Supportive Place for Observation and Treatment (SPOT)

Photo Credit: AthenaHealth

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BHCHP's Main Practice

■ Chris (far left) shot heroin behind a house in Boston as his friend Shaun watched; they had just spent the night in a homeless shelter.

■ Sherry (above), a homeless woman who said she has been on and off drugs, leaned against a street sign outside the Cumberland Farms store at the corner of Mass. Ave. and Albany Street.

■ At left, Leonardo, wearing a Batman mask, walked along Mass. Ave. "I want to be able to work here," he said. "I'm not asking for a free check . . . I'm asking for a job and a place to live and to be part of society here."

LIFE AND LOSS ON METHADONE MILE

▶METHADONE MILE
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many clinics and services here try to steel themselves against the streets outside. On the mornings when she must brave the chaos, Alyssa Bowman swallows her 80 milligrams of methadone and walks to work quickly, eyes on the ground and earphones stuffed in her ears.

Like many of the others who populate this place, Bowman, 35, is passing through on her way to somewhere else: A life with her children, a return to her career as a dental assistant.

Clean at 23 thanks to daily methadone treatments, she relapsed about a year ago with a seven-month binge of alcohol and benzodiazepines, a type of tranquilizer, that destroyed her life and her liver. By March, she was living in a nearby halfway house where the other women called her "mom," and brought her their broken necklaces and eyeglasses to fix. She collects heads-up pennies for luck and gives them to women having rough days on the road to recovery. Now, she lives in her own apartment; she walks through Methadone Mile some days on her way to her job doing merchandising and marketing for a retail service company.

The sing-song offers of pills and dope make her stomach turn.

"That road," she said, "leads to nothing."

But these streets were paved with suffering long before today's drug epidemic earned much notice. And in the wake of the closing of the Long Island Shelter, the chronically homeless mingle with a new generation caught in addiction's grip, parading this most confounding of problems out before an audience at a busy Boston intersection.

Even as a rising death toll stokes compassion and newfound resolve, gaping holes remain in the systems set up to combat the crisis — nowhere more visible than here. As more and more people stumble along the sidewalks of Methadone Mile each morning, those holes seem harder than ever to patch.

Recovery and relapse jockey for space in the same few blocks. A constellation of services for those suffering from homelessness, mental illness, and drug and alcohol addictions line the streets near Boston Medical Center, compressed into one of the only corners of the city where such facilities can exist without uproar from nervous neighbors.

The Woods-Mullen and Southampton Street shelters, for women and men respectively, house hundreds every night, a few blocks apart. The headquarters of Boston Health Care for the Homeless, a 30-year-old program dedicated to the city's most vulnerable patients, occupies part of the building next to Woods-Mullen. The same building is home to several Boston Public Health programs — among them one that distributes clean needles and another, PAATHS, that helps coordinate services for people making their way through a thicket of acute, residential, and outpatient care for drug addiction. In the middle of it all is Boston Medical Center.

In the battle against substance abuse, these are the front lines. For some, access to so many services in such close quarters is a boon. People who live in one of the shelters can make it to therapy groups, see their primary care doctors at BMC, and visit a recovery center without commuting all over the city. And service providers here, many say, show their patients a respect they rarely find elsewhere.

Jennifer Tracey, head of the city's Office of Recovery Services, says there is "probably nowhere else in New England if not the country where you find . . . the level of services that you're finding here."

But the challenges of the area are obvious. Despite a heavy police presence, low-level dealers work the streets, harassing and baiting those clinging to sobriety, and selling to those who have lost their grip.

By dawn, people are already beating a path toward the methadone clinics. Dozens make their way down Southampton to the clinic on Topeka Street, a shabby one-block roadway flanked by industrial businesses and a fenced, inactive construction site that signs warn is an environmental hazard. People sleep there anyway, bedding down behind a concrete structure that's either half-built or half-demolished.

Couples walk by holding hands. Women push strollers. Yesterday's panhandling signs sit discarded along the chain-link fence. A billboard rises over the run-down gas station on the corner, where Michael McCarthy and Rachelle Bond, charged in the killing last summer of Bond's daughter Bella, used to sit in the dirt. The billboard faces the other way; the side overlooking Topeka Street is blank.

