

# Innovative Approaches for Addressing Opioid Overdose and Opioid Use Disorder in Emergency Departments and other Hospital Settings

## Boston Medical Center

### Overview

On August 1, 2016, [Boston Medical Center \(BMC\)](#), in collaboration with the [Massachusetts Department of Public Health \(DPH\)](#) and the [Boston Public Health Commission \(BPHC\)](#), launched [Faster Paths to Treatment \(Faster Paths\)](#), a new opioid urgent care center to give patients with SUD rapid access to a full continuum of treatment services.

Housed in BMC's Yawkey Ambulatory Care Center and funded by a four-year, \$2.9 million grant from DPH, the program expanded access to medical, and mental health treatment for patients with SUDs, with an emphasis on opioid use disorder. Faster Paths serves to improve coordination across BMC programs and departments, capture economies of scale, increase resources, and improve collaboration with community and agency partners and the BPHC. A partnership between BMC's Department of Emergency Medicine and General Internal Medicine Section, Faster Paths bridges several long-standing innovative initiatives, including BMC's Project ASSERT (*Alcohol & Substance Abuse Services, Education, and Referral to Treatment*); OBAT (*Office Based Addiction Treatment*); the inpatient addiction consult service (ACS); and BPHC's PAATHS (*Providing Access to Addictions Treatment, Hope and Support*) program. Each of these has become a program node of Faster Paths. Faster Paths is now a core clinical program of BMC's Grayken Center for Addiction, which was established in 2017 to oversee and coordinate all of the addiction prevention, treatment, training, research and related initiatives and activities BMC has developed over the past 25 years.

### Approach

Faster Paths rapidly evaluates, motivates, and refers patients with SUDs to a comprehensive network of inpatient and outpatient SUD treatment services integrated with mental health and medical care. It also provides same-day access to [medication-assisted treatment \(MAT\) for SUD](#) Monday through Saturday from 8 a.m. to 4:30 p.m. at an on-site low barrier induction and stabilization clinic. Project ASSERT's nine licensed alcohol and drug counselors (LADCs), four of whom have a master's degree, staff the Faster Paths from 8:00 a.m. to midnight seven days per week. They conduct triage, intake assessment, initial level of care determination using [American Society of Addiction Medicine \(ASAM\) Co-Triage™](#) and offer addiction counseling services and referrals. Clinic staff also includes five addiction medicine physicians who are waived to prescribe buprenorphine for the treatment of OUD. They prescribe oral and injectable naltrexone and buprenorphine, overseeing

**Faster Paths rapidly evaluates, motivates, and refers patients with SUDs to a comprehensive network of services and provides same-day access to MAT.**

induction and stabilization. They are supported by an addiction nurse specialist, care manager, and an addiction psychiatry fellow who sees patients twice-weekly.

Located on the ground floor near BMC's emergency services, Faster Paths incorporates and builds upon the existing addiction services provided by BMC and BPHC, filling the gaps in care to create a continuum across agencies and treatment modalities for individuals being treated for SUD. Faster Paths is a portal to essential medical, public health and addiction treatment services, including overdose prevention and naloxone administration training, [syringe services programs](#), opioid treatment programs, office-based-addiction treatment, inpatient medically-managed withdrawal, inpatient transitional and clinical stabilization, and long-term residential programs. Patients' initial engagement is with a Project ASSERT LADC, who conducts the intake and initial assessment. Patients interested in MAT then are evaluated by the addiction nurse care manager and addiction medicine specialist who gather a history, conduct a physical exam, screen for infections related to substance use, and, as indicated, prescribe buprenorphine, extended-release injectable naltrexone, naloxone, or other medications. The induction and stabilization clinic staff collaborates with BMC pharmacy technicians, who work with insurance gatekeepers and pharmacies to ensure access to frequently prescribed medications. The addiction nurse care manager monitors buprenorphine/naloxone induction, administers injectable extended-release naltrexone, and arranges for the transfer of stable patients to MAT in a BMC-affiliated or community setting. The BMC hospital based internal OBAT programs include Psychiatry, Family Medicine, Infectious Disease and Primary Care/OBAT, the CATALYST program for adolescents and young adults and Project RESPECT for pregnant women with SUD. Faster Paths staff leverages a network of providers and transportation services to facilitate direct access to treatment and community support services in a variety of locations. Acupuncture treatments for stress reduction are offered twice weekly to Faster Paths patients by the BMC Family Medicine's Holistic Medicine-Integrative Health Program.

*Faster Paths to Treatment's* LADCs and BPHC's PAATHS' Recovery Specialists engage patients with complex problems requiring greater support following assessment. These trained peer professionals motivate patients to stay safe and healthy and help them access SUD care, housing, transitional assistance, transportation, food and clothing, mental health services, and primary care and provide information on AA/NA and other support group meeting times and places..

Program directors meet regularly and maintain telephone contact, using EMR data and the continuous process improvement to identify and address problems and improve access and retention. Case conferences and educational sessions involving multiple programs that have become Faster Paths program partners occur regularly.

While the goal for the induction and stabilization clinic is to transition patients to community addiction care over a 2-4 week period, there is no limit on the length of time patients may receive services through Faster Paths. LADCs work not only with patients seeking or open to treatment, but with those who decline it. Motivational Interviewing techniques help identify and prioritize patient goals and perspectives, ensuring that patients have a voice and choice in their care. This allows the team to be an ally to those needing help, even when they are not seeking it. The door to treatment through Faster Paths is always open.

