The **National Nurse-Led Care Consortium (NNCC)** is a membership organization that supports nurse-led care and nurses at the front lines of care.

NNCC provides expertise to support comprehensive, community-based primary care.

- Policy research and advocacy
- Technical assistance and support
- Direct, nurse-led healthcare services
Question & Answer

During the presentation, you may ask questions. Click Q&A and type your questions into the open field.

The Moderator will either send a typed response or answer your questions live at the end of the presentations.
Philadelphia had the highest overdose death rate of the top 10 largest U.S. cities in 2016 and 2017.
Enhanced HCV Screening and Treatment Services at PHMC

• In 2012, Public Health Management Corporation health centers in Philadelphia instituted expanded HCV screening and treatment with support from NNCC Gilead FOCUS:
  – Universal opt-out HCV screening for 18 and older
  – Reflex to RNA screening for HCV Ab-positive patients
  – Care coordination and patient navigation
  – Integrated behavioral health consultations and substance use disorder counseling and treatment
  – In-house treatment for HCV
HCV Positive Patient Data

• PHMC serves over 19,000 patients
• From 2012-2016: 15,000 patients tested
• 884 patients confirmed chronic HCV positive (~6% prevalence)
• HCV positive patient data (based on testing data from October 2012-June 2016):
  – 53% RNA Positive patients reported IDU (19% were missing documentation).
  – 90% of the patients chronically infected were publically insured by Pennsylvania (Medicaid).
  – 63.7% of RNA Positive patients had a history of mental health disease
HCV Testing in PWID

• Getting tested for HCV, reduces drug use in PWID
• One Opioid Substitution Therapy (OST) program showed reduced injection opioid use
  • 8.1% reduction in PWID if test positive
  • 6.7% reduction in PWID if test negative
• Benzo, cocaine and other nonRx drug use also reduced

Treatment in health center setting

• All patients receive primary care from primarily PAs/NPs with support from physicians
• Integrated care setting with Behavioral Health Consultants (BHCs,) case managers, as well as substance abuse support (medication assisted treatment program/peer recovery support)
• PCPs trained internally with experienced providers offering classes, mentorships and case study conversations
• Treatment Referral Coordinator works across network to assist with prior authorization process and medication adherence
HCV Continuum in Philadelphia

Fig. 1. The continuum of hepatitis C testing, referral to care, and treatment in Philadelphia from January 2010 to December 2013.

Measuring Impact: How the FOCUS Model Transformed Testing and Linkage to Care at a Philadelphia Health Center

Figure 2: HCV Treatment Continuum at PHMC Care Clinic (January 2015-March 2017)

Figure 2 examines the treatment continuum for patients that received onsite HCV treatment at the PHMC Care Clinic.

http://dx.doi.org/10.1037/pro0000243
Integration of HCV and SUDs treatment in a homeless health care setting

Marguerite Beiser, ANP-BC, AAHIVS
10/29/19
• I have no disclosures

• Maps and graphs have been shared with permission and cited

• Thank you to my patients and colleagues at Boston Health Care for the Homeless Program!
Outline

• Overview of syndemic* in Massachusetts
  • Substance use disorders (SUDs)
    • Opioid/Overdose crisis
  • Homelessness
  • Hepatitis C (HCV)
    • Review HCV treatment in community settings and among people with SUDs
    • Not specifically addressed today: HIV, poverty, structural violence/trauma, racism

• Boston Health Care for the Homeless Program (BHCHP)
  • Examples of programming specifically targeting HCV and SUDs
    • Successful integration
    • Areas in need of further growth and integration

Shifting incidence of fatal opioid overdoses in MA

Increasing and Spreading Opioid-Related Overdose Death Rates in Massachusetts from 2011 to 2015

Fatal Opioid Overdose Rate per 100,000 Residents, by Massachusetts Zip Codes

n = 538, 2011

Overdose Rate per 100,000 Compared to US and MA opioid death rates

- 0 (n = 296)
- < 10.4 (US) (n = 101)
- >= 10.4 (US) and < 15.4 (MA) (n = 55)
- >= 15.4 (MA) (n = 66)
- Non-residential land

