



EXCEPTIONAL CARE. WITHOUT EXCEPTION.

BU School of Medicine



Clinical Addiction Research and Education

Bystander Overdose Education and Naloxone Distribution in Massachusetts

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Thursday, April 12, 2012

13823 **Overdose Prevention & Narcan Enrollment Form**

Date: 05/19/2011 Staff: [REDACTED] Site: 03 Location: 05

NEP Code (all pros): [REDACTED]

Overdose Prevention & Narcan Enrollment Form

What is the zip code where the enrollee lives? [REDACTED]

White MF
 Other: _____ FIM

ALL PARTICIPANTS:

How many times have you **witnessed** an overdose in your life?
 (Write in the **NUMBER**. Never = 0.)

During the last thirty (30) days, did you use any of the following substances? (Write in the **NUMBER** of days used. No use in past 30 days = 0)

ACTIVE USERS, IN TREATMENT, OR IN RECOVERY:

During the last thirty (30) days, did you use any of the following substances? (Write in the **NUMBER** of days used. No use in past 30 days = 0)

- Heroin # 30
- Methadone # 00
- Suboxone/Subutex / buprenorphine # 00
- Benzos/Barbituates (Klonopin, Xanax, Alivan, Valium, Librium, Phenobarbital, Fiorinal, etc) # 19
- Clonidine # 00
- Cocaine/Crack # 12
- Alcohol # 00
- Methamphetamine # 00
- Any other opioid (Percocet, OxyContin, Oxycodone, Vicodin, Darvocet, Fentanyl, etc) # 00
- Other: _____ # 00

During the last thirty (30) days, did you use any of the following substances? (Write in the **NUMBER** of days used. No use in past 30 days = 0)

- Heroin # 30
- Methadone # 00
- Suboxone/Subutex / buprenorphine # 00
- Benzos/Barbituates (Klonopin, Xanax, Alivan, Valium, Librium, Phenobarbital, Fiorinal, etc) # 19
- Clonidine # 00
- Cocaine/Crack # 12
- Alcohol # 00
- Methamphetamine # 00
- Any other opioid (Percocet, OxyContin, Oxycodone, Vicodin, Darvocet, Fentanyl, etc) # 00
- Other: _____ # 00

How many times have you overdosed in your life? (Write in the **NUMBER**)

Did you ever receive Narcan? No
 (may check more than one box) Yes, from medical per _____

What drugs were taken the last time? (may check more than one box)

Heroin Benz
 Methadone Subc
 Alcohol Othe

STAFF ASSESSMENT OF ACTIVE USERS ONLY:

Is client interested in referral to treatment?
 No/Not Appropriate Yes, but not

Notes/Comments:

Overdose Report-Back & Narcan Refill Form

Expiration Date: _____ No. of doses given: _____
Regarding the overdose experience: Date of Overdose: 10/01/2011
Note: If "Don't know" is checked or a question is unanswered, please explain in the comments section

Who overdosed? (check one) 1 Friend 7 Partner 4 Client 5 Self 8 Family 3 Stranger
Gender of the person who overdosed? 1 Female 2 Male 3 MtF 4 FtM 5 Unknown
Overdosed on what drugs? (check all that apply) 1 Heroin 1 Benzos/Barbituates 1 Cocaine/Crack 1 Methadone
 1 Suboxone 1 Any other Opioid 1 Alcohol

What setting did it occur in? 1 Private (apt/house) 2 Public (park, subway, bathroom, car, hospital)
Did the person live? 1 Yes 2 No 3 Don't know
Was 911 called? 1 Yes 2 No 3 Don't know
Were Police/EMTs/Firefighters present? 1 Yes 2 No 3 Don't know

If YES, was the interaction: 1 Positive 2 Neutral 3 Negative
Did you stay with the person until the Narcan wore off and/or the person got medical attention?
 1 Yes 2 No
What else was done? (check all that apply)
 1 Slap 1 Ice/Water 1 Salt/Cocaine shot 1 Recovery Position 1 Other: _____
 1 Sternal/Lip Rub 1 Rescue Breathing → If Yes, was a barrier used? 1 Yes 2 No 3 Don't know

