Optimizing Safety in Patients with Addictions

CRIT/FIT program – May 2015

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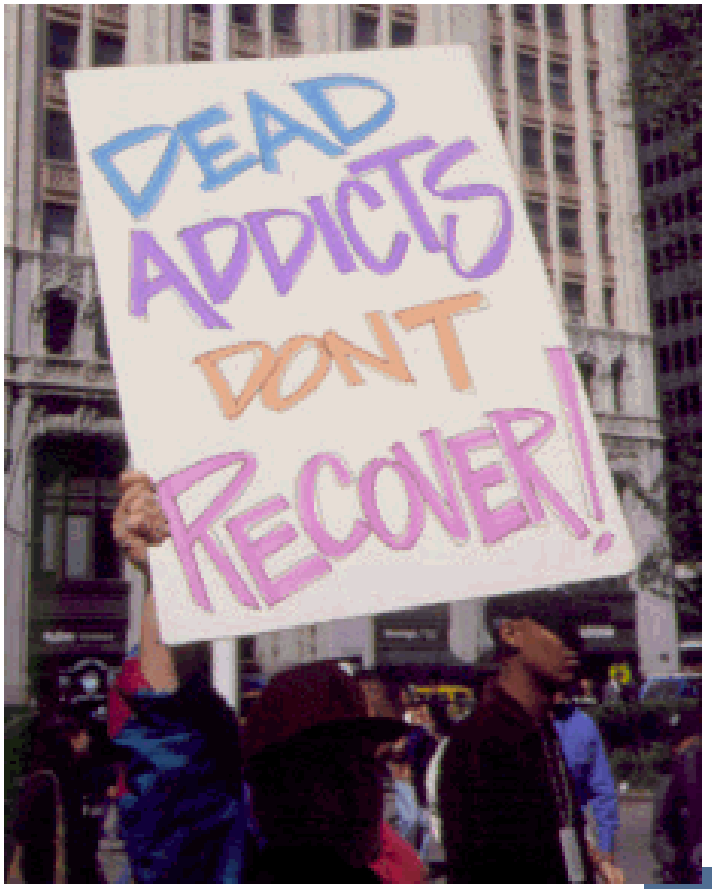
Assistant Professor of Medicine

Learning objectives

At the end of this session, you should be able to:

1. Define harm reduction and apply it to patient care
2. Teach overdose prevention strategies
3. Minimize the risk of polypharmacy among patients



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Case

- You are called to admit a 29 yo woman with polydrug overdose, complicated by aspiration, and a left arm cellulitis. She was found unresponsive in the bathroom of a restaurant with a syringe, cooker and filters.
  - Works as a waiter
  - Injecting heroin daily since age 23.
  - Uses cocaine on the weekends and drinks alcohol after work
  - Trades sex for drugs, when money is short
  - Prescribed clonazepam, clonidine and gabapentin for panic disorder and mood stabilization
  - Treated with methadone and buprenorphine in the past when pregnant
  - Intends to use again on discharge

  Despite your best brief intervention and motivational interviewing…
  - ***She is not interested in treatment at this time.***

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How do you optimize safety for people who continue to use (or who may relapse)?

- First assess risks:
  - Infection risk behaviors
    - Injection
      - New needle and syringe every time
      - Filters and Cooking
      - Clean solvent
    - Sex
      - Without a condom?
      - With multiple partners
      - While using drugs
      - In exchange for money or drugs – bad date sheet
  - Overdose risk behaviors
    - Using alone
    - Mixing substances - POLYPHARMACY
    - Abstinence
    - Unknown source
    - Chronic illness
- Second: Make a safety plan

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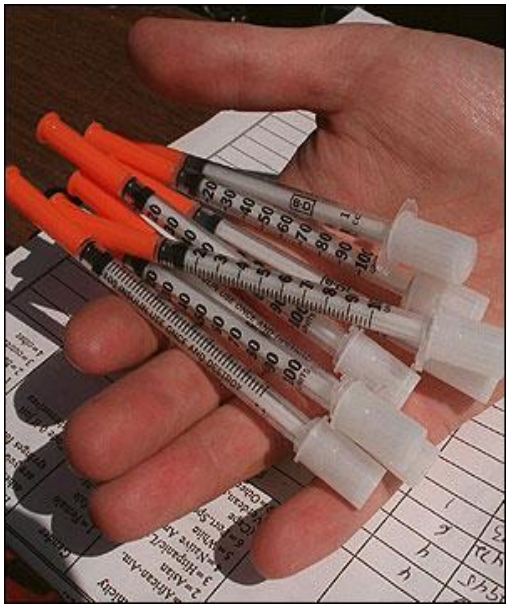
Optimizing safety
(aka Harm Reduction)

What is Harm Reduction?

- Practical strategies and ideas to reduce substance use consequences
  - A movement for social justice built on a belief in, and respect for, the rights of people who use substances.
    - Harmreduction.org



- Interventions guided by risk-benefit analysis
- Abstinence is not a prerequisite to care

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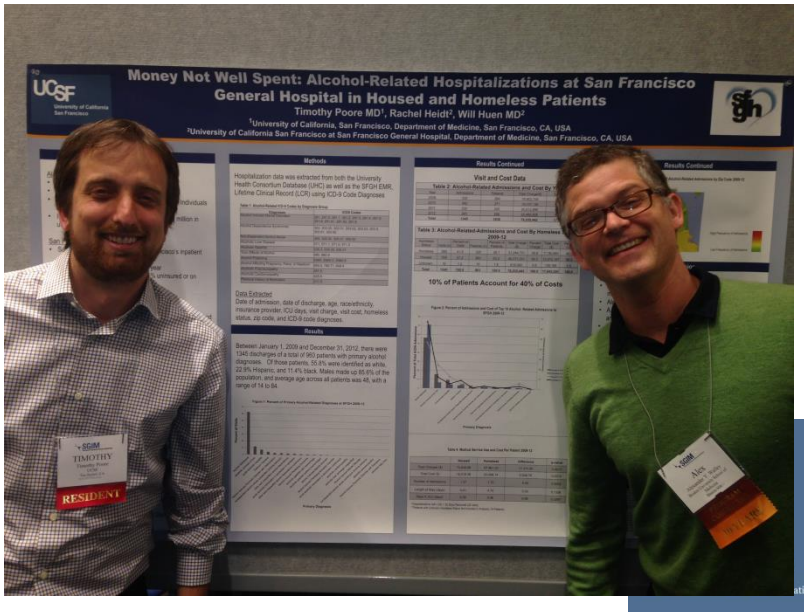
Harm Reduction Interventions

- Opioid agonist treatment to reduce HIV and mortality
  - Treatment continuity post-incarceration
- Needle and syringe programs to reduce HIV and injection risk
  - Pharmacy access needles and syringes
- Drug consumption rooms for injection risk and overdose mortality
- Naloxone rescue kits for opioid overdose mortality
- Pre and Post exposure prophylaxis
- Housing first programs
- Shelter-based alcohol administration
- Bad date sheets



http://www.emcdda.europa.eu/best-practice/harm-reduction

Vascular Access

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Filters

- Used to trap particulate matter
- Cotton balls, Q tip, tampon, cigarette filter
- Require manipulation with fingers
- Contamination with skin flora
- Ideal filter small, preformed (dental pellet)

To Cook or not to Cook

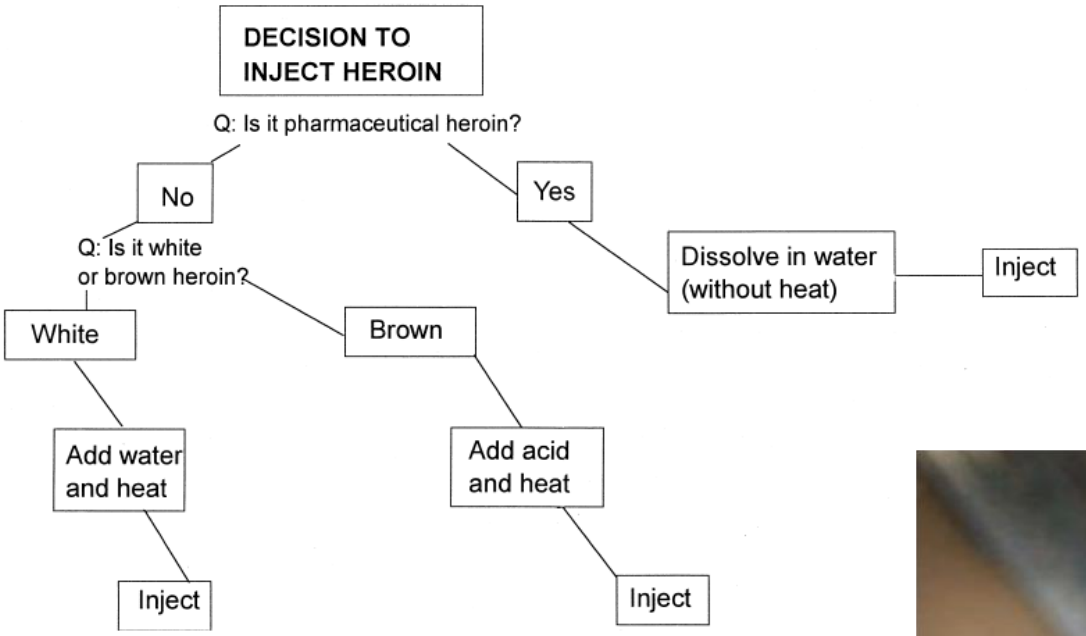
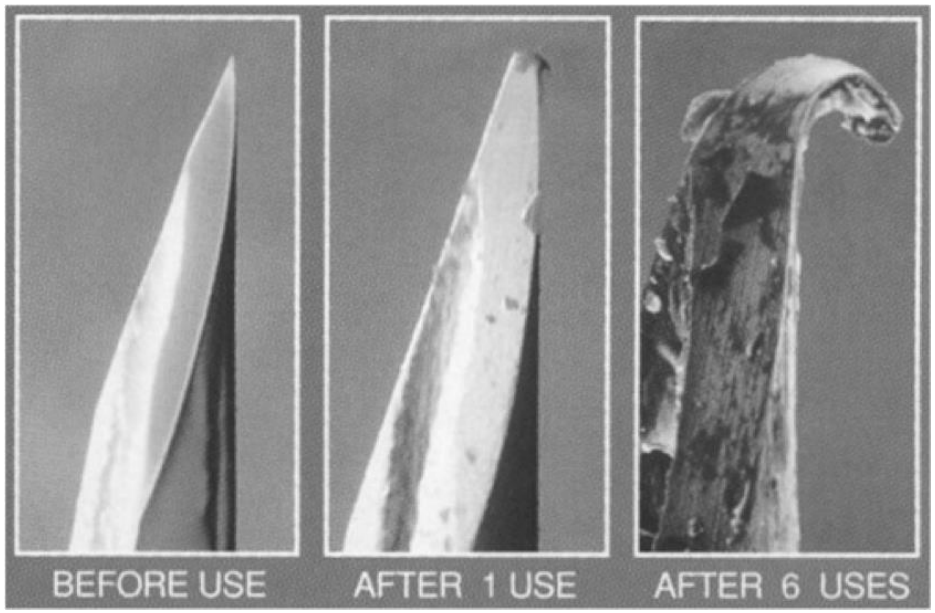


Figure 2. Apparent Decision-making Algorithm to Determine I
Omission of Use of Acid and/or Heat During Preparation of Heroin f

Strang J et al. Different forms of heroin and their relationship to cook-up techniques: data on, and explanation of, use of lemon juice and other acids. Subst Use Misuse. 2001 Apr;36(5):573-88.