Data Source: MERI
Centers for Disease Control and Prevention

2011

Fatal Opioid Overdose Rate per 100,000 Residents, by Massachusetts Zip Codes

n = 538, 2015

Overdose Rate per 100,000 Compared to US and MA opioid death rates

- 0 (n = 208)
- < 10.4 (US) (n = 46)
- >= 10.4 (US) and < 15.4 (MA) (n = 38)
- >= 15.4 (MA) (n = 248)
- Non-residential land

Data Source: MERI
Centers for Disease Control and Prevention

2015

Legislative Report: Chapter 55 Opioid Overdose Study - August 2017
Opioid-involved overdoses among homeless individuals in MA

- The opioid overdose death rate is between 16 and 30 times higher for the homeless individuals compared to the rest of the adult population.\textsuperscript{53}

National and MA homeless incidence, 2018

EXHIBIT 1.6: Estimates of Homeless People
By State, 2018

MASSACHUSETTS
29 in every 10,000 people were experiencing homelessness
+20.6% change from 2010
+14.2% change from 2017

Estimates of Homelessness
6,811 individuals
13,257 people in families with children
465 unaccompanied homeless youth
985 veterans
1,373 chronically homeless individuals

Total Homeless, 2018
20,064

Boston homeless incidence, 2019

- **6,203** total homeless individuals and families
  - 2,348 individuals
    - 121 people on the streets*
  - 1,221 homeless families
    - 3,855 family members

* Lowest street count in more than 30 years

Housing status matters: Stark disparities in prevalence of HCV and HIV between housed and homeless

<table>
<thead>
<tr>
<th>HCV</th>
<th>Prevalence</th>
<th>Population studied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household phone survey¹</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Homeless at 7 HCH sites²</td>
<td>31%</td>
<td>23%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HIV</th>
<th>Prevalence</th>
<th>Population studied</th>
</tr>
</thead>
<tbody>
<tr>
<td>National estimate⁴</td>
<td>0.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Homeless meta-analysis world-wide⁵</td>
<td>0.3%-21%</td>
<td>0.3%-21%</td>
</tr>
<tr>
<td>Homeless in the US estimate⁶</td>
<td>3.4%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Homeless @BHCHP⁷</td>
<td>2.7%</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

7. Internal data
Hepatitis C incidence and prevalence in MA

The Massachusetts example

- How many cases does a jurisdiction have evidence for? 120,781
  - What proportion of cases are estimated to have been diagnosed? 45% (HHS Action Plan)
  - How many cases have spontaneously cleared the virus? 15-25%
  - How many cases have been treated successfully (cured)? 5%
  - How many cases have died? 9%

MA DPH; slides used with permission from Dan Church, MPH
The age distribution of HCV infection has shifted in the last decade, now reflecting a population predominantly under the age of 40.

Conservative estimates by MA DPH suggest that HCV prevalence in people under 30 is 24x what is predicted by the CDC.

Data source: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences.
HCV Treatment in a Nutshell

• Combination targeted therapy- Direct-Acting Antiviral (DAA) Therapy
• Broadly adopted clinical guidelines: IDSA/AASLD
  
  www.hcvguidelines.org

• In 2019 HCV treatment is near universally:
  • 8-12 weeks duration
  • Pangenotypic
  • >95% cure rate (Sustained Virologic Response, SVR)
  • Well-tolerated

• Special considerations for patients with decompensated cirrhosis, ESRD

• Drug-drug interaction review is critical
Ongoing barriers to HCV treatment

Also... stigma, competing priorities, time/administrative burden, lack of funding, etc

https://stateofhepc.org/resources/
**Conclusion:**

“In a real-world cohort of patients at urban FQHCs, HCV treatment administered by nonspecialist providers was as safe and effective as that provided by specialists. Nurse practitioners and PCPs with compact didactic training could substantially expand the availability of community-based providers to escalate HCV therapy, bridging existing gaps in the continuum of care for patients with HCV infection.”