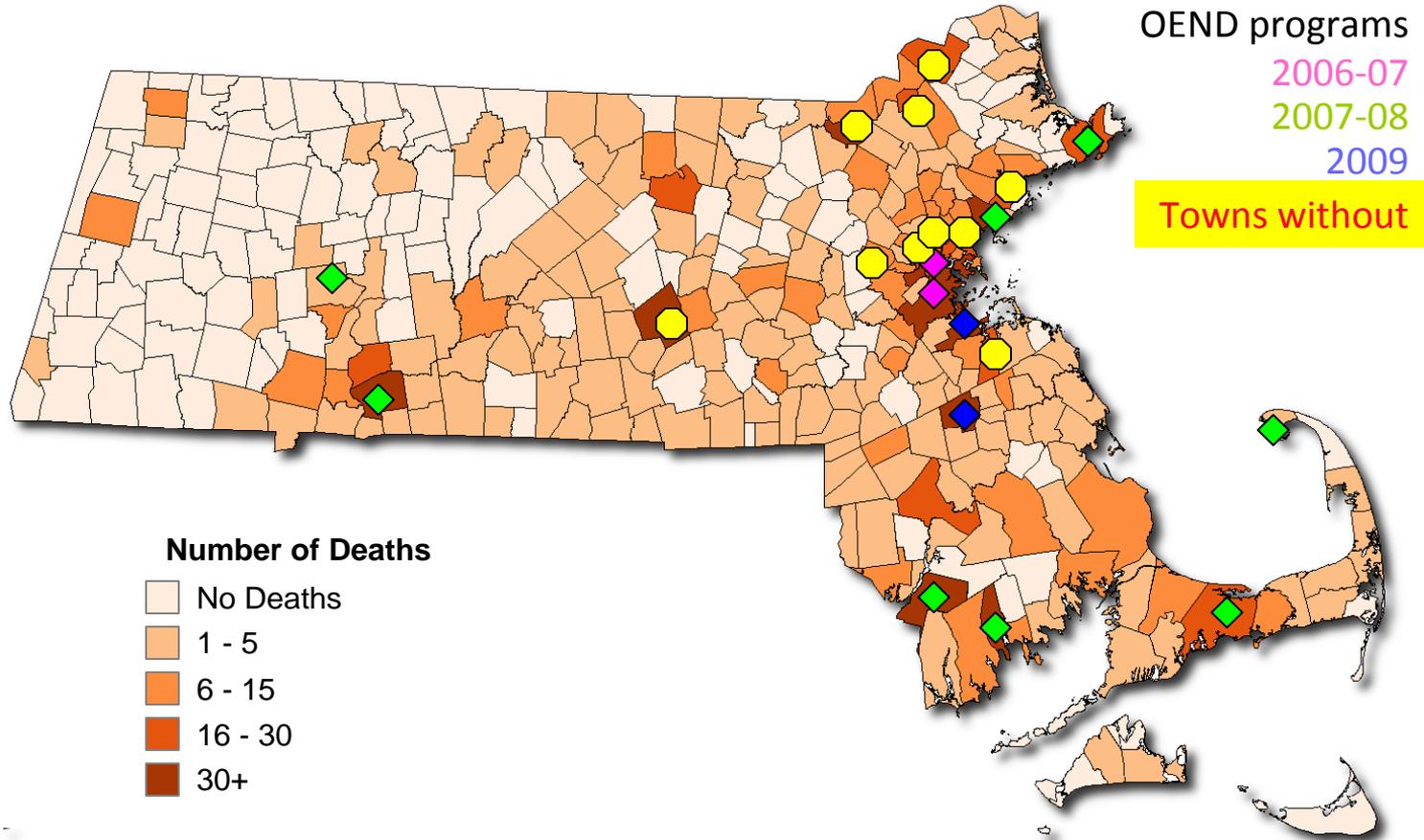
Code and abbreviations:
NEP Code First three letters of mother's first name + date of birth (mm/dd/yy) Ex: GER053077
BSAS Code First and third letters of first and last name Ex: Joseph "Joe" Francis Blow= JSBO

Take home points

1. Opioid overdose death rates were reduced where OEND was implemented
2. Nonmedical community health workers provide effective OEND with low rates of adverse events

