

Harm Reduction and Research: Evaluation of the Supportive Place for Observation and Treatment (SPOT)



Photo Credit: AthenaHealth

Jessie M. Gaeta, MD

Chief Medical Officer, Boston Health Care for the Homeless Program

Assistant Professor, Boston University School of Medicine



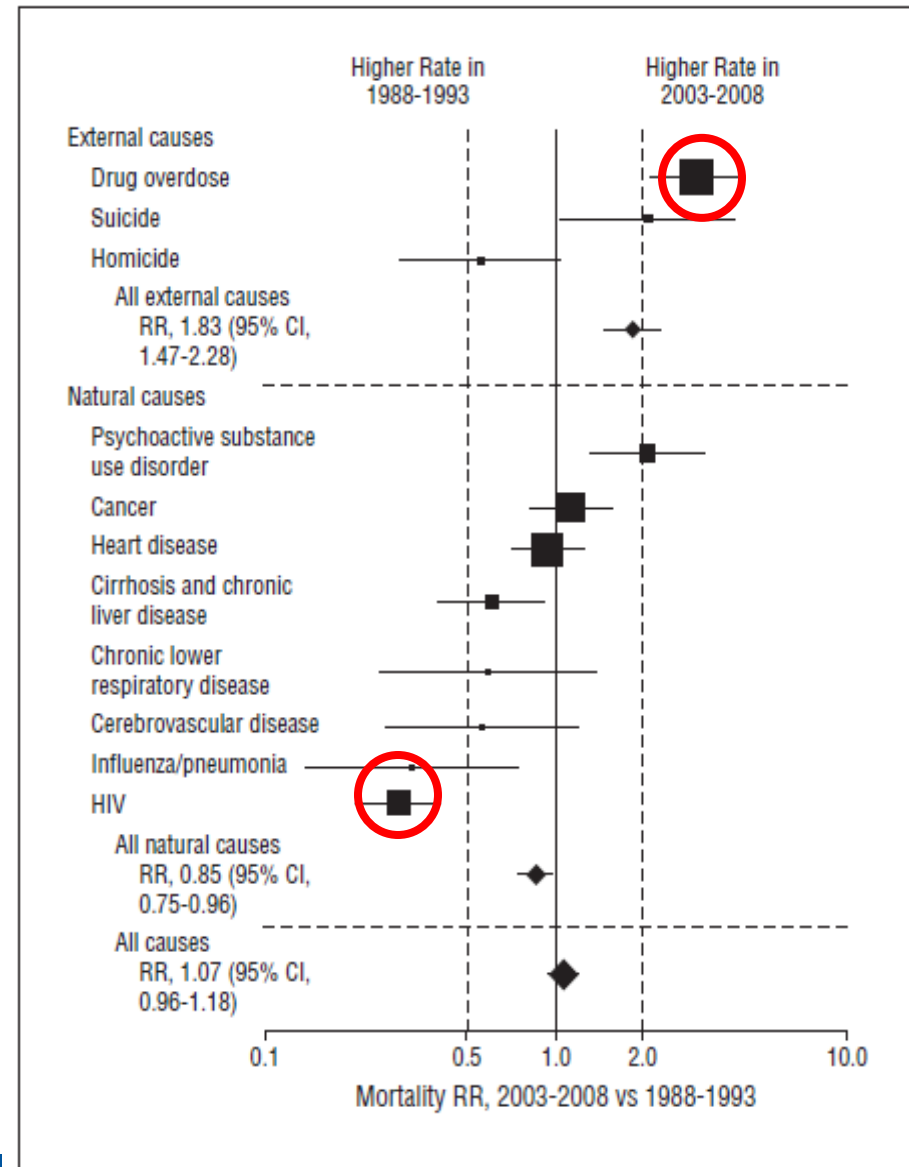
BHCHP's Mission

To provide or assure access to the highest quality health care for all homeless men, women and children in the greater Boston area

ORIGIN OF SPOT

- Drug overdose was leading cause of death for cohort of 28,033 adults seen at BHCHP from 2003 to 2008*
- Opioids implicated in 81% of overdose deaths*
- Overdoses frequently happening in our building
- We were not effectively engaging some high risk people with SUD, despite significant existing addictions programming

*Baggett TP, et al. Mortality among homeless adults in Boston: shifts in causes of death over a 15-year period. JAMA Internal Medicine 2013; 173(3): 189-195.