Some drive to the two methadone clinics here and duck inside for a few minutes to take their dose before driving away. Others walk in and out quickly, dressed in the uniforms they'll wear at the jobs they're bound for. But many — those with nowhere else to be — linger outside, crouching on the dusty roadside.

Methadone, an opioid that wards off withdrawal symptoms while blocking the chemical craving associated with heroin, is one of the most effective treatments against opioid addiction, along with suboxone, a similar drug that can be taken at home. That's why this area's derisive nickname infuriates many who have spent years working in the treatment programs here: It stigmatizes the people whose pain and suffering is very public and mocks their efforts to get clean. They wish it were known instead as Recovery Road.

But methadone itself can be extremely addictive, and some take it indefinitely for years, trading one addiction for another that allows them to go to work and lead less fractured lives. Others, still active drug users, take it to ward off withdrawal symptoms for the days or hours until they cobble together enough money to buy heroin from one of the dealers on Massachusetts Avenue.

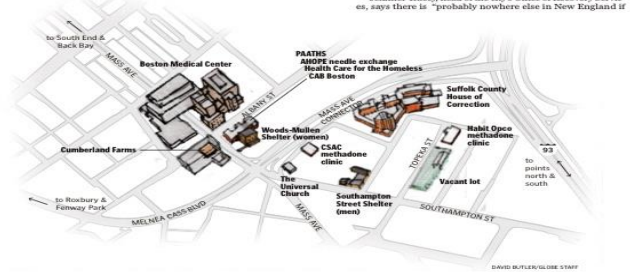
Even the combination of pills the dealers sell in their looping cadence — a specially tailored mix of seemingly random medications called "the cocktail" — is designed to intensify heroin's potency or amplify the pain-relieving effects of methadone into a powerful high.

Users swallow a benzodiazepine like Klonopin or Xanax, the blood pressure medication Clonidine, and the seizure medication Neurontin or Gabapentin. An antinausea drug, Phenergan, completes the blend.

Then they drift away. The people piling the pills on top of their methadone doses are easy to spot: Some, overcome, stoop so low that their hair and hands scrape the sidewalk.

One woman, a regular on the sidewalks and under the bridges here who studied toward a master's degree in health education before her life fell apart, likened the layering of pills atop an opioid to Maslow's hierarchy of needs, the theory in psychology that basic physical needs must first be met before a person can seek safety, love, or esteem.

In the cocktail — and for many on the Mile — opioids come first.



DAVID BUTLER/GLOBE STAFF

Shaun stands shivering in front of the Cumberland Farms store on Mass. Ave. and does the math: A week, maybe more, before he can get on suboxone after being kicked out of his methadone clinic. Two hours before he'll be dopesick. Less than $20 needed to buy a quarter-gram of heroin.

His stomach is cramping. He is nauseated, and he is anxious: Soon, the diarrhea and vomiting will start, and pain so complete he'll be able to feel it in his hair.

The tall and skinny 45-year-old from Lynn has been clean for several months, he says, and so has his wife, Donna. Among his prison tattoos, he has her name inked across his chest and her initials on his wrist. They always promised each other: We'll quit this together. For years, they said, they have lived in shelters, rooming houses, and on the streets; using, detoxing, relapsing, getting arrested — always together.

Now, in early May, Donna is living in a halfway house, looking for a job. He is staying in a homeless shelter, and wakes up at night reaching for her. He walks her down Southampton Street every morning so she can get her methadone without succumbing to the temptation of the dealers she passes on the way.

He's too old to go through withdrawal, he says. He doesn't have it in him anymore. He decides: He'll use heroin, just for a week. Then, suboxone.

Shaun, who goes by the nickname "BonZ" (pronounced Bone-zee), panhandles $17, and vanishes into the stir of people in front of Cumberland Farms, looking for his dealer. He emerges moments later, smiling.

"It's as easy as that," he says.

Like many others here, Shaun's addiction predates the current opioid crisis. For him, heroin serves as a refuge from a lifetime of traumas — some self-inflicted. Even with the wealth of treatment options he is surrounded by every day, a remedy has been elusive, the damage that deep. Court papers document a tumultuous childhood, hospitalizations for mental health issues, and repeated arrests. He started drinking at 8, the documents show, and by 13 he was smoking angel dust, snorting cocaine, and using LSD; he started using Oxycontin in the late '90s, he said, before switching to heroin. He served time for a failed robbery at a McDonald's. His brother died of an overdose in 2012.