Grant support from the [Massachusetts Department of Public Health, Bureau of Substance Addiction Services](#) (MDPH BSAS) was essential to the startup and development of Faster Paths. From July 1, 2017 through June 30, 2018, the Faster Paths team served 2,173 unique patients with SUD across 6,071 patient visits, placing 1,656 in detox/acute treatment services and initiating buprenorphine for 426 patients with OUD. Of these, 57 percent (243) received ongoing treatment at BMC hospital-based OBAT clinics, affiliated community health centers, or community MAT programs. An additional 45 patients received Intramuscular injection of [extended-release or tablet-form] naltrexone. Of these, 40% (18) had OUD and 60% (27) had alcohol use disorder (AUD). Staff offered information on mutual aid meetings, such as AA and NA, to 2,191 patients while 329 were placed in overnight shelters and 355 were referred to BPHC/PAATH for an array of outpatient, residential and community support services. During this period, of 421 patients offered naloxone kits by Faster Paths staff, 234 (56 percent) accepted kits and 187 (44 percent) declined them. In many cases, staff has reported that patients refuse kits because they already have one. However, BMC plans to explore this further to determine whether other factors that staff might be able to address lead to patients declining kits. The infrastructure and partnerships BMC developed with grant funding have significantly expanded the menu of treatment options available to our patients. In the year prior to the Faster Paths to Treatment grant (August 1, 2015-July 31, 2016), 1,249 ED visits involved detox placement and none involved MAT initiation or referral.

### *Program Partners*

#### *Project ASSERT:*

Established in 1994, [Project ASSERT \(Alcohol & Substance Use Services, Education, and Referral to Treatment\)](#) fields a team of peer educators who are known as Health Promotion Advocates (HPAs). Project ASSERT HPAs are Massachusetts-Licensed Alcohol and Drug Counselors (LADCs) employed by Boston Medical Center who are integral members of the medical team.

They are recruited from the communities served by BMC's safety net hospital and include individuals in long-term recovery. HPAs bring knowledge of community conditions and neighborhood life (the social determinants of health), and serve as culture brokers, helping patients understand medical language and constructs, and helping medical professionals understand the complexity of patients' lives, priorities and choices. In their daily rounds, HPAs engage patients in respectful, compassionate, and informed conversations about their health and safety, encourage and motivate them to seek help, and advocate for and facilitate access to an array of hospital and community resources and services.

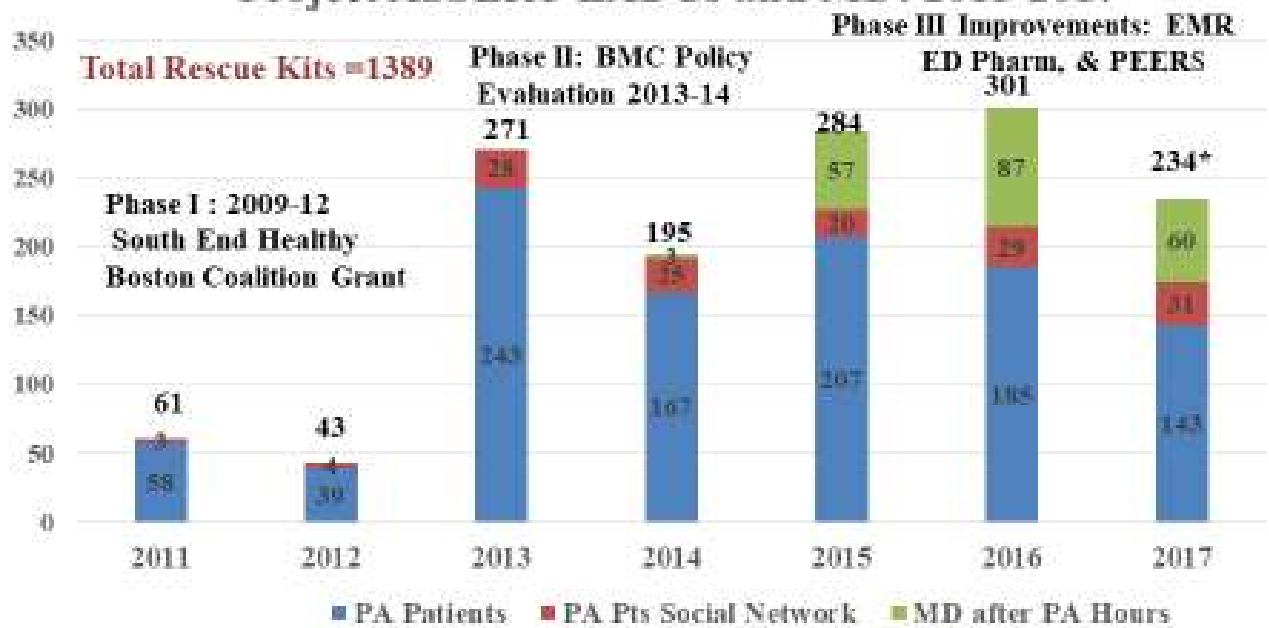
HPAs affirm the dignity of patients and their diverse cultural backgrounds, establishing non-directive and non-judgmental patient relationships based on shared experience.

HPAs perform “in-reach” at the Boston Medical Center Emergency Department, affirming the dignity of patients and their diverse cultural backgrounds, beliefs and values, and establishing non-

directive and non-judgmental patient relationships based on shared experience. The team screens patients, conducts psychosocial assessments and brief interventions, offers patient information and health resources, refers to overnight shelters, food and clothing bank, and AA/NA meetings, and makes SUD treatment placements to a large network of community partners as well as to our BMC hospital's primary care addiction services. HPAs utilize the [Brief Negotiated Interview \(BNI\)](#)<sup>i</sup> in their interactions with patients. Since 2011, they have also trained patients and their social network in the use of naloxone, and distributed it to those they train (See *Figure 9* below). In 2014, physicians began providing this service after 12:00 a.m. and before 8:00 a.m. and when Project ASSERT staff is not available. Currently after the State stopped supplying free naloxone to Project ASSERT, the ED pharmacy and physicians are providing naloxone rescue kits 24/7. By addressing SUDs in the context of other health and safety needs, the team provides patients with the opportunity to explore change through a respectful conversation and facilitates access to a range of SUD treatment and other wrap around services.