Syringes and needles



- New needle and syringe each injection
- Needle dulls with each use
- Bleach is option
- Don’t use syringe to divide dose or mix heroin

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Change in HIV seroprevalence with and without needle-syringe programs

	Cities with NSPs	Cities without NSPs
All cities	-5.8% per year	+5.9% per year
Cities with seroprevalence <10%	-1.1% per year	+16.2% per year

Hurley et al. Lancet 1997:349; 1797-1800.
www.unodc.org/documents/hiv-aids/EFA%20effectiveness%20sterile%20needle.pdf

David Satcher, Surgeon General 2000

After reviewing all of the research to date, the senior scientists of the Department and I have unanimously agreed that there is conclusive scientific evidence that **syringe exchange programs**, as part of a comprehensive HIV prevention strategy, **are an effective public health intervention that reduces the transmission of HIV and does not encourage the use of illegal drugs.** In many cases, a **decrease in injection frequency** has been observed among those attending these programs. In addition, when properly structured, syringe exchange programs provide a unique opportunity for communities to reach out to the active drug injecting population and **provide for the referral and retention of individuals in local substance abuse treatment and counseling programs** and other important health services.

- www.csam-asam.org/evidence-based-findings-efficacy-syringe-exchange-programs-analysis-scientific-research-completed-ap

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Community Outbreak of HIV Infection Linked to Injection Drug Use of Oxymorphone — Indiana, 2015

Caitlin Conrad[1], Heather M. Bradley[2], Dita Broz[2], Swamy Buddha[1], Erika L. Chapman[1], Romeo R. Galang[2,3], Daniel Hillman[1], John Hon[1], Karen W. Hoover[2], Monita R. Patel[2,3], Andrea Perez[1], Philip J. Peters[2], Pam Pontones[1], Jeremy C. Roseberry[1], Michelle Sandoval[2,3], Jessica Shields[4], Jennifer Walthall[1], Dorothy Waterhouse[4], Paul J. Weidle[2], Hsiu Wu[2,3], Joan M. Duwve[1,5] (Author affiliations at end of text)

MMWR / May 1, 2015 / Vol. 64 / No. 16

- 135 (129 confirmed, 6 prelim) infections in community of 4200 – Jan-April 2015
- 55% male, age range 18-57
- 80% acknowledge IDU, 3% deny IDU
  - All PWIDs report oxymorphone tablets as drug of choice
  - Other injection drugs include methamphetamine and heroin
- 84% co-infected with HCV
- Up to three generations injecting together
- Crushing and cooking 40mg tablets with frequent sharing of injection equipment
- Number of injections per day range from 4-15
- Injection partners range from 1 to 6

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Overdose prevention

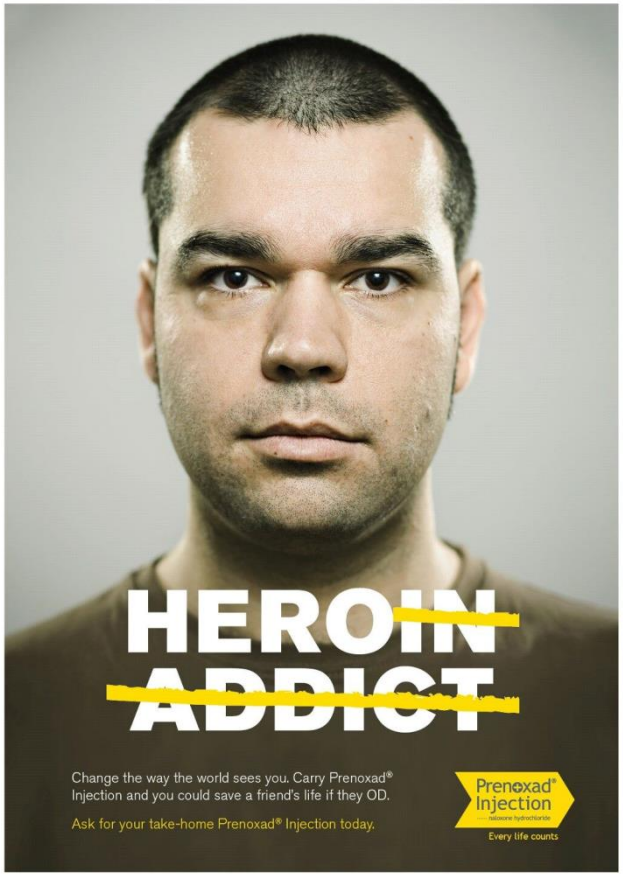
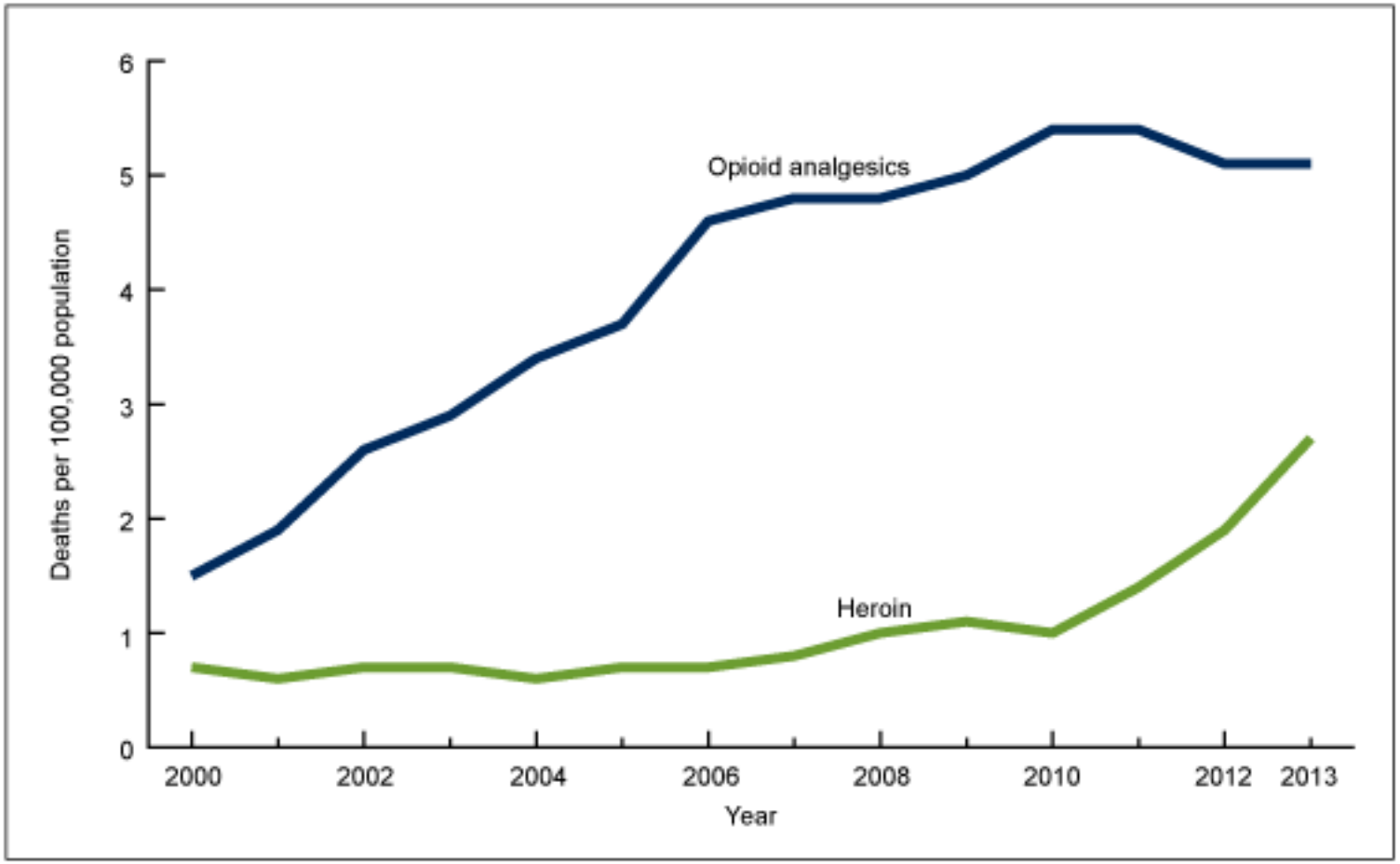


Figure 1. Age-adjusted rates for drug-poisoning deaths, by type of drug: United States, 2000–2013



NOTES: The number of drug-poisoning deaths in 2013 was 43,982, the number of drug-poisoning deaths involving opioid analgesics was 16,235, and the number of drug-poisoning deaths involving heroin was 8,257. A small subset of 1,342 deaths involved both opioid analgesics and heroin. Deaths involving both opioid analgesics and heroin are included in both the rate of deaths involving opioid analgesics and the rate of deaths involving heroin. Access data table for Figure 1 [PDF - 86KB].
SOURCE: CDC/NCHS, National Vital Statistics System, Mortality.