"I love heroin. I live it. The first time I ever did it I fell in love with it," he says. "But you hate it. You want to kill it. But you can't. It always wins. It's the biggest lie."

He lopes over to a low orange box of a building at the edge of Mass. Ave., The Universal Church, and squats down on blacktop wet with rain. He opens a water bottle, takes out a clean syringe, and squeezes a few drops of water into the upturned bottle cap on his knee. Then he unwraps the folded Keno ticket that holds his heroin.

It is too windy to cook, so he stirs it up in the bottle cap and draws the amber liquid up into the syringe through a makeshift filter, a cotton pad he found discarded on the ground. He rolls up his sleeve, revealing dark blue veins he calls "ropes," and plunges the needle in, waiting for the eddy of blood called the "red flag" that means it is safe to inject.

The red swirl beckons, and he presses the plunger.

His shoulders relax, no longer sharp points under his jacket. He is not thinking about the hours and days that will follow this one perfect moment of relief: That his plan to use just once every day will fail by the afternoon; that he will begin missing his morning walks with Donna to panhandle for more dope; that he will spend two days trying to raise enough money to take her to see "Captain America: Civil War," only to spend it on heroin instead; that he will fail to get into a suboxone clinic, try detox, then return to the streets and to heroin, then detox again. In this moment, there is only the pain leaving his body.

In many ways, the center of this teeming neighborhood — the hub of the Mile — is not a shelter or a clinic. It's a convenience store.

The Cumberland Farms on the corner of Massachusetts Avenue and Albany Street was the company's first foray into an "urban location" in Boston since 1981, and a month-long fund-raiser for Boston Medical Center accompanied the store's opening in November 2013 — a nod to their new neighbors.

"With our brand new look and store concept, we felt the timing was right for us to provide this vibrant neighborhood with a convenient, affordable option for freshly prepared food and our everyday convenience items," Cumberland Farms president Ari Hasecotes said in a news release at the time.

The firm couldn't have known what was coming. Less than a year after the store opened, in October 2014, the condemnation of the bridge to Long Island shuttered the shelter there and tossed the city's already overburdened support systems into chaos. It also resettled hundreds of Boston's homeless here.

Almost overnight, the number of homeless, drug- and alcohol-dependent people crowding around Cumby's appeared to double. Shoving matches block the doorway. People mill around inside indefinitely, buying nothing. The bathrooms stay locked, to keep people from shooting up heroin inside. One night, a pair of men's dress shoes sat abandoned in front of the register; a woman with a black eye and a metal bar slid through the belt loops of her jeans added packet after packet of sugar to a yogurt she brought from outside.

Many of the people out front are simply having a cup of coffee with their friends outside the local shop — they're living in the shelters and spend their days outside, said Tracey, whom Mayor Martin J. Walsh appointed in 2015 to head the city office charged with addressing substance abuse. But others are nodding off on their feet, conked out by the cocktail.

"It's scary for people to see people that sick and unaware," Tracey said.

Service providers in the area meet with police and neighborhood and business groups regularly, addressing problems as they arise — harassment outside methadone clinics, or parked cars being used as cover for injection drug use. But the daily responsibility for reining in the chaos often falls to the Boston Police Department.

"Gotta go, gotta go," say the police officers who show up every hour or so to sweep away the restive crowd, pointing the

Continued on next page

■ A police officer and a security guard chased an alleged drug dealer after he ran away during questioning; at right, police handcuffed the suspect as the guard stood by.