## Boston Medical Center E.D. Opioid Education and Naloxone Distribution

### Naloxone Rescue Kit Distribution by Project ASSERT LADCs and MD: 2011-2017



\* 2017 Offered and Refused = 424

*Office Based Addiction Treatment (OBAT) Program*

In 2003, faculty from the BMC Clinical Addiction Research and Education Unit established the BMC Office Based Opioid Treatment (OBOT) program with funding from the Massachusetts Bureau of Substance Addiction Services. At present, the program is the largest hospital-based opioid treatment initiative in New England. After it was expanded to include MAT for alcohol use disorder it was renamed the Office Based Addiction Treatment (OBAT) Program. The OBAT Program is housed in the hospital's primary care clinics and currently serves over 600 patients annually. Additionally, five other clinics in the hospital serving special populations utilize the OBAT model and collectively serve approximately 400 patients annually. These programs include OBAT programs in Psychiatry and Family Medicine, and the Center for Infectious Diseases; Project RESPECT, a program for pregnant women with SUD; and the CATALYST Clinic, a primary care-integrated SUD treatment program for adolescents and young adults. In total, about 1,000 patients are served annually through BMC's OBAT Programs. The BMC OBAT Model utilizes a nationally-recognized, and nationally-replicated, collaborative care model that relies on nurse care managers to ensure delivery of evidence-based addiction treatment while effectively and efficiently utilizing physicians waived to prescribe buprenorphine.

In 2007, the MDPH BSAS funded BMC to provide training and technical assistance to support adoption of the BMC OBAT Collaborative Care Model by 14 community health centers (CHCs) across the state. Within three years, this increased the number of physicians "waivered" to prescribe buprenorphine by 375 percent (from 24 to 114). The number of CHC OBAT admissions increased markedly during this period. Due to the success of this project, BMC developed the OBAT Training and Technical Assistance Program. As of 2018, BMC is providing training and technical assistance on integration of addiction treatment and the BMC OBAT Collaborative Care model to over 70 CHCs and community providers, and hospital based primary care clinics<sup>1</sup> bringing the total served under the state OBAT program to more than 15,000 patients. Error! Bookmark not defined. From 2007 to 2018, the number of sites served by the OBAT TTA Program has grown by over 400%.

**Training and technical assistance BMC provided to 14 community health centers (CHCs) increased the number of physicians approved to prescribe buprenorphine for OUD by 375 percent.**

### ***Inpatient Addiction Consult Service (ACS)***

BMC's ACS builds on the experience gained and infrastructure created through the OBAT program, an initiative through which nurse care managers linked inpatients with OUD to opioid treatment programs, and on the findings of a randomized controlled trial of buprenorphine/naloxone initiation among hospitalized patients with opioid use disorders. Staffed by General Internal Medicine Section faculty, an addiction nurse care manager, an addiction medicine fellow, and resident trainees, the ACS provides expert consultation for hospitalized patients with SUD, focusing on diagnosing SUD, treating withdrawal syndromes, initiating evidence-based addiction treatment, and linking patients to addiction care and public health services upon discharge. In its first 6 months of operation, the ACS completed 337 consults. More than three-quarters (78%) of ACS patients had an opioid use disorder while 37% an alcohol use

disorder. Of 70 inpatients initiated on methadone, 76% were linked to an outpatient clinic. Of 40 inpatients initiated on buprenorphine 49% were linked to an outpatient OBAT clinic.<sup>iv</sup> Prior to establishment of the ACS, patients with OUD or other SUD were offered detoxification during their hospitalization and information about post-discharge treatment, without direct linkage to care. The wait time for patients who took the initiative to follow up on the care recommendation was typically two weeks or more.

### ***Providing Access to Addiction treatment, Hope, and Support (PAATHS)***

The [BPHC PAATHS program is the central intake for the City of Boston's Public Health Commission](#). PAATHS provides onsite intake assessments, referrals and transportation to SUD treatment, overdose prevention education and naloxone, and other harm reduction services. It is available to patients Monday through Friday, from 7:30 am to 6:00 pm and 8:00 am to 3:00 pm on weekends. Recovery specialists work with patients to address barriers to accessing care (e.g., need for medical clearance, laboratory work, medication refills). BPHC-funded programs to which PAATHS refers patients include: the [AHOPE](#) service syringe services program; [Men's Health and Recovery](#), an outpatient counseling program with supportive case management; and, The [Mom's Project](#), an outpatient counseling program with supportive case management for women; [Entre Familia](#), a 6 to 12-month program for Latina women and their families; and, *Transitions*, a short-term transitional residential SUD treatment program.

The Faster Paths program has provided BMC ED, urgent care and hospital patients a smooth transition to PAATHS services through a Qualified Service Organization Agreement (QSOA). Through the same agreement, PAATHS patients have access to Faster Paths MAT clinic and medical evaluation exams and lab testing needed for treatment placement.

### **The Grayken Center for Addiction**

Launched in 2017, the Grayken Center for Addiction at Boston Medical Center serves as the umbrella for all of BMC's work in the addiction prevention, treatment, recovery support, training, consultation and research arenas. Made possible by a \$25 million gift from the Grayken family—the largest donation in BMC's history—the Center is building on BMC's more than 25 years of innovative work in the addiction arena to revolutionize care for substance use disorders by innovating, educating and advocating, and working to empower and improve the lives of people affected by the disease of addiction. Even prior to the launch of the Grayken Center, BMC had become one of the most comprehensive and influential centers for addiction treatment in the country, known for creating replicable care models and training those at the front lines of the opioid crisis sweeping the nation. The Center will permit BMC to expand its work, to advance critical research, and to help more health care organizations and policymakers implement effective policies and programs to respond to OUD and other SUD.

## **Point of Contact**

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## APPENDIX

### Boston Medical Center

#### *Leadership & Key Partners:*

- [Boston Medical Center \(BMC\)](#)
- [Massachusetts Department of Public Health, Bureau of Substance Abuse Services](#) — funder
- [Boston Public Health Commission \(BPHC\)](#)

#### *Components & Services:*

- Triage and initial level of care determination using the American Society of Addiction Medicine (ASAM) Triage Continuum™ Criteria (*formerly known as the ASAM Patient Placement Criteria*)
- Rapid patient evaluation, motivational interventions, and linkage to a comprehensive network of inpatient and outpatient treatment services integrated with mental health and medical care.
- Same-day assessment for medication-assisted treatment (MAT) including buprenorphine/naloxone induction and naltrexone in tablet form and in its extended-release injectable form Monday through Saturday 8:00 a.m. to 4:30 p.m.
- Assessment, counseling and referral to treatment from 8:00 a.m. to midnight, seven days per week.
- Overdose prevention training and naloxone distribution  
Training and technical assistance to support the adoption of the BMC Office-Based Addiction Treatment (OBAT) Collaborative Care Model in over 70 community health centers, community providers and hospital based primary care clinics.
- Training and technical assistance to support the adoption of Faster Paths model that includes BNI/ Project ASSERT Social Support and Treatment Access, and Faster Paths low barrier bridge MAT Clinic.
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#### *External Services & Resources:*