Intervention	Findings
State legislation • **Pill Mills, Doctor Shopping, and Good Samaritan laws**	**Low evidence quality** from 3 states where multiple efforts in place at the same time with inadequate controls
Prescription drug monitoring programs	**No clear effects** on total opioid prescribing or health outcomes. Data only up through 2008, Impact of proactive reporting or provider mandates not known
Insurance and pharmacy benefits manager	**Low evidence quality** because lack of commparison groups, short-term follow-up and inadequate statistical testing
Safe storage and disposal	**Extremely low evidence quality** from lack of baseline data and comparison groups, small sample size, short-term follow-up, health outcomes not assessed and inadequate controls
Clinical guidelines	**Low evidence quality** from lack of baseline data and comparison groups, small sample size, short-term follow-up and inadequate controls
Education: Patient and Providers	**Moderate to low evidence quality**. Few studies of patient education. Studies of providers find some adoption of safer prescribing, but less impact on patient outcomes
Naloxone distribution	**Some evidence of effectiveness** in reducing opioid overdose death rates, but **overall low evidence quality**. *Data based on people who inject heroin*

The impact of state policy and systems-level interventions on prescription drug overdose
Haegerich et al. Drug Alc Dep 2014: 145; 34-47

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Intervention

Findings

State legislation

- **Pill Mills, Doctor Shopping, and Good Samaritan laws**

Prescription drug monitoring programs

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Safe storage and disposal

Clinical guidelines

Education: Patient and Providers

Naloxone distribution

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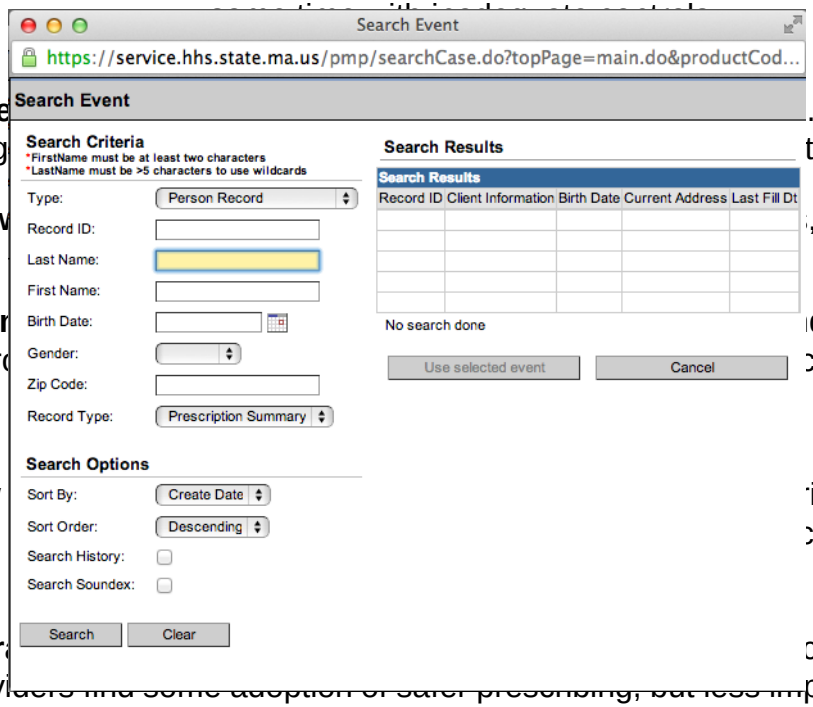

No cle. Data only up
throug tes not known

Low , short-term

Extrer d comparison
gr comes not

Low ison groups,
controls

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SCOPE of Pain
Safe and Competent Opioid Prescribing Education

www.scopeofpain.com
www.opioidprescribing.com
www.pcss-o.org

PCSS-O Training
Prescribers' Clinical Support System for Opioid Therapies

The impact of state policy and syste e
Haegerich et al. Drug Alc Dep 2014: 145; 34-47

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Overdose deaths decrease when agonist treatments increase

Methadone and Buprenorphine in Baltimore:

Schwartz et al. AJPH 2013.

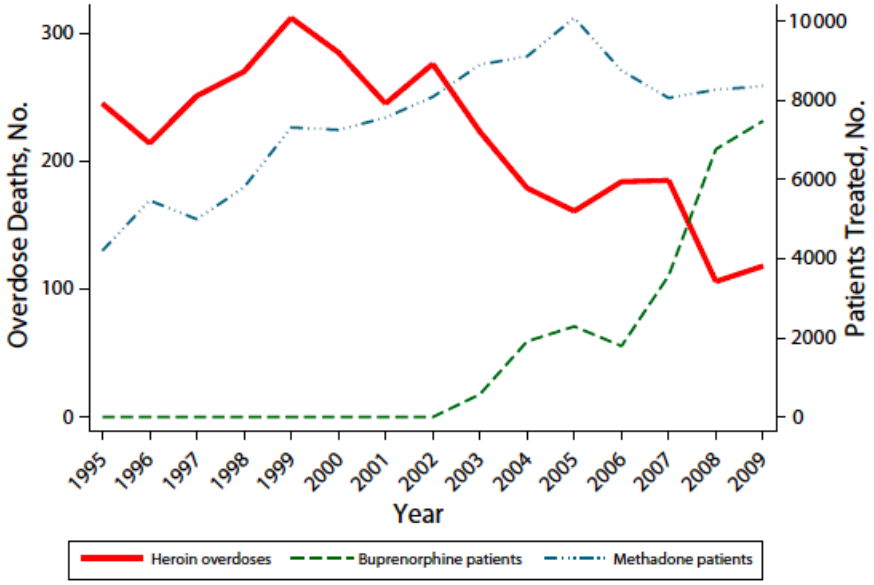
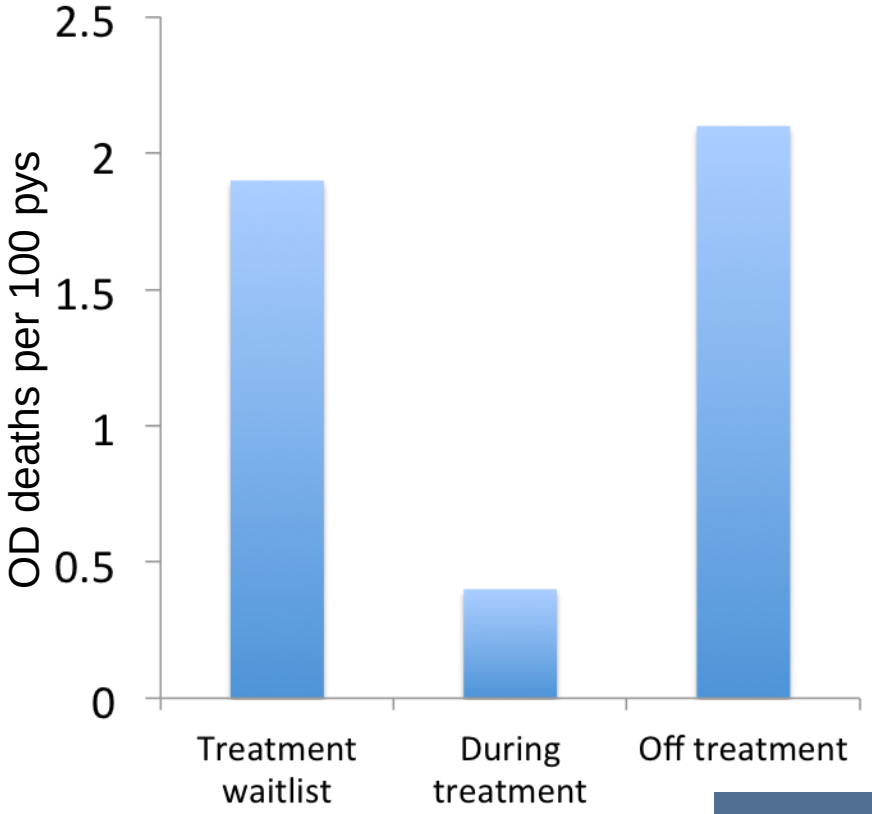


FIGURE 1—Heroin overdose deaths and opioid agonist treatment: Baltimore, MD, 1995–2009.

Methadone in Norway:

Clausen et al. Addiction 2009



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Supervised injection facilities

Marshall et al. Lancet 2011:377;1429-37

	ODs occurring in blocks within 500 m of the SIF*		ODs occurring in blocks farther than 500 m of the SIF*	
	Pre-SIF	Post-SIF	Pre-SIF	Post-SIF
Number of overdoses	56	33	113	88
Person-years at risk	22 066	19 991	1 479 792	1 271 246
Overdose rate (95% CI)*	253·8 (187·3–320·3)	165·1 (108·8–221·4)	7·6 (6·2–9·0)	6·9 (5·5–8·4)
Rate difference (95% CI)*	88·7 (1·6–175·8); p=0·048	..	0·7 (-1·3–2·7); p=0·490	..
Percentage reduction (95% CI)	35·0% (0·0%–57·7%)	..	9·3% (–19·8% to 31·4%)	..

SIF=supervised injection facility. Pre-SIF period=Jan 1, 2001, to Sept 20, 2003. Post-SIF period=Sept 21, 2003, to Dec 31, 2005. *Expressed in units of per 100 000 person-years.

