Improving Care for Hospitalized Adults with Substance Use Disorder

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National Academies of Science, Engineering and Medicine
I have no conflicts of interest to disclose.
Case example:

23 year-old with history of IV heroin and methamphetamine use disorders admitted with MRSA endocarditis

Admitted to area hospital with endocarditis

• Discharge to skilled nursing with IV antibiotics
• Reports last drug use 2 months prior

Transferred to OHSU with abscess surrounding aortic root and lungs

• Heart surgery to repair aortic and mitral valves
• SW consult
  • Limited engagement
  • Encouraged to seek SUD treatment
• Discharged with #120 tabs of hydromorphone

Readmitted with chest wall pain

• Pain control with plan to taper
• SW re-consulted; had not engaged in SUD treatment, grieving boyfriend death

Septic shock to ICU

• Blood pressure 90s → 50s
• Heart failure with infection around aortic valve
• PEA arrest x2
• Died with family at bedside

Despite extensive physical health care and hospital staff best effort, no SUD expertise in the hospital
Objectives

• Describe rationale and design for a hospital-based addiction medicine service

• Share experience implementing IMPACT and initial outcomes

• Suggest implications for policy makers
Opioid-related hospitalizations are rising across the US

AHRQ 2016
Substance use disorder (SUD) driving skyrocketing costs

- SUD drives high rates of hospitalizations, readmission, long LOS
- $15 billion in US inpatient hospital charges related to OUD in 2012
  - Over $700 million related to serious infections

AHRQ HCUP national sample 2009
Ronan, Health Affairs 2016
Yet health system slow to respond...

• Hospitalization often addresses the acute medical illness but not the underlying cause - the SUD
  — Leads to significant waste and poor outcomes

• Effective treatments exist but are underutilized

• Many people not engaged in treatment
Mixed-methods Needs Assessment
185 hospitalized adults (Sept 14- April 15)

• Hospitalization is a reachable moment
  – 57% of high risk alcohol users; 68% of high risk drug users reported wanting to cut back or quit
  – Many wanted medication for addiction treatment (MAT) to start in hospital

• Gap-time to community SUD treatment

• Patients valued treatment choice, providers that understand SUD

Englander, JHM 2017
Velez, JGIM 2016
IMPACT: Improving Addiction Care Team

- Hospitalization is reachable moment
- OHSU lacked expertise to assess, engage or initiate treatment for SUD

- No usual pathways to outpatient addiction care
- Long community wait times

**Inpatient consult service:**
physicians, SW, peer recovery mentors

**Rapid-access pathways to community SUD treatment supported by liaisons**

Englander, JHM 2017
Velez, JGM 2017
Prolonged inpatient length of stay

Expected LOS vs Actual LOS

Diagnosis:
- Both
- Osteomyelitis
- Endocarditis
- Neither

Englander, JHM 2017
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Rapid-access pathways to SUD treatment supported by liaisons

- Long-term IV ABX pts (endocarditis/ osteo) had long LOS
- Residential SUD treatment not equipped for medically complex patients (IVs)

MERT Integrates IV antibiotics into residential addiction treatment

Launched summer 2015

England, JHM 2017; Velez, JGIM 2017
## IMPACT Experience

<table>
<thead>
<tr>
<th>Patient Demographics</th>
<th>Sept 2015-Dec 2017</th>
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</thead>
<tbody>
<tr>
<td>Total IMPACT patients seen</td>
<td>710</td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>44.3 years</td>
</tr>
<tr>
<td>Male gender</td>
<td>418 (59%)</td>
</tr>
<tr>
<td>Portland Metro residence</td>
<td>404 (57%)</td>
</tr>
<tr>
<td>Homeless</td>
<td>323 (45%)</td>
</tr>
<tr>
<td>Substance use</td>
<td></td>
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<tr>
<td>Opioid Use Disorder</td>
<td>431 (61%)</td>
</tr>
<tr>
<td>Alcohol Use Disorder</td>
<td>314 (44%)</td>
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<tr>
<td>Methamphetamine Use Disorder</td>
<td>269 (38%)</td>
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## IMPACT Activities