AASLD/IDSA recommendations for HCV treatment

- Per AASLD/IDSA
  - Ideally, treatment should occur in multi-disciplinary setting that offers addiction treatment, but the absence of this type of setting is not a contraindication for treating PWIDs
  - There is strong evidence of high adherence, sustained virologic response, and low rates of reinfection among PWIDs
  - Treating HCV among people are actively using drugs can reduce transmission to others
  - Treating at lower fibrosis stages has a greater mortality benefit and improved regression
  - Treating women of child-bearing age prevents vertical transmission

HCV treatment among people who inject drugs

- 2018 meta-analysis: PWID achieve HCV cure at high rates
  - ~87% SVR among recent and ongoing PWID
  - ~90% SVR among individuals on opioid substitution tx

<table>
<thead>
<tr>
<th>Exclusive study population/subpopulation</th>
<th>Number of studies or substudies</th>
<th>Number of participants</th>
<th>Treatment completion (95% CI)</th>
<th>ITT SVR (95% CI)</th>
<th>mITT SVR (95% CI)</th>
<th>Loss to follow-up (95% CI)</th>
<th>( I^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recent IDU, with or without OST</td>
<td>8</td>
<td>670</td>
<td>96.9% (95.6–98.2)</td>
<td>87.4% (82.0–92.8)</td>
<td>91.7% (87.9–95.4)</td>
<td>66.1%</td>
<td>2.8% (0.5–5.2)</td>
</tr>
<tr>
<td>OST, with or without recent IDU/non-IDU</td>
<td>25</td>
<td>2331</td>
<td>97.5% (96.5–98.5)</td>
<td>92.6% (90.2–94.9)</td>
<td>95.3% (93.6–97.0)</td>
<td>72.5%</td>
<td>3.0% (1.7–4.3)</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>633</td>
<td>96.5% (94.5–98.5)</td>
<td>86.7% (80.2–93.2)</td>
<td>93.8% (90.3–97.2)</td>
<td>76.3%</td>
<td>7.3% (2.6–11.9)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Study design</th>
<th>Number of studies or substudies</th>
<th>Number of participants</th>
<th>Treatment completion (95% CI)</th>
<th>ITT SVR (95% CI)</th>
<th>mITT SVR (95% CI)</th>
<th>Loss to follow-up (95% CI)</th>
<th>( I^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observational</td>
<td>28</td>
<td>2483</td>
<td>96.9% (95.9–98.0)</td>
<td>88.8% (85.8–91.9)</td>
<td>93.4% (91.3–95.5)</td>
<td>80.2%</td>
<td>4.6% (2.9–6.3)</td>
</tr>
<tr>
<td>Clinical trial</td>
<td>10</td>
<td>1151</td>
<td>98.2% (97.4–99.0)</td>
<td>93.9% (92.5–95.3)</td>
<td>96.2% (94.6–97.8)</td>
<td>52.4%</td>
<td>2.5% (1.2–3.8)</td>
</tr>
</tbody>
</table>

Table 3: Pooled estimates of treatment completion, SVR and loss to follow-up, by study population and study design.

Reinfection among British Columbia Hepatitis Testers Cohort (n=4,114)

HCV Treatment Scale-up in High-Risk Populations Can Prevent Onward Transmission

- Observed and modeled HCV chronic prevalence among PWID in Melbourne, Australia

![Graph showing HCV prevalence among PWID over time with scale-up scenarios.](https://clinicaloptions.com)
TraP Hep C: HCV Treatment as Prevention Program in Iceland Reduced Incidence in 2 Yrs

- Major scale up with reasonable cure rates
  - Overall SVR: 89%; SVR for patients who completed treatment: 95%
- Dramatic reduction in community viral load and HCV incidence

Runarsdottir. AASLD/EASL HCV Special Conference 2019.
Boston Health Care for the Homeless Program

**Medicine Where It Matters**

**Hospital-Based Clinics**
- BHCPC maintains strong ties to our local hospitals, including Mass General Hospital and Boston Medical Center, in the care of our patients. With onsite clinical space, our staff provides primary care for homeless patients who are hospitalized and ensures they follow up and discharge planning after a hospital stay.