Table 2: **Overdose mortality rate in Vancouver between Jan 1, 2001, and Dec 31, 2005 (n=290), stratified by proximity to the SIF**

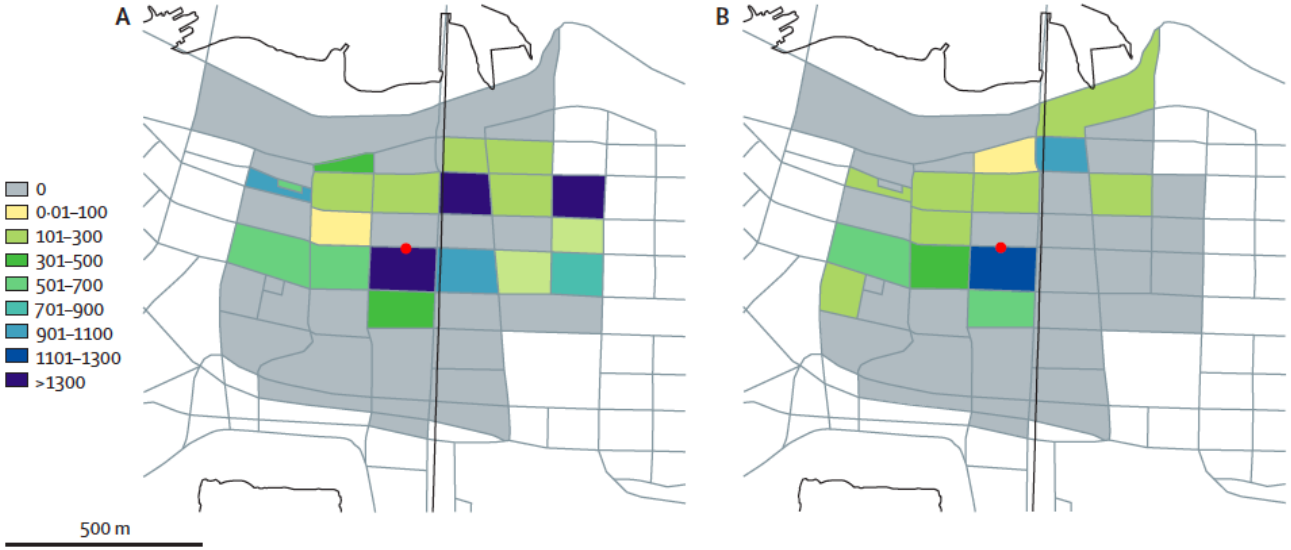

Figure 2: **Fatal overdose rates before (A) and after (B) the opening of Vancouver's SIF (shown in red) in city blocks located within 500 m of the facility**
Rates are given in units of 100 000 person-years and were calculated by aggregating the locations of death to the dissemination block level as shown.

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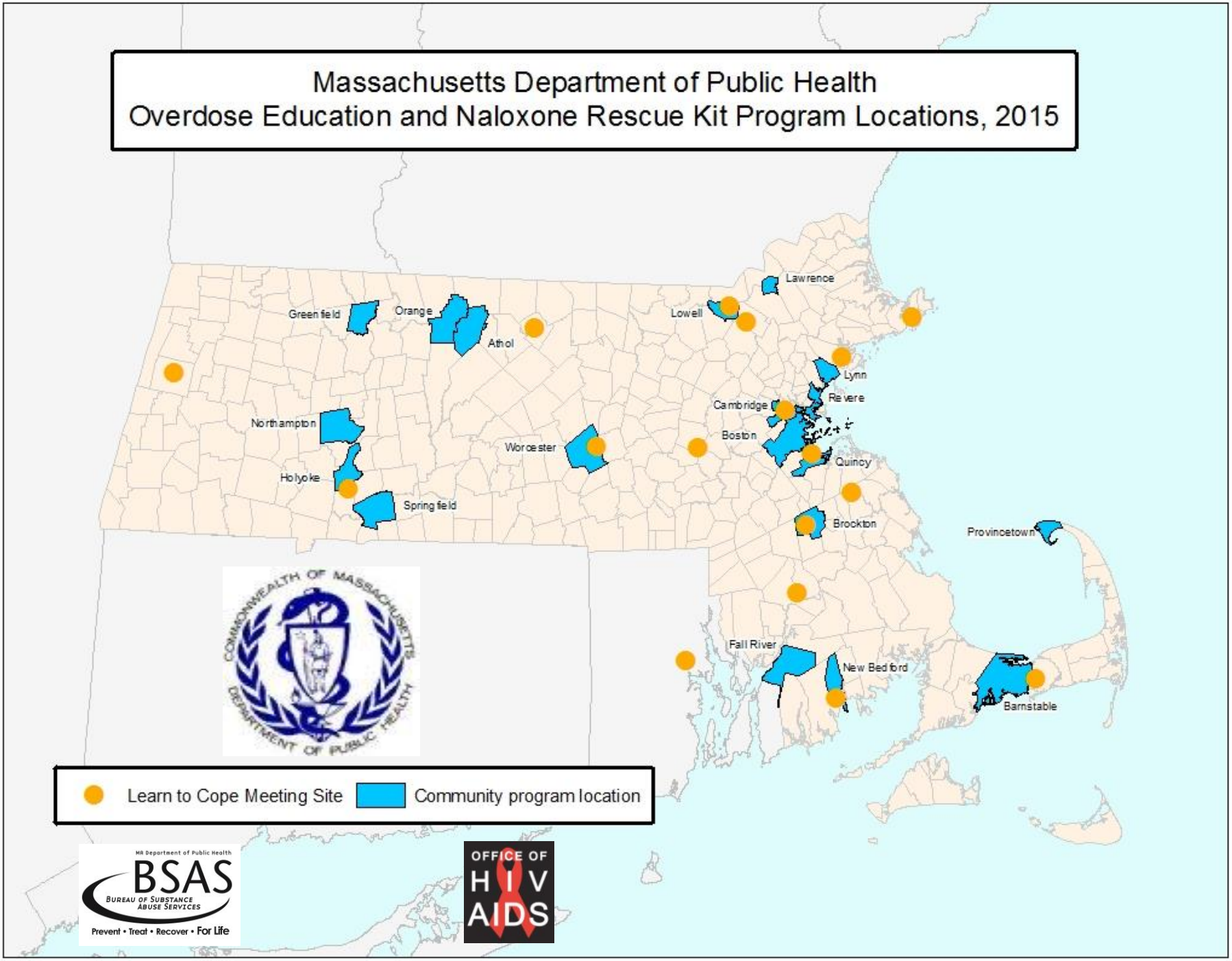
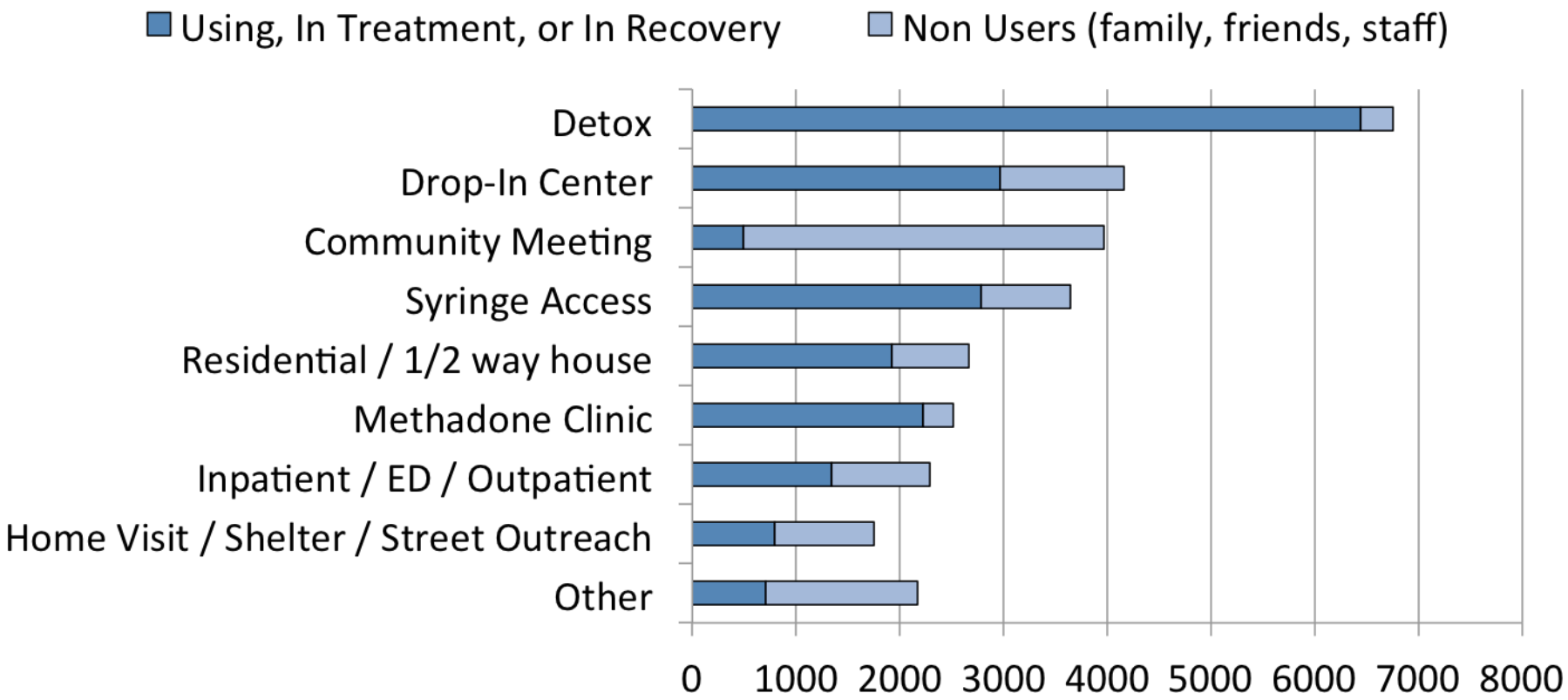

Massachusetts Department of Public Health
Overdose Education and Naloxone Rescue Kit Program Locations, 2015
Greenfield
Orange
Athol
Lowell
Lawrence
Lynn
Revere
Cambridge
Boston
Quincy
Northampton
Worcester
Holyoke
Springfield
Brockton
Provincetown
Fall River
New Bedford
Barnstable
COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC HEALTH
Learn to Cope Meeting Site
Community program location
MA Department of Public Health
BSAS
Bureau of Substance Abuse Services
Prevent • Treat • Recover • For Life
OFFICE OF
HIV
AIDS