- A comprehensive array of community-based services and supports, including medication, outpatient, transitional and clinical stabilization services, residential treatment, and recovery support services.
- Offsite externally BPHC-funded [PAATHS \(Providing Access to Addiction Treatment Hope and Support\) Program](#) and SUD services that include:
  - The [AHOPE](#) harm reduction and service syringe services program;
  - [Men's Health and Recovery](#), an outpatient counseling program with supportive case management; and,
  - The [Mom's Project](#), an outpatient counseling program with supportive case management for women.
  - [Entre Familia](#), a 6 to 12-month program for Latina women and their families;
  - [Transitions](#), a short-term transitional residential addiction treatment program; and,

***Staffing, Training, and Credentialing:***

- Program Director, Associate Director, Program Manager, Clerical Support staff, five DATA 2000-waivered physicians (four of whom are certified in Addiction Medicine), one addiction nurse specialist, nine licensed alcohol and drug counselors, and one community support recovery specialist.
- Physicians must have DATA 2000 waiver and board certification in Family Medicine, Emergency Medicine, or Internal Medicine.
- Registered nurses receive training in:
  - Educating patients and families on SUDs
  - Providing care in accordance with established treatment protocols and relevant Federal regulations
  - Coordinating care with OBAT physicians and working with pharmacists to manage medication refills
  - Accessing community-based specialty treatment for OBAT patients, operating in an urgent care setting, and addressing insurance issues, such as prior authorization requirements

***Funding:***

- BSAS awarded BMC 4-year \$2.9 million grant supporting the implementation and evaluation of *Faster Paths*; grant covers salaries and benefits for *Faster Paths* administrative and clinical staff
- BMC funded the construction, furnishing and equipping of the Medication for Addiction Treatment Clinic space, IT support and covers the salary and benefits for several physicians and administrators, and funds BMC OBAT programs, Project ASSERT, and the Addiction Consult Service

- BMC bills private insurance and Medicaid for eligible services and costs and BSAS funds treatment for individuals without insurance

### ***Research & Other Data***

- 1,389 Overdose Education and Naloxone rescue kits distributed from January 2011 through December 2017
- From July 2017 through June 2018, Faster Paths provided services for 6,071 patient visits to 2173 unique patients during which 1,656 patients were placed in detox/acute treatment services and among patient with OUD 426 patients were initiated on and prescribed buprenorphine and 18 prescribed naltrexone.
- 375 percent increase in the number of physicians “waivered” to prescribe buprenorphine over three years (from 24 to 114)
- More than 15,000 under the state OBAT program

## References on Naloxone

- Bernstein E. ONDCP Whitehouse Summit on Heroin and Prescription Opioids. Prevention and Intranasal Naloxone Rescue Kits (NNRK) Distribution in the BMC Emergency Department: A City, State and Hospital Collaboration; Whitehouse, Washington, DC 2014. available at <https://www.youtube.com/watch?v=fCYItYO1xTU&list=UUnvdVucpbmuoOePwolxxeCQ>
- Coffin PO, Sullivan SD. Cost-Effectiveness of Distributing Naloxone to Heroin Users for Lay Overdose Reversal. *Ann Intern Med.* 2013;158:1-9.
- Doe-Simkins M, Walley AY, Epstein A, Moyer P. Saved by the nose: bystander-administered intranasal naloxone hydrochloride for opioid overdose. *Am J Public Health.* 2009;99(5):788-791.
- Drainoni ML, Koppelman EA, Feldman JA, Walley AY, Mitchell PM, Ellison J, **Bernstein E.** Why is it so hard to implement change? A qualitative examination of barriers and facilitators to distribution of naloxone for overdose prevention in a safety net environment. *BMC Res Notes.* 2016 Oct 18;9(1):465.
- Dwyer K, Walley AY, Langlois BK, et al. Opioid education and nasal naloxone rescue kits in the emergency department. *West J Emerg Med.* 2015;16(3):381-384
- Ellison J, Walley AY, Feldman JA, Bernstein E, Mitchell PM, Koppelman EA, Drainoni ML. Identifying Patients for Overdose Prevention With ICD-9 Classification in the Emergency Department, Massachusetts, 2013-2014. *Public Health Reports.* 2016 Sep 1;131(5):671-5.
- Kaucher KA, Acquisto NM, Broderick KB. Emergency department naloxone rescue kit dispensing and patient follow-up. *Am J Emerg Med.* 2017.
- Relay Healing NYC accessed at <https://www1.nyc.gov/office-of-the-mayor/news/223-17/first-lady-chirlane-mccray-relay--24-7-hospital-based-support-system-nonfatal>
- Samuels E. Emergency department naloxone distribution: a Rhode Island department of health, recovery community, and emergency department partnership to reduce opioid overdose deaths. *R I Med J (2013).* 2014;97(10):38-39.
- Samuels, E.A., Hoppe, J., Papp, J., Whiteside, L., Raja, A.S., Bernstein, E. "Emergency Department Naloxone Distribution: Key Considerations and Implementation Strategies." <http://www.acep.org/Trauma-Section-Microsite/TIPS-White-Paper-PDF>
- Verdier M, et al, , *American Journal of Emergency Medicine* (2018), <https://doi.org/10.1016/j.ajem.2018.05.044>
- Walley AY, Xuan Z, Hackman HH, et al. Opioid overdose rates and implementation of overdose education and nasal naloxone distribution in Massachusetts: interrupted time series analysis. *BMJ.* 2013;346:f174.