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

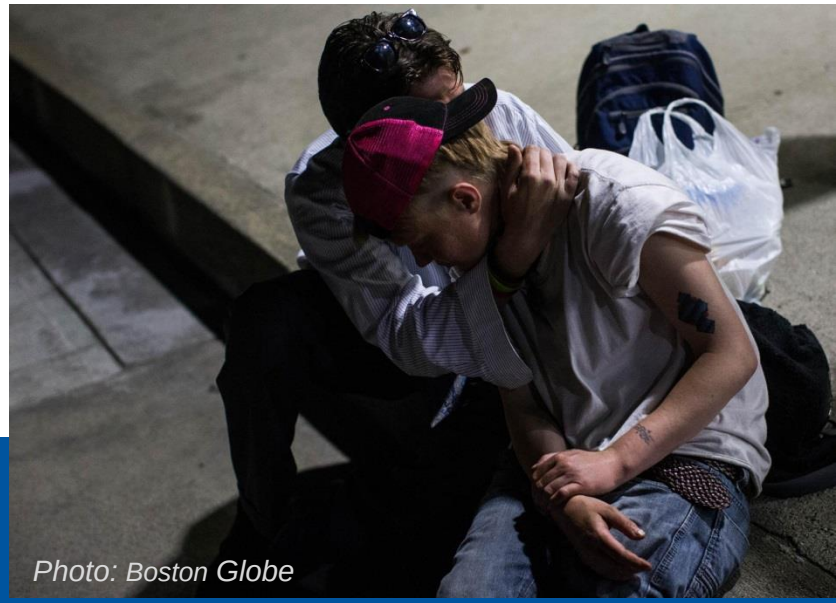


Photo: Boston Globe

PROGRAM CONCEPT

Services Offered

- Medical monitoring during sedation
- 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
- Rapid response clinician (MD/NP/PA) available for emergency

CONSUMER INVOLVEMENT

- Participated in weekly planning meetings
- Perspectives sought in survey conducted at syringe exchange program before opening
- Interviewed harm reduction applicants
- Patient experience survey

SPOT

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 over-sedated 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
666	De-duplicated visitors
34%	Participants who identify as women
47	Naloxone administrations
488	Oxygen administrations
987	ED avoidances (nurse-reported)
22%	Direct referrals to addiction treatment
20%	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 other clinical settings
- Substance use is layered with "cocktail"
  - Opioid
  - Benzodiazepine
  - Clonidine
  - Gabapentin
  - Promethazine
- **Participants reluctant to seek health care services elsewhere because of stigma**

SPOT RESEARCH ROADMAP

1. Environment

- ✓ 1A. Consumer willingness to use harm reduction program
- ✓ 1B. Community perceptions of SPOT
- ✓ 1C. Evaluating public order, pre- and post-SPOT (first 12 weeks)

2. Participant Population

- ✓ 2A. Internal dashboard / population profile
- 2B. Polysubstance overdose syndrome (cluster analysis)
- 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

Table 1. Characteristics of intoxication clusters

	Cluster A: Mild (N=81 episodes)	**Cluster B: Moderate** (N=136 episodes)	**Cluster C: Severe** (N=88 episodes)
Sedation level (0-6), mean (SD)	3.6 (0.8)	4.5 (0.6)	4.5 (0.5)
Sedation level ≥5, N (%)	2 (2.5)	70 (51.5)	41 (46.6)
Systolic blood pressure nadir (mm Hg), mean (SD)	113.5 (13.3)	94.5 (13.6)	89.2 (12.8)
Systolic blood pressure nadir <90mm Hg, N (%)	4 (4.9)	54 (39.7)	43 (48.9)
Pulse nadir (beats/min), mean (SD)	80.2 (18.0)	57.3 (11.1)	59.2 (11.9)
Pulse nadir <60 beats/min, N (%)	10 (12.4)	83 (61.0)	53 (60.2)
Respiratory rate nadir (breaths/min), mean (SD)	13.5 (1.9)	11.7 (0.9)	11.7 (0.8)
Respiratory rate <12 breaths/min, N (%)	3 (3.7)	18 (13.2)	14 (15.9)
Oxygen saturation nadir (%), mean (SD)	95.8 (2.2)	95.4 (1.5)	91.1 (1.7)
Oxygen saturation <95%, N (%)	21 (25.9)	41 (30.2)	88 (100)

Qualitative description of clusters:
Cluster A: mild sedation with stable vital signs
Cluster B: moderate sedation with non-hypoxic vital sign abnormalities
Cluster C: moderate sedation with hypoxia and other vital sign abnormalities

POLYSUBSTANCE OVERDOSE SYNDROME

Table 2. Demographic and self-reported substance ingestion characteristics overall and by intoxication cluster

