al BMC Public Health 2014
New York City Longitudinal Cohort Study

- Recruitment at trainings provided by 6 syringe exchange programs and 2 methadone programs June 2013 - January 2014
- Interviewed at baseline, 3 months, 6 months and 12 months
- 398 were recruited, 80% of whom reported use of an opioid, 33% reported injection in the past year
- 342 (86%) were interviewed at least once in the follow up period (Sept 2013 - Dec 2014)

Huxley-Reicher Z. 2016
Results

• 135 (39%) study participants witnessed at least one opioid overdose, with 63% of these participants witnessing more than one overdose
• A total of 338 overdoses were observed
• Naloxone was administered by the study participant in 189 (57%) of cases and by another lay person in an additional 57 (17%) of cases
• In 12 months, of 398 trained individuals, 87 used naloxone and 2 had their naloxone used on them (22 reversals for every 100 trained)

Huxley-Reicher Z. 2016
NYC Department of Health and Mental Hygiene
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Formulations
Coding options

- Screening, Brief Intervention, and Referral to Treatment (SBIRT) can be used to bill time for counseling a patient about how to recognize overdose and how to administer naloxone.
- E&M codes that accurately capture the time and complexity may be used.
- SAMHSA
New York State: multiple programs

• Community: > 250 programs
  – Syringe exchanges, drug treatment, clinics, local DOHs

• Police: 8,000 officers with over 1000 uses

• Prison release and parole
  – Year one: over 1,700 trained, over 700 kits

• Pharmacies under “standing orders”

• School program
Treatment of opioid use disorders

- Methadone: extensive data on reductions: overdose deaths, HIV transmission, crime
- Buprenorphine: growing body of data on reductions in: overdose deaths, HIV&HCV transmission
- Injectable long acting naltrexone: effectiveness studies in progress, no data yet on reductions in overdose deaths, or infection transmission
Opioid maintenance and mortality

• Prospective study of opioid dependent patients applying for methadone (and buprenorphine) treatment in Norway
• 3,789 subjects followed for up to 7 years

Clausen Drug Alc Dep 2008
Mortality before, during and after OMT in Norway

3,789 subjects followed for up to 7 years

1998-2003

3.789 subjects followed for up to 7 years

Clausen T. et al. Drug and Alcohol Dependence, 2008,
Mortality prior to, during and after opioid maintenance treatment (OMT)
Conclusions

• Provision of naloxone to patients and community members is feasible and efficacious
• Physicians can train, prescribe, refer to programs depending on state laws and local resources
• An addition to, not a replacement for evidence based treatment!
References


• Clausen T, Anchersen K, Waal H. Mortality prior to, during and after opioid maintenance treatment (OMT): a national prospective cross-registry study. Drug Alcohol Depend. 2008 Apr 1;94(1-3):151-7


• Epi Data Brief NYCDHMH Dec 2015

• Huxley-Reicher Z Policy and Practice Update on Naloxone in NYS, Annual Conference, New York Society of Addiction Medicine. NYC, NY 2/6/16


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• Public Health Law Atlas


• Sporer KA. Acute heroin overdose. Ann Intern Med. 1999 Apr 6;130(7):584-90

• Stancliff S and Coffin P. Resuscitation in Opioid Overdose Overdose Awareness Conference, ThINCBergen2015 Bergen Norway,9/1/15


Resources

http://harmreduction.org/issues/overdose-prevention/

http://prescribetoprevent.org/

http://store.samhsa.gov/product/Opioid-Overdose-Prevention-Toolkit-Updated-2016/SMA16-4742

http://lawatlas.org/welcome
PCSS-O Colleague Support Program and Listserv

- PCSS-O Colleague Support Program is designed to offer general information to health professionals seeking guidance in their clinical practice in prescribing opioid medications.
- PCSS-O Mentors comprise a national network of trained providers with expertise in addiction medicine/psychiatry and pain management.
- Our mentoring approach allows every mentor/mentee relationship to be unique and catered to the specific needs of both parties.
- The mentoring program is available at no cost to providers.

For more information on requesting or becoming a mentor visit: [www.pcss-o.org/colleague-support](http://www.pcss-o.org/colleague-support)

- **Listserv**: A resource that provides an “Expert of the Month” who will answer questions about educational content that has been presented through PCSS-O project. To join email: pcss-o@aaap.org.
PCSS-O is a collaborative effort led by American Academy of Addiction Psychiatry (AAAP) in partnership with: Addiction Technology Transfer Center (ATTC), American Academy of Neurology (AAN), American Academy of Pain Medicine (AAPM), American Academy of Pediatrics (AAP), American College of Physicians (ACP), American Dental Association (ADA), American Medical Association (AMA), American Osteopathic Academy of Addiction Medicine (AOAAM), American Psychiatric Association (APA), American Society for Pain Management Nursing (ASPMN), International Nurses Society on Addictions (IntNSA), and Southeast Consortium for Substance Abuse Training (SECSAT).

For more information visit: www.pcss-o.org
For questions email: pcss-o@aaap.org

Twitter: @PCSSProjects

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