## Additional BMC References

- American Society of Addiction Medicine Co-Triage. Accessed at <https://www.asamcontinuum.org/knowledgebase/what-is-continuum-triage-co-triage/>
- Bernstein E, Bernstein J, Levenson S. "Project ASSERT: An ED-based intervention to increase access to primary care, preventive services and the substance abuse treatment system." *Ann Emerg Med* 1997; 30:181-189.
- Bernstein J, Bernstein E, Tassiopoulos, K, Heeren T, Levenson S, Hingson R. (2005). "Brief Motivational intervention at a clinic visit reduces cocaine and heroin use." *Drug Alc Depend.* 77:49-59. (PMID: 15607841)
- Bernstein E Faster Paths to Treatment: An Opioid Urgent Care Center. Whitehouse EOP ONDCP. Opioid Overdose to Treatment Webinar. December 20, 2016 <https://www.youtube.com/watch?v=16tDtZ7SVTA..>
- Bernstein E Emergency Department Treatment and Follow-Up Strategies For Opioid Use Disorder. CMS Medicaid Innovator Accelerator Program IAP December 13, 2017
- Boston Medical Center Grayken Center on Addiction accessed at <https://www.bmc.org/addiction>
- Boston Public Health Commission PAATHS Program accessed at <http://www.bphc.org/whatwedo/Recovery-Services/paaths-connect-to-services/Pages/paaths.aspx>
- Doran, Kelly M. et al. Opioid Overdose Protocols in the Emergency Department: Are We Asking the Right Questions? *Annals of Emergency Medicine* , Volume 72 , Issue 1 , 12 - 15
- LaBelle, C.T., Choongheon Han, S., Bergeron, A, Samet, J.H. (2016). *Office-Based Opioid Treatment with Buprenorphine (OBOT-B): Statewide Implementation of the Massachusetts Collaborative Care Model in Community Health Centers.* *Journal of Substance Abuse Treatment.* 60: 6-13. (PMID: 26233698)
- Larochelle MR, Bernson D, Land T, Stopka TJ, Wang N, Xuan Z, et al. Medication for Opioid Use Disorder After Nonfatal Opioid Overdose and Association With Mortality: A Cohort Study. *Ann Intern Med.* [Epub ahead of print 19 June 2018] doi: 10.7326/M17-3107
- Liebschutz, J.M. et al. (2014). "Buprenorphine treatment for hospitalized, opioid-dependent patients: a randomized clinical trial." *JAMA Intern Med.* 174(8):1369-76. (PMID: 25090173)
- Shanahan CW, Beers D, Alford DP, Brigandi E, Samet JH. A transitional opioid program to engage hospitalized drug users. *Journal of general internal medicine.* 2010 Aug 1;25(8):803-8.
- Throwbridge P, Weinstein ZM, Kerensky T, Roy P, Regan D, Samet JH., Walley AY. Addiction consultation services - Linking hospitalized patients to outpatient addiction treatment. *J Subst Abuse Treat.* 2017 Aug;79:1-5. PubMed PMID: 28673521.

## Resources:

Center for Disease Control and Prevention. Opioid Overdoses Treated in Emergency Departments: Identify Opportunities for Action Vital Signs – March 2018. accessed at <https://www.cdc.gov/vitalsigns/opioid-overdoses/index.html>; <https://youtu.be/kqEgHQHAMqM>.

The Network for Public Law and Health. Overdose Prevention and Harm Reduction Blog Posts. accessed at <http://overdoseprevention.blogspot.com/p/od-prevention-program-locator.html>

Prescribe To Prevent accessed at [http://prescribetoprevent.org/wp2015/wp-content/uploads/Naloxone-product-chart.17\\_04\\_14.pdf](http://prescribetoprevent.org/wp2015/wp-content/uploads/Naloxone-product-chart.17_04_14.pdf); accessed at <http://prescribetoprevent.org/patient-education/videos/>

## Appendix B - Annotated Bibliography: Selected Publications

This annotated bibliography describes key publications cited in this document and relevant research that was not specifically cited in the document, but which the experts leading the efforts we describe in the document felt were important in establishing the effectiveness of the approaches they developed or of components of them.

Ali, M. M., Mutter, R. (2016). *The CBHSQ Report: Patients Who Are Privately Insured Receive Limited Follow-up Services After Opioid-Related Hospitalizations*. Rockville, MD: Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. Accessed August 26, 2016 at [http://www.samhsa.gov/data/sites/default/files/report\\_2117/ShortReport-2117.pdf](http://www.samhsa.gov/data/sites/default/files/report_2117/ShortReport-2117.pdf).

Using the Truven Health Analytics MarketScan® Commercial Claims and Encounters Database, which includes insurance claims from employees and their dependents covered by large, self-insured employers and by regional health plans, the authors conducted an analysis of claims data on opioid-related hospitalizations from 2010 to 2014. Data showed that 40.0 percent of patients did not receive any follow-up services within 30 days following an opioid-related hospitalization while 6.0 percent received medications only, and 43.3 percent received psychosocial services alone. Only 10.7 percent of patients received the recommended combination of both medication and psychotherapeutic services.

Bernstein, E., Shaw, E., Topp, D., Girard, C., Pressman, K., Woolcock, S., Bernstein, J. (2009). *A Preliminary report of knowledge translation: Lessons from taking screening and brief intervention techniques (SBI) from the research setting into regional systems of care.* Acad Emerg Med 2009; 16:1225-1233. ([PMID: 20053242](#))

The authors describe and evaluate a limited statewide dissemination of a screening, brief intervention, and referral to treatment (SBIRT) approach using health promotion advocates (HPAs) in EDs. Findings were that successful implementation of the approach depended on: 1) external funding for start-up; 2) local ED staff acting as champions to support the HPA role, resolve territorial issues, and promote a cultural shift; 3) sustainability planning from the beginning involving administrators, the billing and information technology departments, medical records coders, community service providers, and government agencies; and 4) creation and maintenance of a robust referral network to facilitate patient acceptance and access to substance abuse services.