OBJECTIVE

Implement a harm reduction program within a health care setting, in order to:

1. Prevent fatal overdose
2. More effectively connect highest-risk individuals with treatment
3. Tackle stigma



Photo: Boston Globe

PROGRAM CONCEPT



Services Offered

- Medical monitoring
- Treatment of overdose (oxygen, IV fluids, naloxone)
- Counseling about safer injection techniques
- Connection to primary care, behavioral health services, and addictions treatment
- Naloxone rescue kit distribution

Staffing Model

- Registered nurse specializing in addiction
- Harm reduction specialist builds relationships and links people to treatment
- Peers who are in recovery offer support
- Rapid response clinician (MD/NP/PA) available for emergency

CONSUMER INVOLVEMENT

- Participation in weekly planning meetings
- Perspectives sought in survey conducted at needle exchange program before opening
- Interviewed harm reduction applicants
- Presence in the room
- Patient experience survey



SUPPORTIVE PLACE FOR OBSERVATION AND TREATMENT



SPOT RESEARCH ROADMAP

1. Environment



1A. Consumer willingness to use harm reduction program

✓ Before opening SPOT, 91% of injection drug users reported willingness to use harm reduction programs, and those most likely to use such spaces were among those at highest risk of overdose.¹

1B. Community perceptions of SPOT

✓ Significant increases in community knowledge about drugs, favorable attitudes towards harm reduction, and favorable attitudes towards our intervention following the opening of SPOT.²

1C. Evaluating public order, pre- and post-SPOT (first 12 weeks)

✓ SPOT was associated with a significant decrease in observed overdosed individuals; injection-drug related public order (e.g., publicly discarded syringes, injection-related litter) did not worsen.³

1. León, C., Cardoso, L., Mackin, S., Bock, B., & Gaeta, J. M. (2017). The willingness of people who inject drugs in Boston to use a supervised injection facility. *Substance abuse*, 1-7.

2. Cardoso, L. J., León, C., Bock, B., & Gaeta, J. Changes in community attitudes about substance use and harm reduction approaches after the opening of a new medical monitoring facility (in development).

3. León, C., Cardoso, L. J., Johnston, S., Mackin, S., Bock, B., & Gaeta, J. M. (2018). Changes in public order after the opening of an overdose monitoring facility for people who inject drugs. *International Journal of Drug Policy*, 53, 90-95.

SPOT RESEARCH ROADMAP

1. Environment

2. Participant Population

✓ 1A. Consumer willingness to use harm reduction program

✓ 1B. Community perceptions of SPOT

✓ 1C. Evaluating public order, pre- and post-SPOT (first 12 weeks)

✓ 2A. Internal dashboard / population profile

SPOT Stats, April 2016-2018

7,139	Total visits
839	De-duplicated visitors
34%	Participants who identify as women
47	Naloxone administrations
488	Oxygen administrations
987	ED avoidances (nurse-reported)
24%	Direct referrals to addiction treatment
22%	Direct connections to medical/BH care

WHAT WE'RE LEARNING

- Cohort using program is extremely high risk
- Nature of relationship with participants is quite different than in our primary care setting
- Substance use is layered with “cocktail”
 - Opioid
 - Benzodiazepine
 - Clonidine
 - Gabapentin
 - Promethazine



SPOT RESEARCH ROADMAP

1. Environment

2. Participant Population

✓ 1A. Consumer willingness to use harm reduction program

✓ 2A. Internal dashboard / population profile

✓ 1B. Community perceptions of SPOT

2B. Polysubstance overdose syndrome (case series)

✓ 1C. Evaluating public order, pre- and post-SPOT (first 12 weeks)

2C. Participant substance use patterns, acute & chronic health issues

POLYSUBSTANCE OVERDOSE SYNDROME

Vital signs monitoring in SPOT often shows bradycardia and hypotension, in addition to sedation and respiratory depression, thought to be a result of polysubstance use.