Enrollment locations: 2008-2014

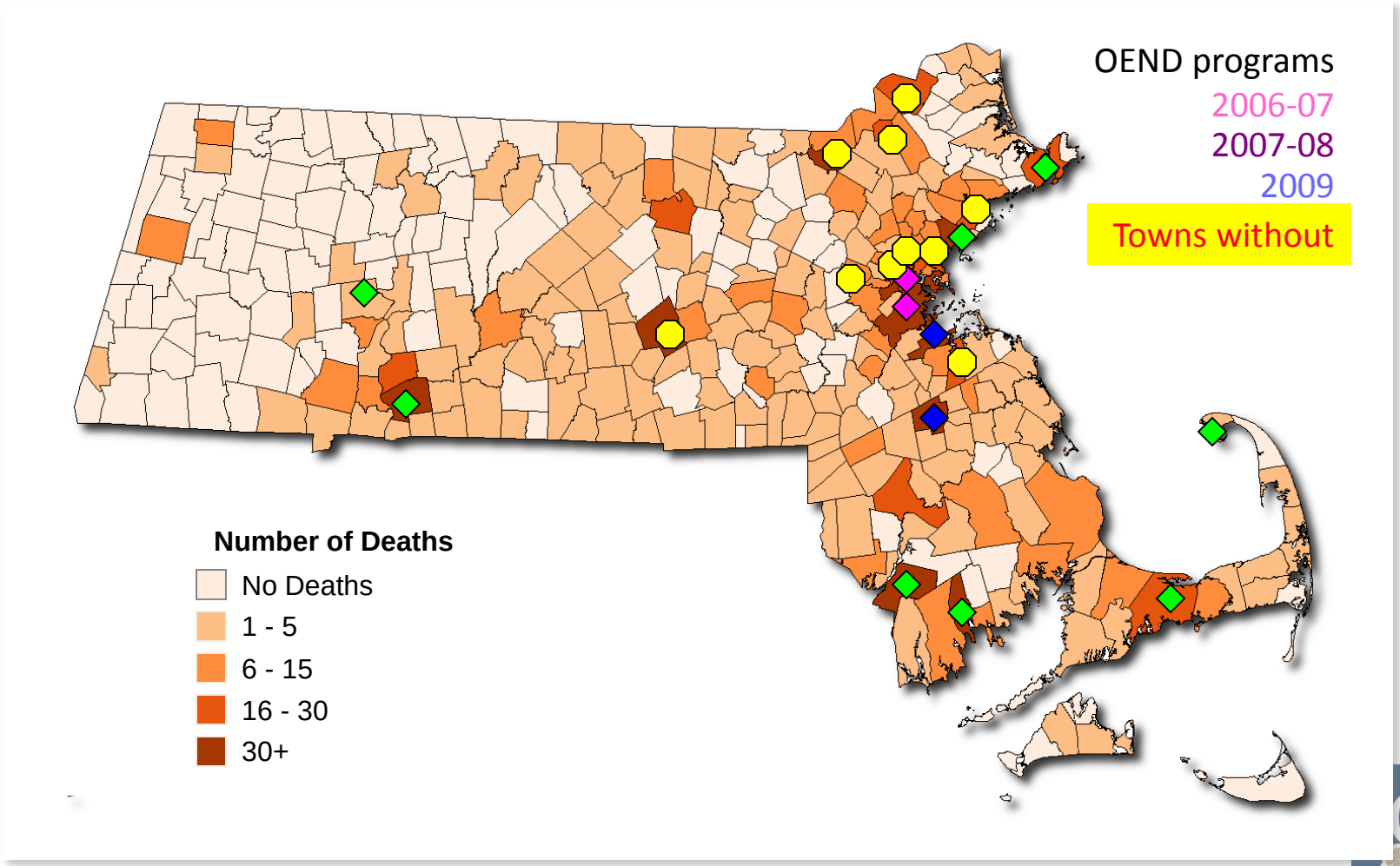


Program data from people with location reported: Users: 19,694 Non-Users: 10,250

Currently > 31,000 enrollees (16 per day) and

> 4000 overdose rescues documented (4 per day)

Opioid Overdose Related Deaths: Massachusetts 2004 - 2006



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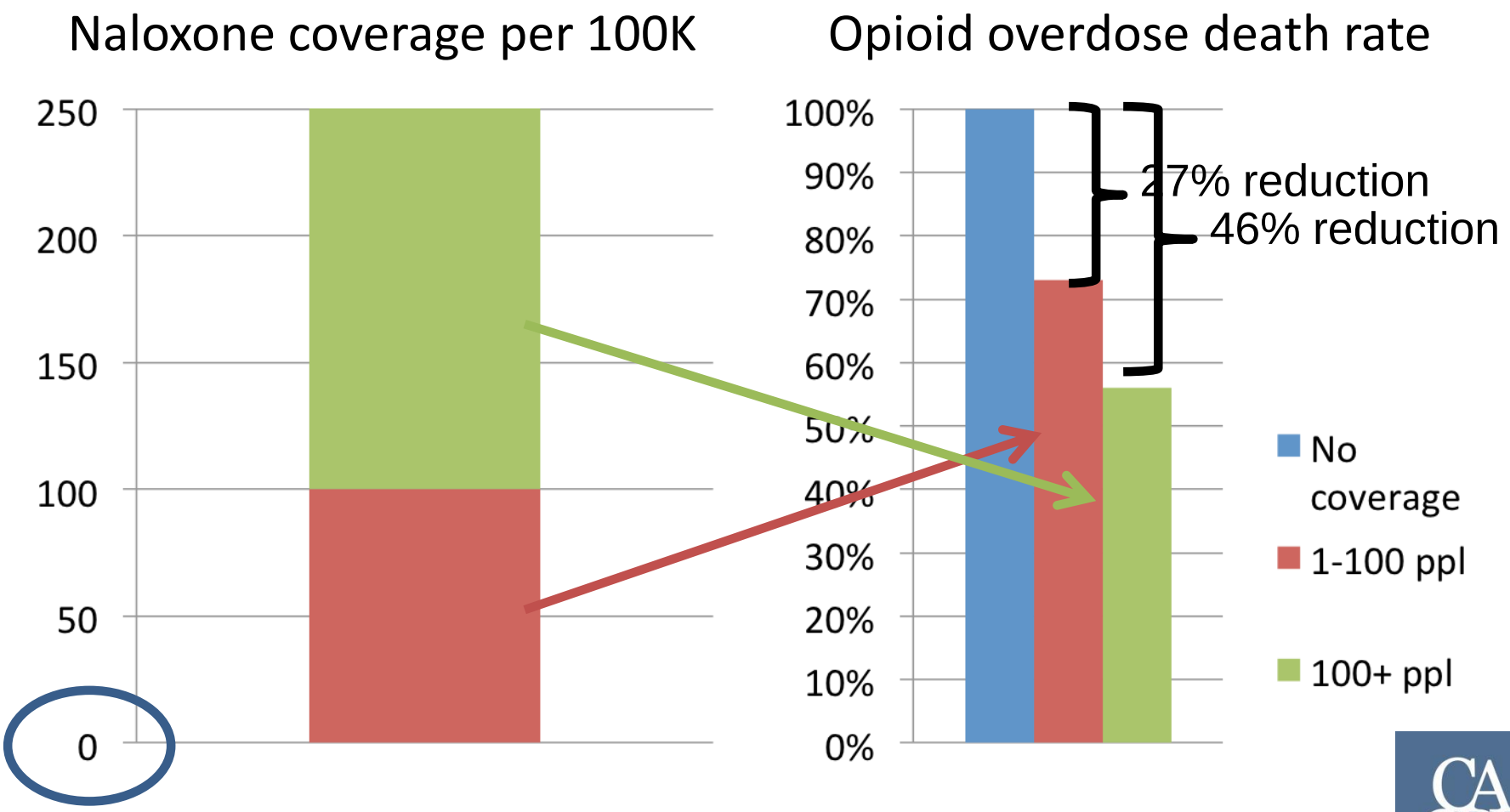
Fatal opioid OD rates by OEND implementation



Walley et al. *BMJ* 2013; 346: f174.

AMA
AMERICAN MEDICAL ASSOCIATION

"The **AMA** has been a longtime supporter of increasing the availability of Naloxone for patients, first responders and bystanders who can help save lives and has provided resources to bolster legislative efforts to increase acce
medication in

www.ama-assn.org/ama/pub/ne
07-naxolene-product-

NATIONAL DRUG CONTROL STRATEGY

2013

Community management of opioid overdose

World Health Organization

American Pharmacists Association
Improving medication use. Advancing patient care.
APhA

"**APhA** supports the pharmacist's role in selecting appropriate therapy and dosing and initiating and providing education about the proper use of opioid reversal agents to prevent opioid-related deaths due to overdose"

www.pharmacist.com/policy/controlled-substances-and-other-medications-potential-abuse-and-use-opioid-reversal-agents-2

ASAM
American Society of Addiction Medicine

Public Policy Statement on the Use of Naloxone for the Prevention of Drug Overdose Deaths

ASAM Board of Directors
April 2010

"Naloxone has been proven to be an effective, fast-acting, inexpensive and non-addictive opioid antagonist with minimal side effects... Naloxone can be administered quickly and effectively by trained professional and lay individuals who observe the initial signs of an opioid overdose reaction."

www.asam.org/docs/publicy-policy-statements/1naloxone-1-10.pdf

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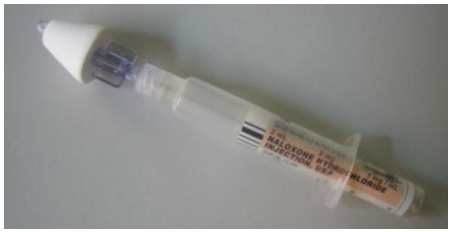
How to prescribe naloxone

- Three formulations
  1. Injectable
     - Dispense:
       - 2x Naloxone 0.4mg/ml single dose vial or 1x 0.4mg/ml 10ml vial
       - 2x IM syringe (3ml 25g 1” syringes recommended)
     - Directions: For opioid overdose, inject 1ml IM in shoulder or thigh. Repeat after 3 minutes, if no or minimal response

  2. Nasal (off-label)
     - Dispense:
       - 2x Naloxone 2mg/2ml prefilled luer-lock syringe
       - 2x Mucosal Atomizer Device nasal adapter
     - Directions: For opioid overdose, spray 1ml in each nostril. Repeat after 3 minutes, if no or minimal response



  3. Ezvio Auto-injector - http://www.evzio.com/hcp/

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Overdose Education and Naloxone Rescue

What people need to know:

1.Prevention - the risks:

- Mixing substances
- Abstinence- low tolerance
- Using alone
- Unknown source
- Chronic medical disease
- Long acting opioids last longer