**Family Team Sites**
- As the number of homeless families in and around Boston continues to grow, BHCPC works hard to meet the demand for quality healthcare in family shelters, hospitals, shelters, and other facilities across the region.

**Shelter-Based Clinics**
- BHCPC operates 36 shelter-based clinics across the region.

**Program Stats**
- 10,600+ unique patients in 2017
- 130,000 visits in 2017
- 300+ employees
- $55M in revenue
- 33 years in operation
- 40+ clinical sites
- 60% patients with SUD

**Not shown:**
- Outreach
- Legal Services
- Dental Services
- Substance Use Disorders
- Behavioral Health
- Homeless Veterans
- Homeless Outreach
- Program Services
- Nutrition Services
- Wellness Services
- Housing Services
- Homelessness
- Support Services
- Transitions
- Workforce Development

*as of June 2015*
Quick Check In
BHCHP
Geographical Context

Syringe Heat Map 2015-2017
(Bearnot et al, 2018)

HCV rates by neighborhood, Boston 2015

- South End had the highest HCV rate rate at 307 cases per 100,000 compared to any other Boston neighborhood
LIFE AND LOSS ON METHADONE MILE

The long-used clinic is about to close its doors to patients trying to kick their addiction and enter into medication-assisted treatment. Bycombining an array of therapies and medication, patients are able to reduce their consumption of heroin and drugs like methadone, but the long-term effects of the clinic's closure remain uncertain.

The scene is often chaotic, with patients congregating outside and inside the building, some seeking treatment, others simply passing through. The clinic, known for its heavy use of the controversial medication methadone, has been a central hub for recovering addicts struggling to overcome their addiction.

In recent years, the clinic has faced numerous challenges, including financial difficulties and complaints from patients. The decision to close the clinic comes as the provider faces increasing challenges in the face of rising demand for treatment and the ongoing opioid epidemic.

As the clinic prepares to shutter its doors, patients are left with a mix of emotions:anger, frustration, and sadness. Many feel abandoned by a system that has failed to adequately support them.

In this photo, a patient stands outside the clinic, surrounded by others who are waiting to enter or just passing through. The scene is a snapshot of the complex and often tumultuous world of addiction treatment.

[Image description: A patient stands outside the clinic, looking towards the camera. Other patients can be seen standing or walking in the background.]
THE OVERDOSE CRISIS

- 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
- Significant existing addictions programming
THE OVERDOSE CRISIS

MAT
Medication for Addiction Treatment (MAT), such as buprenorphine and naltrexone, is provided by individual waivered clinicians and by a centralized team, with services coordinated by nurse care managers and therapists, in collaboration with physicians.

ACCESS TEAM
The Addiction Collaborative and Expedited Support Services (ACCESS) team provides expedited primary care, MAT, and individual and group therapy for those at highest risk of overdose.

CAREZONE
The CareZONE health van provides accessible, high quality primary care and addiction services to individuals in Boston’s overdose “hotspots” who are not already well connected to health care or addiction treatment.

SPOT
The Supportive Place for Observation and Treatment (SPOT) actively engages people who inject drugs, and provides medical monitoring of oversedation, harm reduction services, and linkages to treatment.

NALOXONE
BHCHP offers overdose education and naloxone trainings to all patients and staff. We also distribute naloxone rescue kits to all those at risk of experiencing or witnessing an overdose.

SPOT STATISTICS: 2016-2018

800+ unique visitors
7,139 encounters
22% direct connections to medical or mental health care
24% visitors referred to substance use treatment

* BHCHP’s Supportive Place for Observation and Treatment (SPOT). Data reflect visits in the 2 years between: April 2016 and March 31, 2018.
THE OVERDOSE CRISIS

THERAPY ON-DEMAND

Through our “Open Access” system, patients are able to access same-day therapy appointments with licensed clinicians, eliminating wait times and supporting patients in times of crisis.