Impact of OEND on overdose rates in Massachusetts

Opioid Overdose Related Deaths: Massachusetts 2004 - 2006



INPEDE OD

*(Intranasal Naloxone and Prevention
EDucation's Effect on OverDose)*

Study

Objective:

Determine the impact of opioid overdose education with intranasal naloxone distribution (OEND) programs on fatal and non-fatal opioid overdose rates in Massachusetts

Supported: Center for Disease Control and Prevention 1R21CE001602

Design, population and setting

- Design:
 - Quasi-experimental interrupted time series
- Population:
 - 19 Massachusetts cities and towns with 5 or more opioid-related unintentional or undetermined poison deaths in each year from 2004-2006
- Setting:
 - MA OEND programs were implemented by 8 community-based programs starting in 2006

Outcomes

Variable	Element	Source
Outcome	Fatal opioid OD per town population per year	Registry of Vital Records and Statistics
	*Defined as unintentional or undetermined intent opioid poisoning (X40-X44, Y10-Y14) in the underlying COD field and a T code of T40.0 – T40.4 and/or T40.6 in any of the multiple COD fields	
Outcome	Opioid-related ED or hospital discharges per town population per year	MA Div. of Health Care Finance and Policy Discharge Database
	*Defined as hospital and emergency department discharges with codes for opioid intoxication and poisoning ICD-9-CM 965 (.00, .01, .02, .09) or E code E850 (.0, .1, .2)	



Analyses

Poisson regression to compare annual opioid-related overdose rates among cities/towns by OEND implementation

- Natural interpretations as rate ratios (RRs)
- Models adjusted for the city/town population rates of:
 - age under 18
 - Male
 - race/ ethnicity
 - below poverty level
 - inpatient detox treatment
 - methadone treatment
 - DPH-funded bup treatment
 - prescriptions to doctor shoppers
 - year

Fatal opioid OD rates by OEND implementation: 2002-09

	RR	ARR*	95% CI
Cumulative enrollments per 100k			
No enrollment	Ref	Ref	Ref
1-150	0.92	0.73**	0.58-0.91
> 150	0.83	0.50**	0.36-0.71

* Adjusted Rate Ratios (ARR) All rate ratios adjusted for the city/town population rates of age under 18, male, race/ ethnicity (hispanic, white, black, other), below poverty level, medically supervised inpatient withdrawal treatment, methadone treatment, BSAS-funded buprenorphine treatment, prescriptions to doctor shoppers, and year

** p<0.05

Total OEND enrollments through 2006-09 in 19 selected towns: 2912

Unpublished data

Opioid-related ED visits and hospitalization rates by OEND implementation: 2002-09

	RR	ARR*	95% CI
Cumulative enrollments per 100k			
No enrollment	Ref	Ref	Ref
1-150	1.15	1.01	0.80-1.08
> 150	0.99	0.93	0.83-1.22

* Adjusted Rate Ratios (ARR) All rate ratios adjusted for the city/town population rates of age under 18, male, race/ ethnicity (hispanic, white, black, other), below poverty level, medically supervised inpatient withdrawal treatment, methadone treatment, BSAS-funded buprenorphine treatment, prescriptions to doctor shoppers, and year

Total OEND enrollments through 2006-09 in 19 selected towns: 2912

Unpublished data

INPEDE OD Study Summary

1. Fatal OD rates were decreased in MA cities-towns where OEND was implemented and the more enrollment the lower the reduction
2. No clear impact on acute care utilization

The Massachusetts OEND model

Standing order
Intranasal naloxone

Massachusetts OEND pilot: Standing order model

- Pilot program conducted under state Drug Control Program regulations (M.G.L. c.94C & 105 CMR 700.000)
- Medical Director issued standing order for distribution to potential bystanders
 - Traditional prescription not needed
- Naloxone distributed by public health workers who are trained, but nonmedical staff
 - >> access to populations at highest risk

OEND Program Components - Massachusetts

- Community program staff enroll, train and distribute naloxone
- Kit includes 2 doses and instructions
- Curriculum delivers education on OD prevention, recognition, and response
- Referral to addiction treatment available
- Reports on overdose rescues collected when enrollees return for refills
- Each overdose report reviewed by data committee

Staff Training and Support

Staff complete:

- 4 hour didactic training
- knowledge test
- At least 2 supervised bystander training sessions