2.Recognition

- Unresponsive to sternal rub with slowed breathing
- Blue lips, pinpoint pupils

[Patient education videos and materials at prescribetoprevent.org]

3.Response - What to do

- Call for help
- Rescue breathe
- Administer naloxone, continue breathing
- Recovery position
- Stay until help arrives

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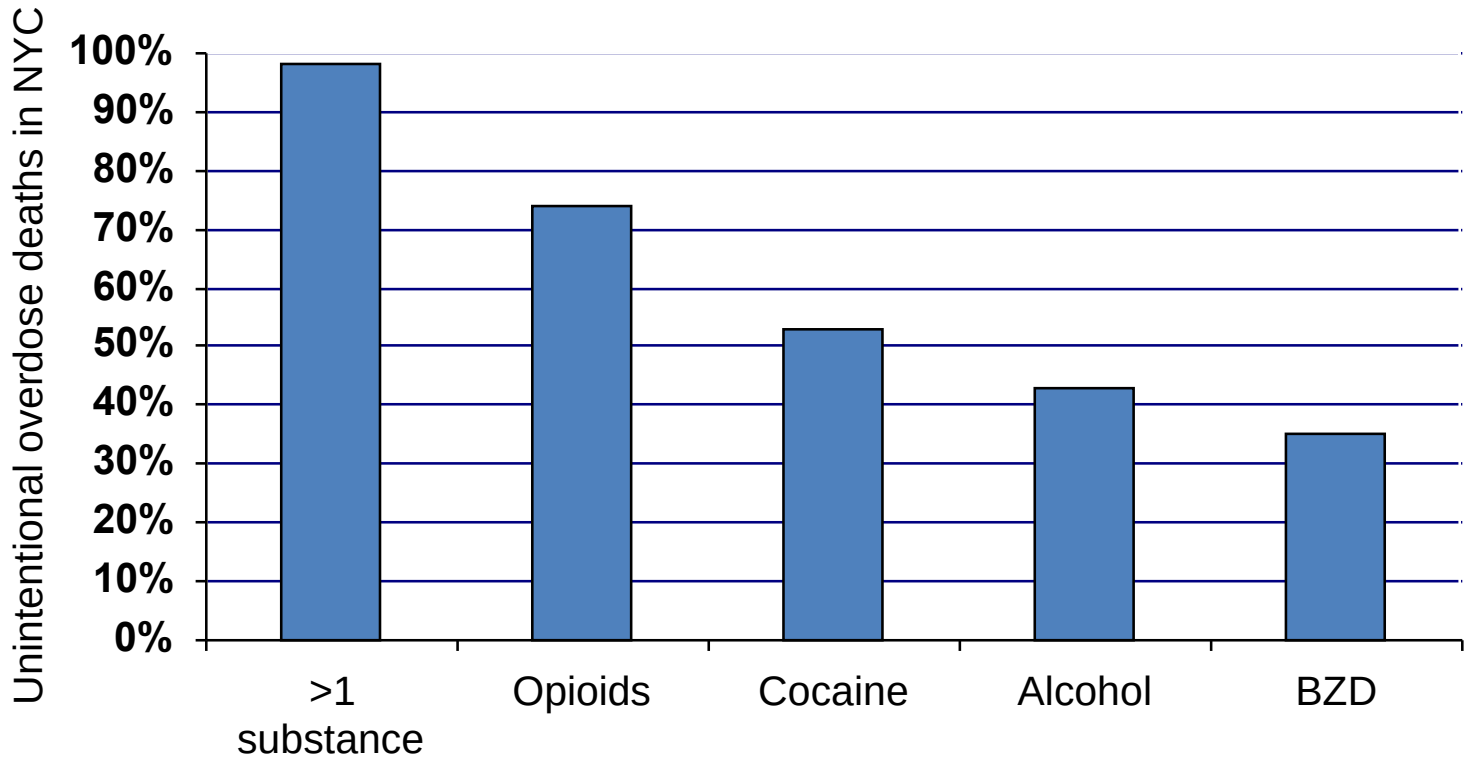
Polypharmacy

Overdose deaths in NYC 2006-2008



NYC Vital Signs. NYC DPMH. 2010

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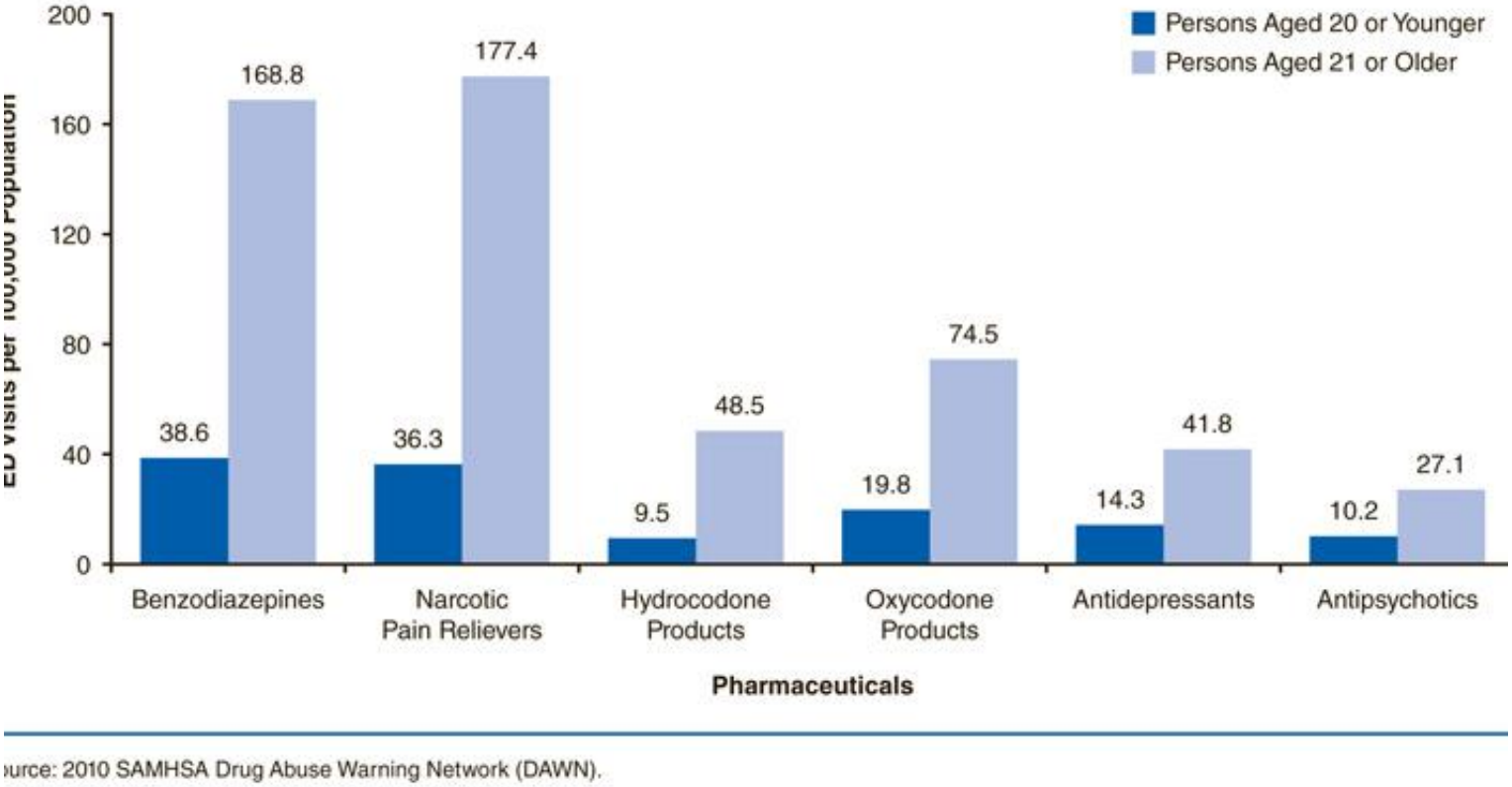
Rates of ED visits involving misuse or abuse of select pharmaceuticals per 100k, by age and drug: 2010



ource: 2010 SAMHSA Drug Abuse Warning Network (DAWN).

http://www.samhsa.gov/data/2k12/DAWN096/SR096EDHighlights2010.htm

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“Street pills”

- Benzodiazepines
  - Clonazepam (Klonopin) – “pins”
  - Alprazolam (Xanax) – “bars”
  - Diazepam (Valium)
  - Also Z drugs –ambien and lunesta
- Clonidine (Catapress) – “deans”
- Promethazine (Phenergan) – “finnegans”
- Queitiapine (Seroquel)
- Gabapentin (Neurontin) – “johnnies”
  - Pregabalin (Lyrica) – “super johnnies”
- Buproprion (Wellbutrin)

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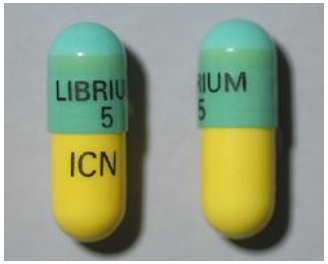
Benzos
Widespread Use – Uncommon drug of choice

- Due to their significant margin of safety and effectiveness
  - BZDs among the most prescribed psychotropic medications worldwide
  - Prescribed to women more than men
    - Lagnaoui *Eur J Clin Pharmacol* 2004; **60**: 523–9.
  - On WHO essential drug list that should be available in all countries
- In the lab, people self-administer benzos
  - but weak re-inforcers vs. alcohol, opioid, cocaine, and amphetamine
    - Jones et al. DAD 2012; 125: 8-18.
- Few drug treatment patients cite benzos as their drug of choice
    - Cole and Chiarello. J Psychiatr Res. 1990; 24 Suppl 2: 135-44.



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Self-medication

- One physician survey reported that:
  - 26% of psychiatrists
  - 11% of other physcians

  Used unsupervised benzodiazepines in the past year

Principles of Addiction Medicine, 4th edition p.535.

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Prescribers are ambivalent

On the one hand

- Rarely drug of choice
- Given the amounts prescribed, benzo abuse is “remarkably low”
- Work fast: few side effects
- Benefit maintained over time

Schenck CH; Mahowald MW Am J Med 1996 Mar;100(3):333-7.