	Overall (N=305 episodes)	**Cluster A: Mild** (N=81 episodes)	**Cluster B: Moderate** (N=136 episodes)	**P value** (B vs A)	**Cluster C: Severe** (N=88 episodes)	**P value** (C vs A)
Demographics						
Age (years), mean (SD)	39.0 (9.4)	38.0 (10.0)	37.5 (8.8)	0.77	42.3 (9.0)	0.04
Female, N (%)	137 (44.9)	29 (35.8)	59 (43.4)	0.38	49 (55.7)	0.07
Substance ingestions						
Opioids, N (%)	219 (71.8)	66 (81.5)	96 (70.6)	0.10	57 (64.8)	0.02
Sedating medications, N (%)						
Benzodiazepines	172 (56.4)	29 (35.8)	83 (61.0)	0.001	60 (68.2)	<0.001
Clonidine	165 (54.1)	24 (29.6)	86 (63.2)	<0.001	55 (62.5)	0.002
Promethazine	114 (37.4)	16 (19.8)	64 (47.1)	<0.001	34 (38.6)	0.03
Gabapentin	112 (36.7)	16 (19.8)	61 (44.9)	<0.001	35 (39.8)	0.03
Any of above	193 (63.3)	34 (42.0)	92 (67.7)	0.001	67 (76.1)	<0.001
Stimulants, N (%)						
Cocaine/crack	18 (5.9)	8 (9.9)	6 (4.4)	0.15	4 (4.6)	0.20
Methamphetamine	5 (1.6)	2 (2.5)	2 (1.5)	0.60	1 (1.1)	0.52
Any of above	23 (7.5)	10 (12.4)	8 (5.9)	0.11	5 (5.7)	0.14
Cannabinoids, N (%)						
Marijuana	3 (1.0)	1 (1.2)	2 (1.5)	0.89	0 (0)	--
Synthetic cannabinoids	17 (5.6)	6 (7.4)	10 (7.4)	0.99	1 (1.1)	0.10
Any of above	20 (6.6)	7 (8.6)	12 (8.8)	0.97	1 (1.1)	0.07
Alcohol, N (%)	11 (3.6)	5 (6.2)	3 (2.2)	0.23	3 (3.4)	0.41

Qualitative summary: Cluster B and C patients were more likely to have ingested sedating medications. Cluster C patients were slightly older, marginally more likely to be female, less likely to have ingested opioids, and marginally less likely to have ingested cannabinoids.

POLYSUBSTANCE OVERDOSE SYNDROME

Table 3. Multivariable associations with intoxication cluster membership.

	Adjusted OR (95% CI) Cluster B vs A	Adjusted OR (95% CI) Cluster C vs A
Demographics		
Age, per 10 years	0.93 (0.64, 1.36)	**1.54 (1.00, 2.35)**
Female	1.44 (0.71, 2.92)	**2.51 (1.03, 6.10)**
Substance ingestions		
Opioids	0.65 (0.27, 1.61)	0.53 (0.23, 1.25)
Sedating medications	**2.75 (1.40, 5.40)**	**3.38 (1.48, 7.70)**
Stimulants	0.57 (0.22, 1.47)	0.64 (0.20, 2.02)
Cannabinoids	1.29 (0.41, 4.01)	0.24 (0.03, 2.10)
Alcohol	0.28 (0.06, 1.44)	0.37 (0.09, 1.54)

Qualitative summary: In multivariable models, ingestion of sedating medications was the strongest predictor of intoxication syndrome severity. Older age and female sex were associated with higher odds of severe (cluster C) intoxication syndromes.

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

SPOT RESEARCH ROADMAP

1. Environment	2. Participant Population	3. Impact
✓ 1A. Consumer willingness to use harm reduction program	✓ 2A. Internal dashboard / population profile	3A. Impact of SPOT on OD rates & ED utilization
✓ 1B. Community perceptions of SPOT	2B. Polysubstance overdose syndrome (case series)	3B. Impact of SPOT on SUD treatment initiation & engagement
✓ 1C. Evaluating public order, pre- and post-SPOT (first 12 weeks)	2C. Participant substance use patterns, acute & chronic health issues	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
- SPOT doesn't go far enough – unable to prevent fatal OD at point of injection

What do we see?

Image courtesy Boston Globe

With Thanks

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