QUALITY IMPROVEMENT

Program wide, we strive to improve outcomes across the opioid use disorder cascade of care—that is, at each stage of care, from initial diagnosis to achievement of sustained recovery.

SUD GROUPS

Peer support and group therapy is incredibly helpful to our patients, and is offered daily, including at the Barbara McInnis House, where patients receive 24/7 respite care.

INTEGRATED BEHAVIORAL HEALTH

Behavioral Health clinicians work side by side with primary care teams and help to manage co-occurring PTSD, depression, anxiety, and other mental illnesses.

BATHROOM MONITORING

To respond to the almost daily overdoses happening in our public bathrooms, we use close monitoring and have installed reverse motion detectors, alerting us when someone has not moved in 3 minutes.

ADVOCACY

We actively participate in community meetings with neighborhood & government partners seeking solutions.

RISK ROUNDS

Monthly discussions with specialists from MGH foster multidisciplinary, team-based problem-solving.
Significant burden of HCV at BHCHP

- 23% HCV prevalence (2010 Medicaid claims data)\(^1\)
  - Updated (2016) internal report suggests 11.6%
- HCV dx associated with excess health care utilization and cost\(^1\)
- Excess mortality from liver cause\(^2\)
- Needs assessment of BHCHP patients with HCV\(^3\)
  - 74% indicated interest and confidence in ability to complete HCV treatment
  - Majority identified primary care as preferred location for treatment

HCV Treatment Team

**HCV Team**: Founded in 2014

- Case manager- referrals, PAs, adherence support
- Nurse- intakes, on treatment visits/labs
- Providers- assess liver health and recommend tx
- Program Director- supervises team, sees pts, guides quality and research agenda, manages grants

**Funding:**

- Internal BHCHP
- Kraft Center for Community Health, Practitioner Program (supported time for HCV Director)
- National Viral Hepatitis Roundtable (NVHR) mini-grant
- MA Department of Public Health as of 11/17
BHCHP guiding principles for HCV treatment

• Everyone should be treated. Reduce barriers, don’t add them
  • Nobody has to “prove that they really want it” in any other aspect of their health care

• Recognize that you have power to prioritize HCV care alongside other health issues
  • There is no perfect situation
  • Kept appointments as proxy for stability
  • Readiness can be assessed over time

• Do not assume things are stable on treatment
  • Weekly adherence checks are central to our model, allow team to respond quickly to destabilizing issues, such as:
    • Change in housing status
    • Loss or theft of medication
    • Loss of insurance
    • Relapse/progression to more chaotic drug use and increased exposure risk
    • Incarceration
Pearls related to treating HCV among people currently using drugs

• Obtain as many points of contact as possible
  • Phone numbers, email/MyChart, case workers at programs, contacts at syringe exchange programs (SEPs), etc

• Try to treat couples or other drug-using partners concomitantly

• Try to reinforce that the goal is to continue HCV therapy through any challenges
  • Destigmatize
  • Keep communication flexible and responsive to times of crisis
  • Anticipatory guidance to reduce risk of reexposure
  • ***MAT on demand by HCV treater
## Solutions to Practical Challenges

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readiness</td>
<td>Multiple visits to gauge adherence potential</td>
</tr>
<tr>
<td></td>
<td>Anticipate RF for tx interruption</td>
</tr>
<tr>
<td></td>
<td>Collaborate with established care teams who know pt well</td>
</tr>
<tr>
<td>Medication loss/theft prevention</td>
<td>DOT, weekly pill boxes, home delivery, emergency insurance override</td>
</tr>
<tr>
<td>No phone</td>
<td>Pre-arranged appts</td>
</tr>
<tr>
<td></td>
<td>My Chart, if applicable</td>
</tr>
<tr>
<td></td>
<td>Outreach to nearby shelter/program settings at reliable intervals</td>
</tr>
<tr>
<td>Lack of transportation</td>
<td>Bus passes, medication delivery, satellite laboratory</td>
</tr>
<tr>
<td>Competing priorities</td>
<td>Decrease barriers as much as possible</td>
</tr>
<tr>
<td></td>
<td>Co-schedule with PCP or OBAT/MMT</td>
</tr>
<tr>
<td></td>
<td>Limit unnecessary travel</td>
</tr>
<tr>
<td></td>
<td><strong>Accept less than perfection</strong></td>
</tr>
<tr>
<td>Specialty pharmacies (copay, home delivery, time)</td>
<td>HCV team care coordinator navigates for pt</td>
</tr>
<tr>
<td></td>
<td>Insurance authorized rep</td>
</tr>
<tr>
<td></td>
<td>Mail to clinic</td>
</tr>
</tbody>
</table>
BHCHP HCV Treatment Outcomes