Bernstein, J., Bernstein, E., Tassiopoulos, K., Heeren, T., Levenson, S., Hingson, R. (2005). *Brief Motivational intervention at a clinic visit reduces cocaine and heroin use.* Drug Alc Depend. 77:49-59. ([PMID: 15607841](#))

This randomized, controlled trial evaluated the effectiveness of a brief motivational intervention in reducing drug use in outpatient clinics affiliated with an inner-city teaching hospital. Blinded observers conducted follow up interviews at 3 and 6 months. Patients who received the brief motivational intervention were more likely to be abstinent based on hair analysis than members of the control group for cocaine alone (22.3 percent versus 16.9 percent), heroin alone (40.2 percent versus 30.6 percent), and both drugs (17.4 percent versus 12.8 percent), with adjusted OR of 1.51-1.57. Cocaine levels in hair were reduced by 29 percent for the intervention group and only 4 percent for the control group. Reductions in opiate levels were similar (29 percent versus 25 percent).

D'Onofrio, G., Degutis, L.C. (2010). *Integrating Project ASSERT: A screening, intervention, and referral to treatment program for unhealthy alcohol and drug use into an urban emergency department.* Acad Emerg Med. 17:903-911. ([PMID: 20670330](#))

Data from 22,534 adult ED patients who were screened by HPAs over a 5-year period (December 1999 through December 2004) were analyzed. The investigators found that 63 percent of patients with problem alcohol or other drug use who received a [Brief Negotiated Interview \(BNI\)](#) were referred to specialty SUD treatment. Of these, 65 percent had enrolled in a program. Two types of referral were made: 1) Direct referrals, in which the patient was transferred directly from the ED to the specialty SUD treatment site, and 2) Indirect referrals, which occurred when there was no space available in a treatment program, the patient was discharged after the operating hours of the treatment program, or the patient was not ready to enter treatment that day. For indirect referrals, patients were given information on how to contact the facility for enrollment. Patients who received a direct referral were 30 times more likely to

enroll than those who were indirectly referred (odds ratio = 30.71; 95 percent confidence interval = 18.48 to 51.04).<sup>Error! Bookmark not defined.</sup>

D'Onofrio, G., O'Connor, P.G., Pantalon, M.V., Chawarski, M.C., Busch, S.H., Owens, P.H., Bernstein, S.L., Fiellin, D.A. (2015). *Emergency department-initiated buprenorphine/naloxone treatment for opioid dependence: a randomized clinical trial*. JAMA. 313(16):1636-1644. ([PMID: 25919527](#))

Three interventions for ED patients with opioid use disorder (OUD) were studied: (1) screening and referral to treatment (referral); (2) screening, brief intervention, and facilitated referral to community-based treatment services (brief intervention); and (3) screening, brief intervention, ED-initiated treatment with buprenorphine/naloxone, and referral to primary care for 10-week follow-up (buprenorphine). Seventy-eight percent of patients receiving ED-initiated buprenorphine were receiving SUD treatment 30 days post-baseline. By comparison, 37 percent in the referral group and 45 percent in the brief intervention group were engaged in SUD treatment on the 30th day after randomization ( $P < .001$ ). Days of illicit opioid use per week went from 5.4 to 0.9 for individuals receiving buprenorphine in the ED while members of the referral group went from 5.4 days to 2.3 days and members of the brief intervention group went from 5.6 days to 2.4 days per week ( $P < .001$  for both time and intervention effects;  $P = .02$  for the interaction effect).

Dwyer, K., Walley, A.Y., Langlois, B.K., Mitchell, P.M., Nelson, K.P., Cromwell, J., Bernstein, E. (2015). *Opioid education and nasal naloxone rescue kits in the emergency department*. West J Emerg Med. 16(3):381-4. ([PMID: 25987910](#))

This retrospective study of the feasibility and effects of ED-based opioid overdose prevention education and naloxone distribution found similar rates of past 30-day opioid use among individuals who had received overdose education and had been given naloxone and trained in its use (OEN) and individuals who only received overdose education (OE). However differences between the groups emerged on other dimensions. Among participants who witnessed another individual experiencing an overdose, 95 percent OEN and 88 percent OE stayed with victim, 74 percent OEN and 38 percent OE called 911, 26 percent OEN and 25 percent OE performed rescue breathing, and 32 percent OEN used a naloxone kit to reverse the overdose. We did not detect statistically significant differences between OEN and OE-only groups in opioid use, overdose or response to a witnessed overdose. While the study was retrospective and had a low response rate, it provides preliminary data for larger, prospective studies of ED-based overdose prevention programs.

Hettema JE, Ratanawongsa N, Manuel JK, Ciccarone D, Coffa D, Jain S, Lum PJ. (2012) *A SBIRT curriculum for medical residents: development of a performance feedback tool to build learner confidence*. Subst Abus. 33(3):241-50. ([PMID: 22738001](#))

As part of a federal grant to develop and implement SBIRT training in medical residency programs, the authors assessed 95 internal medicine residents before they received SBIRT training to identify self-reported characteristics and behaviors that would inform curriculum development. Residents' confidence in their SBIRT skills significantly predicted SBIRT practice. Lack of experience dealing with alcohol or drug problems and discomfort in dealing with these issues were significantly associated with low confidence. To target these barriers, the authors revised their SBIRT curriculum to increase resident confidence in their skills and developed an innovative SBIRT Proficiency Checklist and Feedback Protocol for skills practice observations. Qualitative feedback suggests that, despite the discomfort residents experience in being observed, a proficiency checklist and feedback protocol appear to boost learner confidence.



Jack, H., Oller, D., Kelly, J., Madigson, J. Wakeman, S. (2016). *Addressing substance use disorder in general medical settings: The role, integration, and impact of recovery coaches*. Findings from qualitative study of MGH recovery coaches and patients using semi-structured qualitative interviews (submitted for publication). [PowerPoint slides].

The authors reported preliminary data from a qualitative study examining: 1) perceptions about the ways that recovery coaches affect client recovery and wellness and how recovery coaches fit into the recovery care team and, 2) if they provide any new benefits to the clinical care team. The study involved an exhaustive team of recovery coaches (n=5) and a sample of patients with whom they worked (n=16). The studies identified four core recovery coach activities: 1) system navigation, 2) behavioral modification, 3) harm reduction, and, 4) relationship building. Perceived strengths of recovery coaches included their accessibility, the experience with SUD that they have in common with patients, their ability to motivate behavior change, and their ability to link patients with community-based social services. Perceived challenges included difficulty of asking for help among patients, lack of clarity regarding the coach role, and tension between the coach and care team. An article on the study has been submitted for publication. Error! Bookmark not defined.