On the other hand

- Non-medical use very common
- Concerning subgroups
  - Other sedating meds
  - Elderly
  - Other addictions
- Hard to discontinue
- Does not improve long-term course of PTSD
- Co-morbid depression may worsen

Stevens, Pollack. J Clin Psychiatry 2005; 66s2: 21-27

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What should be done about pills with a street value?

- Prescribe with caution
- Educate patients
  - Safety first – Teens, mixing meds, safe storage
  - Function over feelings
  - Risk of tolerance to benefits and withdrawal
- Communicate between prescribers
- Discontinue if risks outweigh the benefits

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Case

- You are called to admit a 29 yo woman with polydrug overdose, complicated by aspiration, and a left arm cellulitis. She was found unresponsive in the bathroom of a restaurant with a syringe, cooker and filters.
  - She works as a waitress and has been injecting heroin daily since age 23. She also uses cocaine on the weekends and drinks alcohol after work. She sometimes does sex work, when she does not have enough money.
  - She is prescribed clonazepam, clonidine and gabapentin for panic disorder and mood stabilization.
  - She tried methadone and buprenorphine in the past when she was pregnant. She intends to continue using again when she leaves the hospital. Despite your best brief intervention and motivational interviewing…
  - ***She is not interested in treatment at this time.***

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  - Trades sex for drugs, when money is short
  - Prescribed clonazepam, clonidine and gabapentin for panic disorder and mood stabilization
  - Treated with methadone and buprenorphine in the past when pregnant
  - Intends to use again on discharge

  Despite your best brief intervention and motivational interviewing…
  - ***She is not interested in treatment at this time.***

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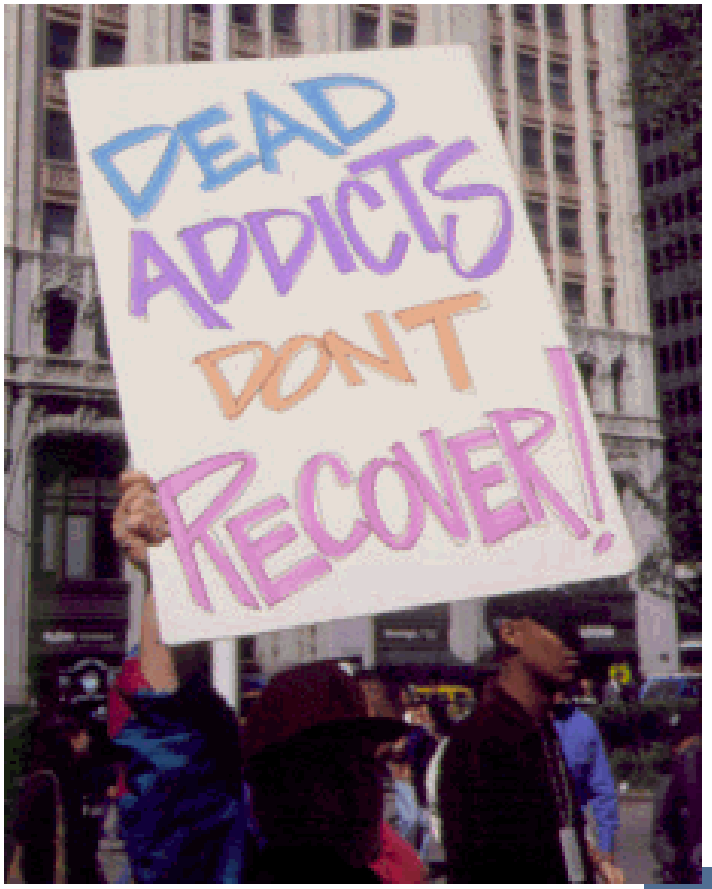
Case

1. Discuss her addiction treatment options – conduct a brief intervention
    - Residential treatment, intensive outpatient, pharmacotherapy, 12-step groups
2. Review her injection and other drug use routine for knowledge and readiness
    - Educate/ re-enforce safer use strategies
        - NSP, keeping substances safe from others, not using alone, tester shots, PrEP
3. Ask her about her overdose experience
    - Make a plan with her to reduce her own overdose risk and how to respond to others
    - Prescribe naloxone rescue kit if available
4. Work to reduce sexual risk
    - Condoms
    - PEP and PrEP
5. Screen her for interpersonal violence.
    - Offer IPV and sex worker services info
5. Express concern about her polypharmacy and polysubstance use and discuss strategies to reduce
    - Speak to the prescriber of her clonazepam, clonidine, and gabapentin so the prescriber is aware of the overdose
    - Encourage closer monitoring and a risk-benefit analysis for safety

Learning objectives

At the end of this session, you should be able to:

1. Define harm reduction and apply it to patient care
2. Teach overdose prevention strategies
3. Minimize the risk of polypharmacy among patients



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Prescribe to Prevent:
Overdose Prevention and Naloxone Rescue Kits for Prescribers and Pharmacists

Go to prescribetoprevent.org

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Thanks!

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Sarah Wakeman for several harm reduction slides

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Bathrooms are injection facilities
How to make them safer?

Make your bathrooms safer - outfit bathrooms with:

- Secure biohazard boxes
- Good lighting
- Mirrors
- Doors that open out
- Call button
- Intercomm system
- Safer injection equipment
- Naloxone rescue kit

1 IN 5 OVERDOSE DEATHS HAPPEN IN PUBLIC BATHROOMS

CHECK YOUR RESTROOMS

YOUR ACTIONS COULD HELP SAVE A LIFE

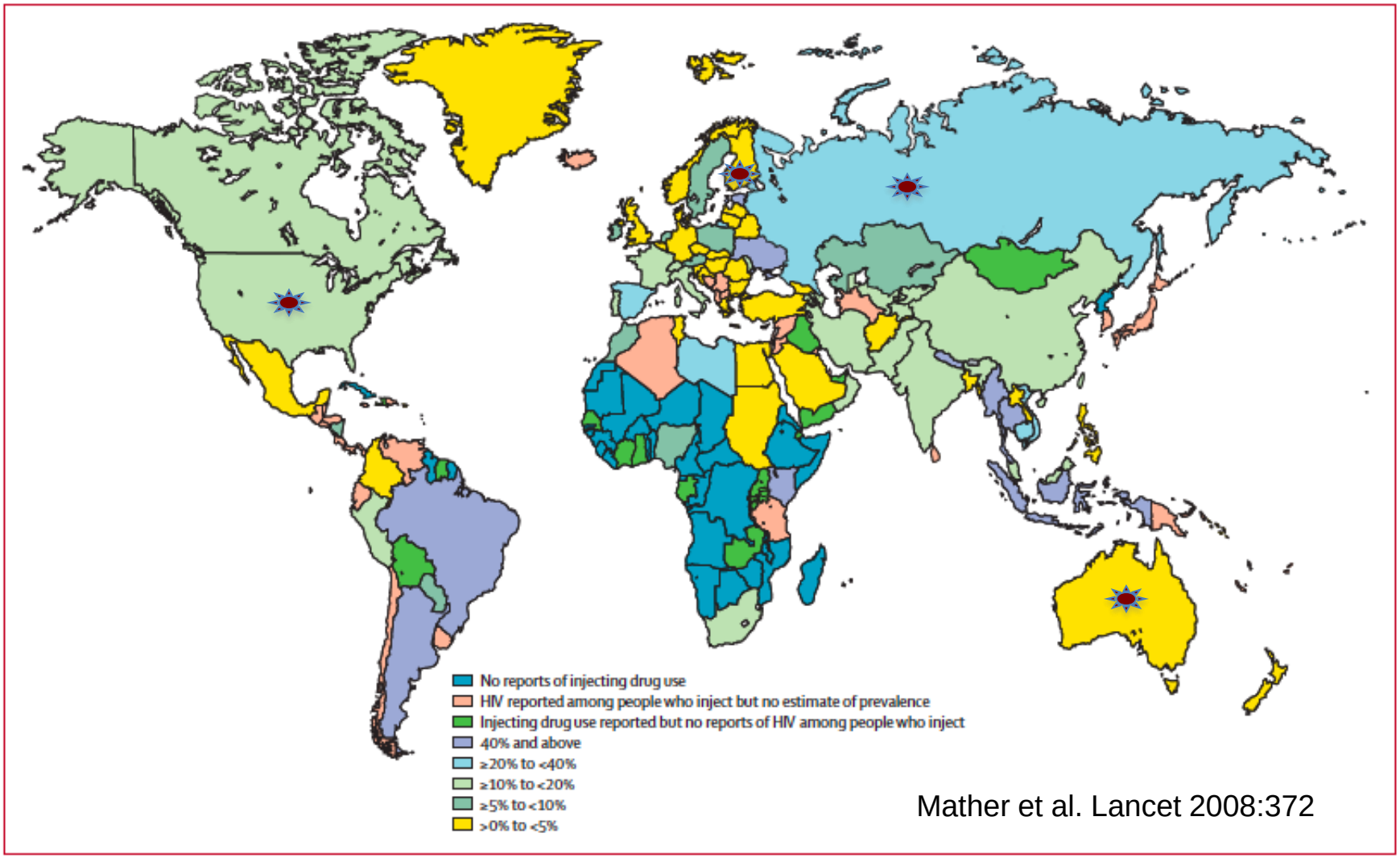
KNOW WHAT TO LOOK FOR
- Unresponsive
- Slow breathing
- Lack of breathing
- Blue lips/fingertips

KNOW WHAT TO DO
- Call 911 immediately
- Perform rescue breathing
- Administer Narcan