Linked to HCV Treatment Evaluation 510

Initiated Treatment 300
- Completed Treatment 285
  - SVR Not Achieved 17
  - Missing SVR Data 14
  - SVR Achieved 254
- Did not complete treatment 15
  - Lost to F/U 11
  - Incarcerated 2
  - Stopped due to SEs 2
  - SVR Achieved 1

Did not initiate treatment 210
- Lost to F/U 93
- Socially unstable 49
- Spontaneous clearance 23
- Outside Care 23
- Death 12
- Medically unstable 10

SVR Achieved Total 255

Most people do very well, despite challenging circumstances

BHCHP Post SVR Follow Up

- Post-SVR F/U 137 (206 years of person FU)
  - Preserved SVR 110
  - Reinfection Any Point 27 (13.1 reinfections/100 py of FU)

Median time to reinfection: 168 days (IQR=81-207)

In univariate analyses, reinfected individuals were more likely to be:
- Hispanic (p=0.017)
- Literally homeless (p=0.007)
- Dx OUD (p=0.012)
- IDU HCV risk factor (p=0.026)
- Address change during treatment (p=0.004)
Challenges to HCV and SUDs integration at BHCHP

• Siloed programs, even within same organization
• All of us are “putting our fingers in the dam” to try to meet an overwhelming need
• Ad hoc collaboration
  • All BHCHP providers are x-waivered
  • HCV treaters also AAHIVSs, OBAT providers and PCPs
  • Benefit from colocated BH, addiction and HCV services (limited to main site and one veterans shelter, initially)
  • Shared EMR- can cross-collaborate on adherence check-ins, labs, med delivery
Plans for improved HCV and SUDs integration

• Where we are going:
  • Expanded training of OBAT providers/PCPs in shelter and street-based settings to perform their own HCV tx assessments
    • Decentralize treatment access
    • Promote continuity across primary, addiction, and HCV care
  • Case manager specifically for support of outreach site providers and patients added 10/19
  • Correctional Linkage to Care for HCV combined with buprenorphine treatment in pre-release period at local HOC
  • Panel management review between HCV team and OBAT to systematically approach elimination
  • Enhanced relationship with SEP next door to our site
  • Improved focus on reinfection prevention
Thank you for your time!

Questions?

mbeiser@bhchp.org
To receive credit...

We will send an email with a link from Clinical Directors Network within 1-2 days after the webinar.

You must complete to receive credit and the certificate will arrive within 1 week of completing the survey.
Remaining webinars for the Learning Collaborative Series:

Part 3: Implementing an Enhanced HCV Screening Model in Iowa
  — **Tuesday November 12, 2:00 pm ET**

Part 4: Expanding Medication Assisted Therapy in Philadelphia
  — **Tuesday December 3, 2:00 pm ET**
  — NNCC will host an extra 30 minutes for “office hours”
  — Extended Q&A and discussion topics for a related article
Thank you!

NNCC Contact Information

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Kevin Leacock, Public Health Project Coordinator
kleacock@phmc.org
Office Hours

Discussion Questions, Best Practices, Case Presentations
Marguerite Beiser, ANP-BC, AAHIVS
Boston Healthcare for the Homeless Program

Jillian Bird, RN
Nurse Training Manager
National Nurse-Led Care Consortium