POLYSUBSTANCE OVERDOSE SYNDROME

Aim

Use a retrospective case series with anonymized data of SPOT users to develop an understanding of key clinical characteristics of “polysubstance overdose syndrome.”

Hypothesis

Individuals who have ingested the most common drug “cocktail” experience severe bradycardia and hypotension that differs from the classic presentation of opioid overdose.

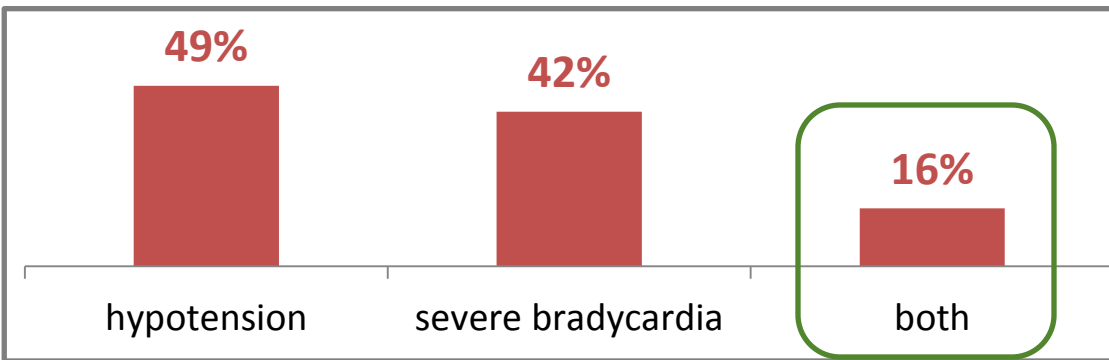
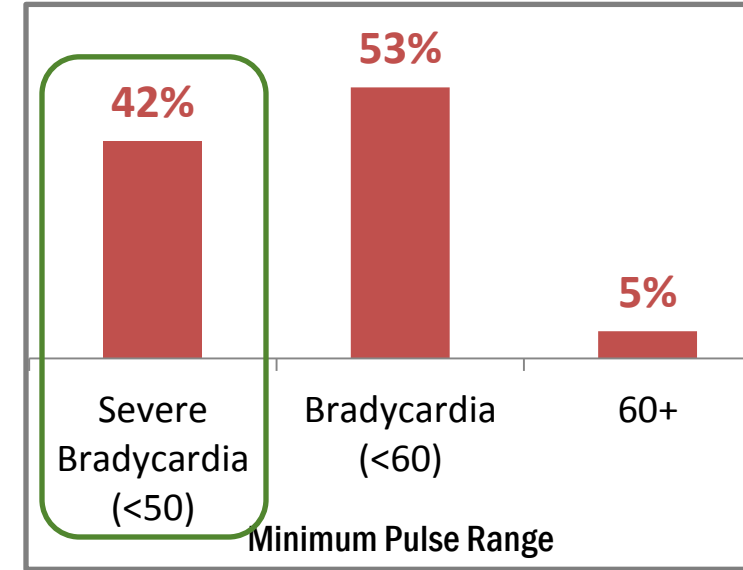
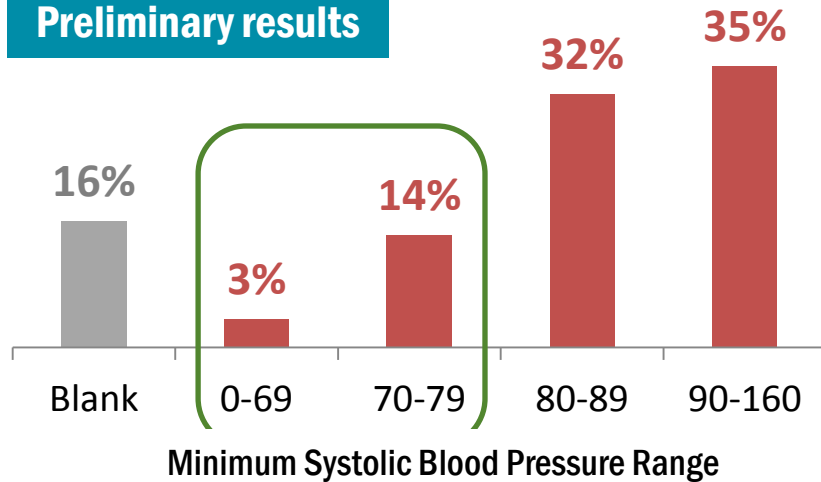
Sample