LaBelle, C.T., Choongheon Han, S., Bergeron, A, Samet, J.H. (2016). *Office-Based Opioid Treatment with Buprenorphine (OBOT-B): Statewide Implementation of the Massachusetts Collaborative Care Model in Community Health Centers*. *Journal of Substance Abuse Treatment*. 60: 6-13. ([PMID: 26233698](#))

The authors describe a Massachusetts Bureau of Substance Abuse Services (BSAS) initiative to disseminate the office-based opioid treatment with buprenorphine (OBOT-B) Massachusetts Model from its development at Boston Medical Center (BMC) to its implementation at fourteen community health centers (CHCs) beginning in 2007. Over three years, the expansion of OBOT to the fourteen CHCs increased the number of physicians who could prescribe buprenorphine for the treatment of OUD by 375 percent, from 24 to 114. During this period annual CHC admissions for OBOT markedly increased. The authors concluded that dissemination of the model enabled implementation of effective treatment for patients with an opioid use disorder at community health centers throughout Massachusetts and that it effectively engaged primary care physicians in the treatment of patients with OUD.

Liebschutz, J.M. et al. (2014). *Buprenorphine treatment for hospitalized, opioid-dependent patients: a randomized clinical trial*. JAMA Intern Med. 174(8):1369-76. ([PMID: 25090173](#))

A randomized clinical trial was conducted to determine whether buprenorphine administration during medical hospitalization and linkage to office-based opioid treatment (OBOT) with buprenorphine after discharge increased initiation of OBOT and sustained engagement in it, and whether it decreased illicit opioid use at 6 months post-hospitalization. Participants were randomly assigned to either a five-day buprenorphine detoxification protocol or buprenorphine induction, in-hospital dose stabilization, and post-discharge linkage to OBOT through the hospital's primary care clinic. Buprenorphine induction patients were more likely to enter OBOT than those in the detoxification group (52 [72.2 percent] vs 8 [11.9 percent],  $P < .001$ ). At 6 months, 12 buprenorphine induction participants (16.7 percent) and 2 detoxification participants (3.0 percent) were receiving buprenorphine in an outpatient setting ( $P = .007$ ). Using an intent-to-treat analysis, the authors found participants randomized to the buprenorphine induction group reported less illicit opioid use in the 30 days before the 6-month interview than did members of the detoxification group (incidence rate ratio, 0.60; 95 percent CI, 0.46-0.73;  $P < .01$ ).

Naeger, S., Ali, M.M., Mutter, R., Mark, T.L., Hughey, L. (2016). *Prescriptions Filled Following an Opioid-Related Hospitalization*. Psychiatr Serv. 67(11):1262-1264.

Using the 2010–2014 MarketScan Commercial Claims and Encounters database, this analysis identified the percentage of patients ( $N=36,719$ ) with an opioid-related inpatient admission who received SUD treatment medications within 30 days of being discharged. Fewer than one out of five individuals with an opioid-related admission (16.7 percent) received any FDA-approved medications for the treatment of OUD in the 30 days following discharge, while 13.9 percent filled a prescription for a benzodiazepine and 22.4 percent filled a prescription for an opioid analgesic. The data suggest both that too few patients are receiving FDA-approved medication for OUD following an opioid-related hospitalization and that, following an opioid-related inpatient hospitalization, some patients may be receiving medications placing them at increased risk of overdose.

Thakarar, K. et al. (2016). *Optimising health and safety of people who inject drugs during transition from acute to outpatient care: narrative review with clinical checklist*. Postgrad Med J. 92(1088):356-63. ([PMID: 27004476](#))

This article provides a narrative review to help medical providers recognize and address key health issues in people who inject drugs and are being released from the emergency department or from an inpatient hospital. In addition, it provides a clinical checklist to help guide providers in the care people who inject drugs, including strategies that are applicable to low-resource settings, which may lack SUD treatment options.

Van Boekel, L.C, et al. (2013). *Stigma among health professionals towards patients with substance use disorders and its consequences for healthcare delivery: Systematic review*. Drug and Alcohol Dependence. 131: 23-35. ([PMID: 23490450](#))

This systematic literature review examines health professionals' attitudes towards patients with SUDs and the consequences of these attitudes on healthcare delivery for these patients in Western countries. Health professionals generally had a negative attitude towards patients with SUDs, perceiving violence, manipulation, and poor motivation as impeding factors in the delivery of healthcare to them. Health professionals also lacked adequate education, training and support structures in working with this patient group. Negative attitudes of health professionals diminished patients' feelings of empowerment and subsequent treatment outcomes. Health professionals are less involved and have a more task-oriented approach in the delivery of healthcare, resulting in less personal engagement and diminished empathy.

Wakeman, S.E. et al. (2016). *Does Inpatient Addiction Consultation Reduce Addiction Severity? A Prospective, Longitudinal Study*. Poster session presented at the American Society of Addiction Medicine 47<sup>th</sup> Annual Conference, April 14-17, 2016, Baltimore, MD.

This prospective, longitudinal study compared 30-day post-discharge outcomes of patients with SUD who were seen by an addiction consult team during hospitalization to outcomes of patients with OUD who were not seen by the team. Baseline ASI composite scores were higher in the intervention group (ASI-alcohol 0.45, ASI-drug 0.13; n=139) than in the control group (ASI-alcohol 0.27, ASI-drug 0.09; n=87). Primary and secondary outcomes improved in both groups however the magnitude of improvement was greater in the intervention group than in the control group for nearly all outcomes. In a subgroup analysis limited to 57 pairs of patients matched on major substance used and baseline ASI, the magnitude of improvement remained greater in the intervention group than in the control group.