Sites participate in:

- Quarterly all-site meetings
- Monthly adverse event phone conferences

Intranasal Administration

Pro

- 1st line for some local EMS
- RCTs: slower onset of action but milder withdrawal
- Acceptable to non-users
- No needle stick risk
- No disposal concerns



Con

- Not FDA approved
- No large RCT
- Assembly required, subject to breakage
- High cost:
 - \$30+ per kit
- Naloxone maker is not participating in the medicaid rebate program for outpatient medications
- Current national shortage

Scope of OEND in Massachusetts

Enrollments and Rescues: 2006-2012

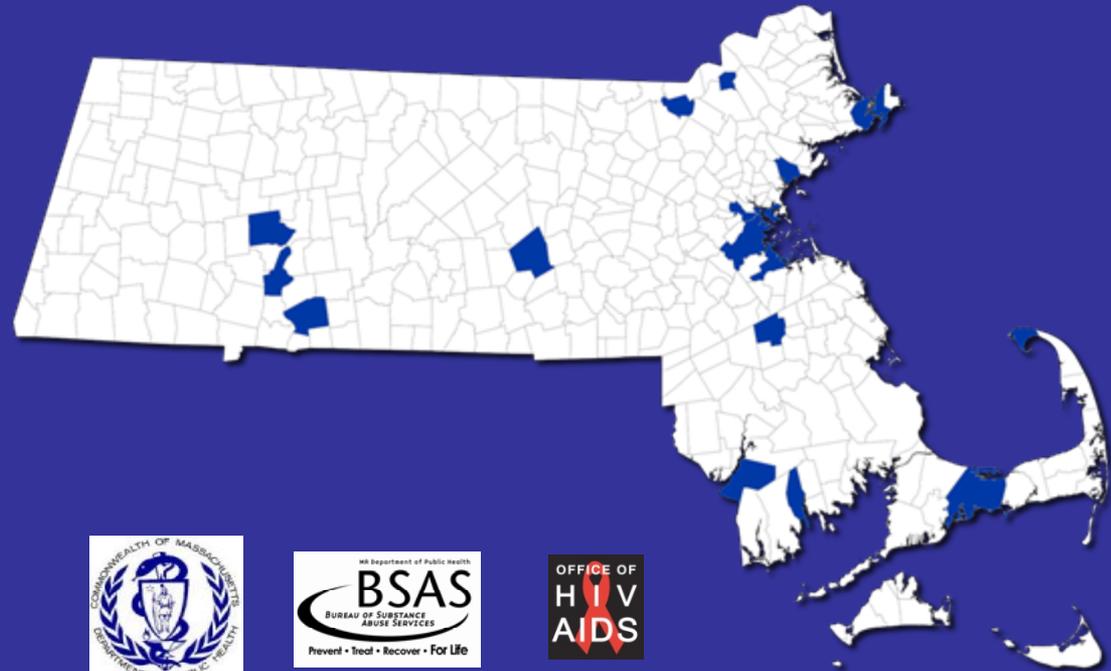
- Enrollments

- 12,367 individuals
- 300 per month

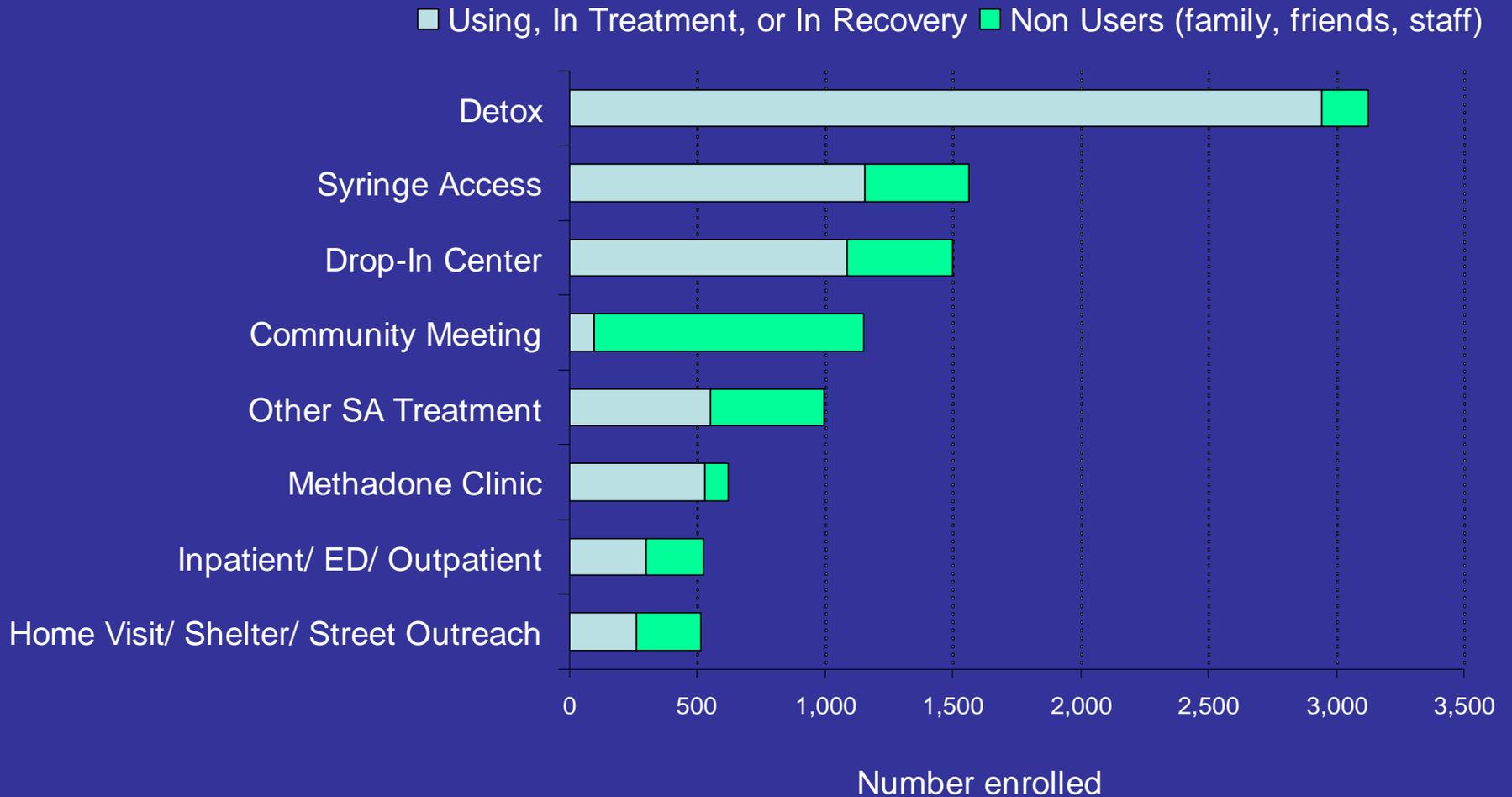
- Rescues

- 1301 reported
- 30 per month

- AIDS Project Worcester
- AIDS Support Group of Cape Cod
- Brockton Area Multi-Services Inc. (BAMSI)
- Bay State Community Services
- Boston Public Health Commission
- Northeast Behavioral Health
- Cambridge Cares About AIDS
- Greater Lawrence Family Health Center
- Holyoke Health Center
- Learn to Cope
- Lowell Community Health Center
- Seven Hills Behavioral Health
- Tapestry Health
- SPHERE