57 SPOT visitors, aged 18-64, who visited SPOT during a recent 6-month period, and experienced either systolic BP <90, or pulse <60, or both; and had at least one sedation level documented at greater than or equal to S4 (sleeping, but arousable) on Inova Sedation Scale

***Currently expanding study period from 6 to 12 months to enlarge sample of 57 participants*

POLYSUBSTANCE OVERDOSE SYNDROME

Preliminary results



**Reminder: eligibility criteria intentionally sought pts w/ pulse <60 or systolic BP <90 for at least 1 recording*

POLYSUBSTANCE OVERDOSE SYNDROME

Preliminary Results

Among these oversedated individuals, there were very high rates of mixed substance use, with over half of participants using all 5 “cocktail” elements.

opioid	benzodiazepine	clonidine	gabapentin	promethazine	%
Y	Y	Y	Y	Y	53%
Y	Y	Y	UC	UC	12%
Y	Y	Y	UC	Y	11%
Y	Y	UC	UC	UC	7%
Y	UC	UC	UC	UC	7%
Y	UC	Y	Y	Y	4%
Y	UC	UC	UC	Y	2%
Y	UC	Y	Y	UC	2%
Y	Y	Y	Y	UC	2%
Y	UC	Y	UC	Y	2%
Y	UC	Y	UC	UC	0%
Y	Y	UC	UC	Y	0%
Y	UC	UC	Y	UC	0%
Y	UC	UC	Y	Y	0%
Y	Y	UC	Y	UC	0%
Y	Y	UC	Y	Y	0%
					100%

UC=Unconfirmed

SPOT RESEARCH CHALLENGES

- Not insignificant issues around gaining consent
 - Desire to maintain trusting relationships with participants
 - Participants' engagement in illicit behavior
 - Sedation and its impact on ability to give consent
- Need to prevent research from being viewed as encouraging participants to use again
- At SPOT, beginning data collection at unknown time point in symptom progression
- Difficult to follow participants over time given the instability in their lives

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2. Participant Population

✓ 2A. Internal dashboard / population profile

2B. Polysubstance overdose syndrome (case series)

2C. Participant substance use patterns, acute & chronic health issues

3. Impact

3A. Impact of SPOT on OD rates & ED utilization

3B. Impact of SPOT on SUD treatment initiation & engagement

3C. Changes in SPOT user risk behavior over time (cohort study)

- Disproportionate effect of overdose deaths among homeless population
- Harm reduction services play a crucial and complementary role in SUD treatment continuum
- Trusting relationships with people who inject drugs
 - Offer promise of discovering or tailoring interventions that have high impact
 - Yet also present challenges with conducting formal research

With Thanks

SPOT Clinical Team

Led by Kate Orlin & Courtney Kenney

BHCHP Leadership

Barry Bock, CEO

James O'Connell, President

AHOPE

of Boston Public Health Commission

Led by Sarah Mackin

BHCHP's Institute for Research, Quality, and Policy in Homeless Health Care

Travis Baggett, Director of Research
Casey K. León, former Institute Director

Gabriel Wishik, MD

Melanie Racine, Project Manager

Lena Cardoso, Research Associate

Salem Johnston, Analyst

Contact:

Jessie M. Gaeta, MD

Chief Medical Officer, Boston Health Care for the Homeless Program

780 Albany St. Boston, MA 02118

Assistant Professor, Boston University School of Medicine

jgaeta@bhchp.org



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