Wakeman, S.E., Phan-Kanter, G, Donelan, K. (2016). *Attitudes, practices, and preparedness to care for patients with substance use disorder: Results from a survey of general internists*. Subst Abus. 37(4):635-641. ([PMID: 27164025](#))

A cross-sectional survey of 290 inpatient and outpatient general internists in an academic medical center was employed to evaluate attitudes, preparedness, and clinical practice related to SUD. Forty-six percent of respondents frequently cared for patients with SUD and sixteen percent frequently referred patients to treatment while 6% frequently prescribed a medication to treat SUD. Twenty percent felt very prepared to screen for SUD, 9% to provide a brief intervention, 7% to discuss behavioral treatments, and 9% to discuss medication treatments. Thirty-one percent felt that SUD is different from other chronic diseases because they believe using substances is a choice. Fourteen percent felt treatment with opioid agonists was replacing one addiction with another. Twelve percent of hospitalists and 6% of PCPs believe that someone who uses drugs is committing a crime and deserves punishment. Preparedness was significantly associated with

evidence-based clinical practice and favorable attitudes. Frequently caring for patients with SUD was significantly associated with preparedness, clinical practice, and favorable attitudes.

Walley, A.Y., Alperen, J.K., Cheng, D.M., Botticelli, M., Castro-Donlan, C., Samet, J.H., Alford, D.P. (2008). *Office-based management of opioid dependence with buprenorphine: clinical practices and barriers*. *J Gen Intern Med*. 23(9):1393-8. ([PMID: 18592319](#))

This survey of Massachusetts physicians waived to prescribe buprenorphine for the treatment of OUD examined clinical practices and barriers to effective care. The authors mailed the survey to all 356 Massachusetts physicians who then had a DATA 2000 waiver and received responses from 265 (74.4 percent). In advance of the mailing, these physicians were divided into two groups, those who prescribed buprenorphine for the treatment of OUD (prescribers) and those who did not (non-prescribers). Among prescribers (66 percent of respondents), clinical practices included mandatory counseling (79 percent), drug screening (82 percent), observed induction (57 percent), linkage to methadone maintenance (40 percent), and storing buprenorphine notes separate from other medical records (33 percent). Most non-prescribers (54 percent) reported they would prescribe if barriers were reduced. Being a primary care physician compared to a psychiatrist (AOR: 3.02; 95 percent CI: 1.48–6.18) and solo practice only compared to group practice (AOR: 3.01; 95 percent CI: 1.23–7.35) were associated with prescribing, while reporting low patient demand (AOR: 0.043, 95 percent CI: 0.009–0.21) and insufficient institutional support (AOR: 0.37; 95 percent CI: 0.15–0.89) were associated with not prescribing.

Walley, A.Y., Paasche-Orlow, M., Lee, E.C., Forsythe, S., Chetty, V.K., Mitchell, S., Jack, B.W. (2012). *Acute care hospital utilization among medical inpatients discharged with a substance use disorder diagnosis*. *J Addict Med*. 6(1):50-6. ([PMID: 21979821](#))

This observational cohort study involving 738 patients on a general medical service at an urban, academic, safety-net hospital compared the rate and risk of acute care hospital utilization (emergency department visit or hospitalization) within 30 days of discharge among patients discharged with a primary SUD or a secondary discharge SUD diagnosis to patients without SUD. At discharge, 17 percent of subjects had a SUD diagnosis. These patients had higher rates of recurrent acute care hospital utilization than patients without SUD diagnoses (0.63 vs 0.32 events per subject at 30 days,  $P < 0.01$ ) and increased risk of any recurrent acute care hospital utilization (33 percent vs 22 percent at 30 days,  $P < 0.05$ ). In adjusted Poisson regression models, the incident rate ratio at 30 days was 1.49 (95 percent confidence interval, 1.12-1.98) for patients with SUD diagnoses compared with those without. In subgroup analyses, higher utilization was attributable to those with drug diagnoses or a combination of drug and alcohol diagnoses, but not to those with exclusively alcohol diagnoses.

Whittle AE, Buckelew SM, Satterfield JM, Lum PJ, O'Sullivan P. (2015). *Addressing Adolescent Substance Use: Teaching Screening, Brief Intervention, and Referral to Treatment (SBIRT) and Motivational Interviewing (MI) to Residents*. *Subst Abus.* 36(3):325-31. ([PMID: 25260121](#))

In response to the American Academy of Pediatrics Committee on Substance Use recommendation that screening, brief intervention, and referral to treatment (SBIRT) take place at every adolescent preventive visit and all appropriate urgent visits, the authors developed and tested a training curriculum for residents. Thirty-two residents completed the curriculum. Residents reported high satisfaction with the training. Comparing retrospective pre/post scores on the survey of resident self-reported confidence, measures increased significantly in all domains, including for both alcohol and other drug use. Regarding self-reported MI, skillfulness also increased significantly. Analysis of specific faculty feedback to residents revealed subthemes such as normalizing confidentiality and focusing more on the patient's perspectives on substance use. Resident reflections on their own abilities with SBIRT/MI focused on using the ruler tool and on adapting the MI style of shared decision-making.

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<sup>i</sup>Bernstein E, Bernstein J, Levenson S. "Project ASSERT: An ED-based intervention to increase access to primary care, preventive services and the substance abuse treatment system." *Ann Emerg Med* 1997; 30:181-189.

<sup>i</sup> LaBelle, C.T., Choongheon Han, S., Bergeron, A, Samet, J.H. (2016). *Office-Based Opioid Treatment with Buprenorphine (OBOT-B): Statewide Implementation of the Massachusetts Collaborative Care Model in Community Health Centers*. *Journal of Substance Abuse Treatment*. 60: 6-13.

<sup>iii</sup> Liebschutz, J.M., Crooks, D., Herman D., Anderson, B., Tsui, J., Meshesha, L.Z., Dossabhoy, S., Stein, M. (2014). *Buprenorphine treatment for hospitalized, opioid-dependent patients: a randomized clinical trial*. *JAMA Intern Med*. 2014 Aug; 174(8):1369-76.

<sup>iv</sup> Throwbridge P, Weinstein ZM, Kerensky T, Roy P, Regan D, Samet JH., Walley AY. *Addiction consultation services - Linking hospitalized patients to outpatient addiction treatment*. *J Subst Abuse Treat*. 2017 Aug;79:1-5. PubMed PMID: 28673521