Enrollment locations: 2008-present



Program data

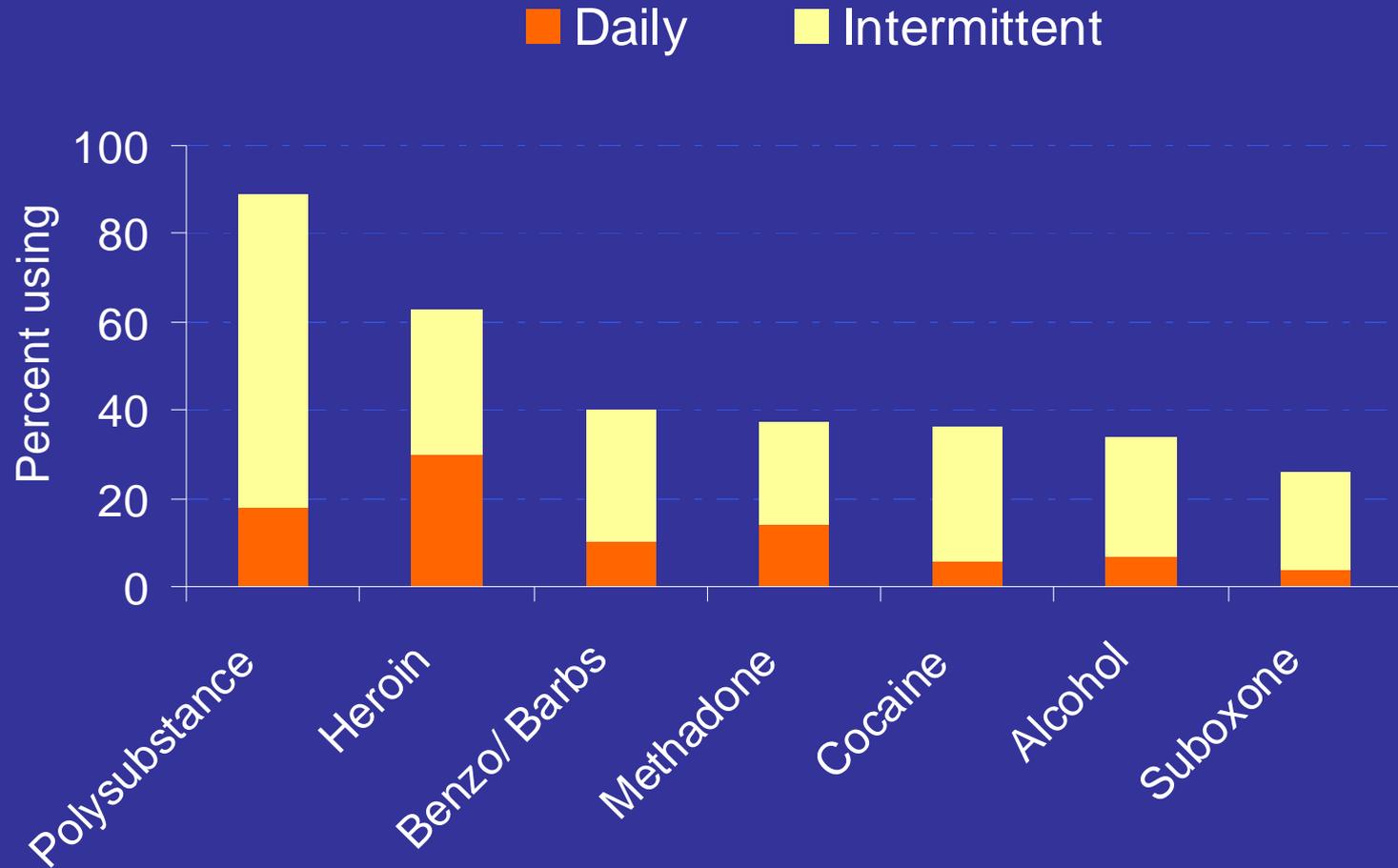
Data from people with location reported: Users: 7,220 Non-Users: 3,522



Enrollee characteristics: 2006-2012

	Active use, In treatment, In recovery N=8476	Non-User (Family, friend, staff) n=4079
Witnessed overdose ever	75%	43%
Lifetime history of overdose	50%	
Received naloxone ever	44%	
Inpatient detox, past year	65%	
Incarcerated, past year	28%	
Reported OD reversal	7.5%	2.1%

Enrollee past 30 day use: 2006-2012



Data only from people with current use or in treatment N= 8476



OEND program rescues: 2006-2012

	Active use, In treatment, In recovery N=1004	Non-User (Family, friend, staff) N=108
911 called or public safety present	29%	64%
Rescue breathing performed	33%	33%
Stayed until alert or help arrived	90%	91%

Adverse Events: Sept 2006- Jan 2012

OD Reports
N=1346

Deaths	7 / 1346	0.5%
OD requiring 3 or more doses	52 / 1226	4%
Recurrent overdose	1/1346	0.1%
Precipitated withdrawal	4/1346	0.3%
Difficulty with device	7/1346	0.7%
Negative interactions with public safety	82 / 332	25%
Confiscations	158 / 3594	4%