For more information visit
www.bphc.org/ahope

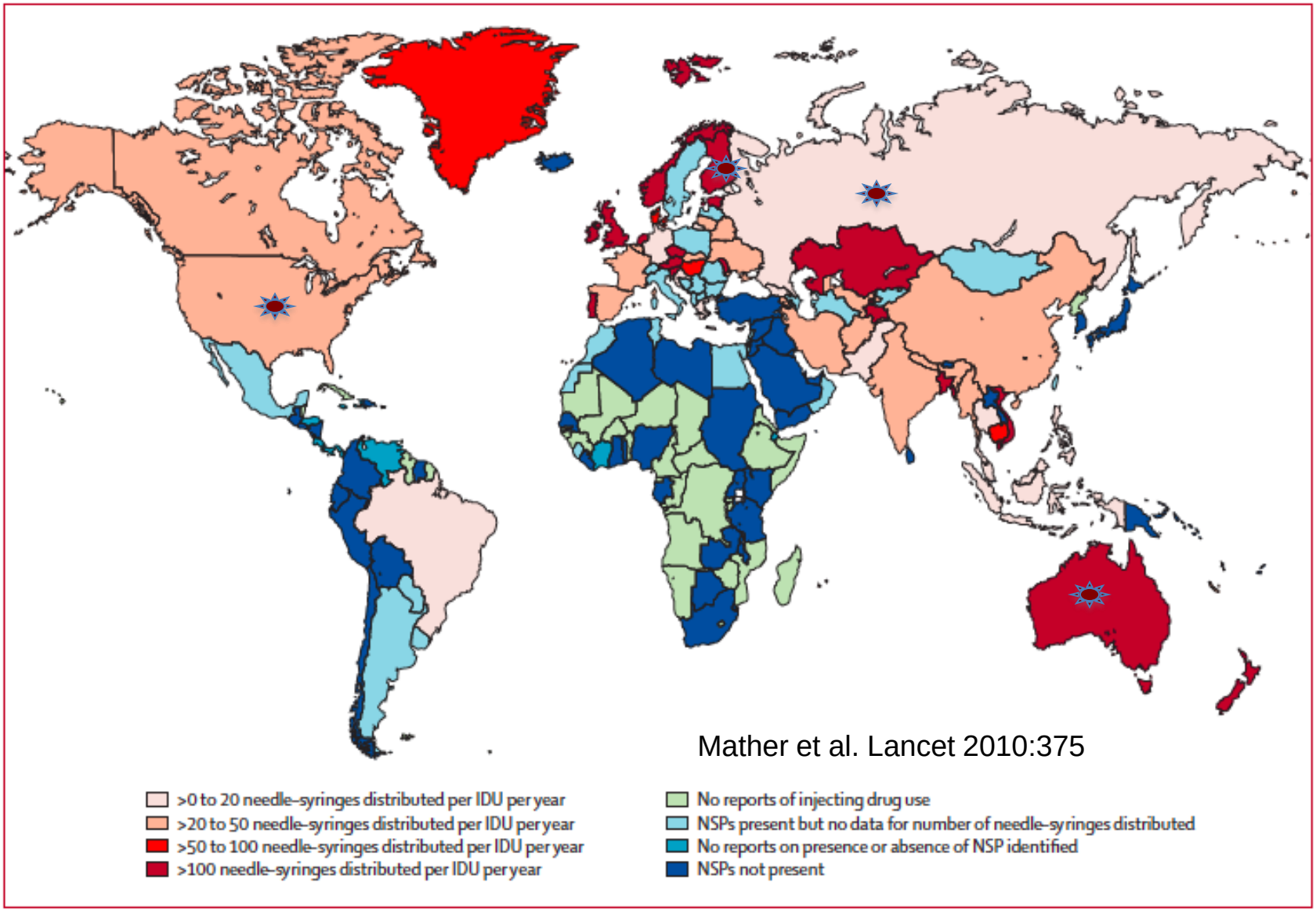
BOSTON PUBLIC HEALTH COMMISSION

Prevalence of HIV infection among people who inject drugs



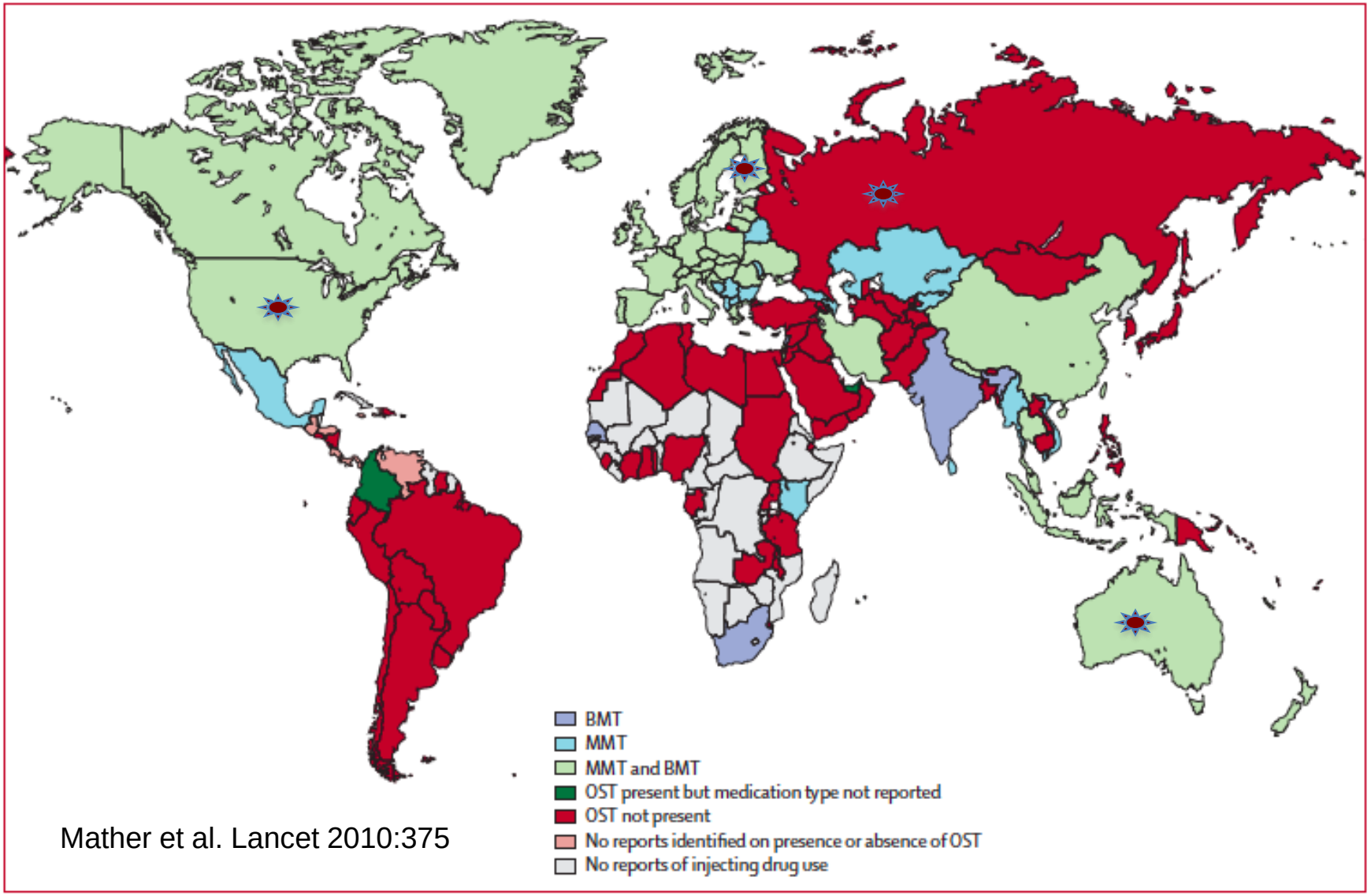
Mather et al. Lancet 2008:372

Number of needle-syringes distributed per PWID per year



Mather et al. Lancet 2010:375

Availability of methadone and buprenorphine maintenance



Mather et al. Lancet 2010:375

Summary

- Injection drug use involves several steps, each with risks of infection
- Engaging with patients can help prevent harm
- Encourage users to:
  - Find a clean setting
  - Use sterile water
  - Cook
  - Dental pellets for filter if possible
  - Clean, fresh syringe
  - One-Wipe alcohol swipe
  - Needleless syringes for sharing
  - Vitamin C for solids

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How do you incorporate overdose education and naloxone rescue kits into medical practice?

1. Prescribe naloxone rescue kits
   - PrescribeToPrevent.org

2. Work with your overdose education and naloxone distribution program

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Overdose Prevention in Medical Settings

- Review medications – Communicate with other prescribers
- Take a substance use history
- Check the prescription monitoring program
- Overdose history: Where is the patient at as far as overdose?

– Ask your patients whether they have overdosed, witnessed an overdose or received training to prevent, recognize, or respond to an overdose

  - Have you ever overdosed?
    - What were you taking?
    - How did you survive?
  - What is your **plan** to protect yourself from overdose?
    - How do you keep your medications safe?
    - Are they locked up?

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Overdose Prevention in Medical Settings

Overdose witness history:

- How many overdoses have you witnessed?
  - Were any fatal?
  - What did you do?
- What is your **plan** if you witness an overdose in the future?
  - How do you:
    - recognize an overdose?
    - call for help?
    - rescue breathe?
    - give naloxone?
  - Do you have a naloxone rescue kit?
  - Do you feel comfortable using it?

DEA NFLIS 2006 Report

- Prescription drugs seized by law enforcement and analyzed forensics labs: 2001-2005

Drug	Rx Dispensed	Items seized per 10k Rx Dispensed
Diazepam	65M	6.06
Alprazolam	169M	5.96
Morphine	23M	5.80
Oxycodone	161M	5.29
Clonazepam	82M	3.55
Hydrocodone	550M	1.63
Codeine	165M	1.06

If prescribing…

Consider when prescribing pills with a street value

- Intent –
  - Are you treating a diagnosed medical problem?
- Effect –
  - Does the medication improve the patient's functional status or worsen it?
- Monitoring –
  - Are you assessing the patient at the peak or trough effect of the medication?

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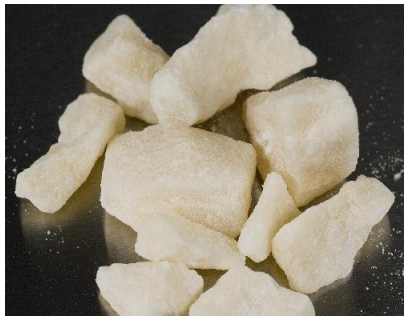
Injecting Solids

- Oxycontin, Percocet, Crack
- All bases, need acid to dissolve
- Vinegar is caustic
- Lemon juice as solvent linked to disseminated candida
  - Buchanan et al. DAD 2006:81: 221-229.
- Ideal is Vitamin C powder



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