Program data

Take home points

1. Opioid overdose death rates were reduced where OEND was implemented
2. Nonmedical community health workers provide effective OEND with low rates of adverse events

Implication

- Naloxone should be made more widely available to trained laypersons in an effort to reduce deaths due to opioid overdose

Considerations

- Intranasal works and is popular
 - It could be improved with a one-step, **affordable** FDA-approved intranasal delivery device
- Nonmedical community health workers provide effective OEND
 - Broad dissemination to high risk groups and their networks (family, friends and staff)
 - Facilitated by state-supported standing order
 - Prescription status is a barrier
- Fear of police is a barrier to help seeking
 - Good Samaritan laws would address in part

Thank you! awalley@bu.edu

MA DPH

- John Auerbach
- Andy Epstein
- Holly Hackman
- Michael Botticelli
- Kevin Cranston
- Dawn Fakuda
- Sarah Ruiz
- Barry Callis
- Grant Carrow
- Len Young
- Kyle Marshall
- Office of HIV/AIDS
- Bureau of Substance Abuse Services

RTI – Alex Kral

BU/BMC

- Maya Doe-Simkins
- Amy Alawad
- Ziming Xuan
- Al Ozonoff
- Emily Quinn
- Gregory Patts
- Chris Chaisson
- Jeffrey Samet
- Peter Moyer
- Ed Bernstein

BPHC

- Adam Butler

Program sites, staff and participants

NOPE group

Disclosures – A Walley

- The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:
 - None to disclose
- My presentation will include discussion of “off-label” use of the following:
 - Naloxone is FDA approved as an opioid antagonist
 - Naloxone delivered as an intranasal spray with a mucosal atomizer device has not been FDA approved and is off label use
- Funding: CDC National Center for Injury Prevention and Control 1R21CE001602-01

Factors associated with help-seeking by bystander during an overdose

	Help seek	AOR*	95% CI
User status			
Heroin user	23%	Ref	Ref
Non-heroin opioid user	27%	1.02	0.66-1.56
Non-opioid user	28%	1.26	0.73-2.16
Non-user	67%	5.13	2.87-9.17
Trained		0.99	0.58-1.70
Public setting	40%	1.86	1.26-2.75

* Adjusted Odds Ratio (AOR) All odds ratios adjusted age race, gender

Among 762 rescues from 2006-2010, EMS help was sought at 216 (28%)

Unpublished data

Factors associated with help-seeking by bystander during an overdose

	Help seek	AOR*	95% CI
Time to work			
< 1 minute	22%	Ref	Ref
1-3 minutes	23%	1.57	0.82-2.99
3-5 minutes	31%	1.88	1.01-3.49
> 5 minutes	42%	2.94	1.48-5.81
2 or more drugs used during OD	36%	1.09	0.77-1.56

* Adjusted Odds Ratio (AOR) All odds ratios adjusted age race, gender

Among 762 rescues from 2006-2010, EMS help was sought at 216 (28%)

Unpublished data

Change In Substance Use Between First and Second Enrollment, n=325

# of Days Used Out of Past 30	Increased	Decreased	No change	p-value*
Heroin	35%	38%	27%	0.52
Methadone	26%	22%	52%	0.72
Buprenorphine	22%	20%	58%	0.31
Other Opioids	18%	19%	63%	0.51
Cocaine	26%	30%	44%	0.41
Alcohol	21%	22%	57%	0.86
Benzo/Barbiturate	30%	23%	47%	<0.01
Number of substances** used	40%	38%	21%	0.65

*Wilcoxon signed rank test which compares the mean ranks among two repeated measures

**Participants were asked about use of heroin, methadone, buprenorphine, other opioids, cocaine, alcohol, benzodiazepine/barbiturate, methamphetamine, clonidine, and other substances

Limitations

- True population at risk for overdose is not known
 - Adjusted for demographics, treatment, PMP, and year
- Cause of death subject to misclassification
 - One medical examiner for all of MA
- Non-fatal overdose measure >> Diagnostic codes are subject to misclassification
 - No reason bias should be in one direction
- Overdoses may occur in clusters
 - Study conducted over wide area and several years
- Measures of OEND implementation have not been validated

Opioid OD conceptual model