<table>
<thead>
<tr>
<th>IMPACT activities</th>
<th>Sept 2015-Dec 2017</th>
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</thead>
<tbody>
<tr>
<td>Unique patients seen by IMPACT (n)</td>
<td>710</td>
</tr>
<tr>
<td>Patient engagement</td>
<td>630 (89%)</td>
</tr>
<tr>
<td>Average physician encounters/ patient (range)</td>
<td>3.3 (0-33)</td>
</tr>
<tr>
<td>Average SW encounters/ patient (range)</td>
<td>4 (0-31)</td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
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<tr>
<td>Linked with community SUD treatment</td>
<td>421 (59%)</td>
</tr>
<tr>
<td>Medication Assisted Treatment</td>
<td>408 (57%)</td>
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Before IMPACT, providers described widespread “moral distress”

“[Patients] ended up either dead or reinfected. Nobody wanted to do stuff because we felt it was futile. Well of course it's futile.... you're basically trying to fix the symptoms. It's like having a leaky roof and just running around with a bunch of buckets, which is like surgery. You gotta fix the roof...otherwise they will continue to inject bacteria into their bodies.”

– Cardiac surgeon

England, under review, JHM
IMPACT as a “sea change”

Providers describe that IMPACT “completely reframes” addiction as “a medical condition that actually has a treatment.”

- “I think you feel more empowered when you've got the right medication... the knowledge and you feel like you have the resources. You actually feel like you're making a difference.”

– ward RN

England, under review, JHM
Providers value rapid-access treatment pathways

“This relationship with [community treatment]... it’s like an answer to prayers.”

“Starting them on [methadone or buprenorphine-naloxone] and then making the next step in the outpatient world happen has been huge. That transition is so critical ... that's been probably the biggest impact.”

- Hospitalist

England, under review, JHM
IMPACT peers support engagement

• “[IMPACT peer] singularly, out of the whole group of them, she was honest, sincere, kind, didn't put words in my mouth, didn't say offensive things... And she went to bat for me in the hospital, with my legal situation, with my family. She was there for me to help me with my son, wheeled me out on the wheelchair so I could smoke. Just an amazing person, very helpful, very good at her job.”
  - IMPACT patient

• “When [IMPACT peer] came in, she basically said if you wanna quit, great, if you don't wanna quit, maybe we can get a plan figured out. She put the ball in my court and she didn't judge me. She made me feel very comfortable.”
  - IMPACT patient
IMPACT outcomes

• Length-of-stay savings

• Studies ongoing to determine healthcare utilization, cost of care
**IMPACT: Improving Addiction Care Team**

### Needs
- Hospitalization is reachable moment
- OHSU lacked expertise to assess, engage or initiate treatment for SUD
- No usual pathways to outpatient addiction care
- Long community wait times
- Long-term IV ABX pts (endocarditis/ osteo) had long LOS
- Residential SUD treatment not equipped for medically complex patients (IVs)

### Intervention

**Inpatient consult service:**
- physician, SW, peer recovery mentors

**Rapid-access pathways** to SUD treatment supported by liaisons

**MERT**
- Integrates IV antibiotics into residential addiction treatment

### Launched summer 2015

*England, JHM 2017*
Medically Enhanced Residential Treatment (MERT) Model

- Usual residential addiction care
  - 20 hours of groups/ week
  - 1 hour of individual therapy/ week
  - On-site medication for addiction (MAT)

- Plus:
  - Once daily IV antibiotic infusions
  - Nursing care (e.g. care management, accompaniment to medical visits, medication support)
  - Weekly telemedicine rounds with hospital infectious disease team
IMPACT made rigorous efforts to engage and recruit participants

7 of 45 potentially eligible participants enrolled in MERT

Englander et al, in press, Substance Abuse Journal March 2018
MERT Findings

Recruitment Barriers
• Patient ambivalence towards residential treatment, wanting to prioritize physical health needs, and fears of untreated pain in residential.

Retention Barriers
• High demands of residential treatment, restrictive practices due to PICC lines, and perceptions by staff and other residents that MERT patients “stood out” as “different.”

Despite the challenges, key informants felt MERT was a positive construct.

Englander et al, in press, SAj March 2018
MERT Implications

• Need for flexible post-acute care models that can:
  – Engage patients across pre-contemplative to action stages of change
  – Integrate pain management, physical healthcare, and SUD treatment

• Highlights role for iterative design processes that included ongoing feedback from adults with SUD

Englander et al, in press, SAj March 2018
Future Directions for IMPACT

- IMPACT extension team
  - IV antibiotics and SUD care in a transitional housing/medical respite setting
  - May extend care to skilled nursing facilities
Implications for Policymakers
1) Hospitalization is a reachable moment to initiate addiction care

- Opportunity to reach people with severe medical illness and SUD who do not otherwise engage in care
- Improve provider experience
- Has potential to reduce unnecessary hospital days and save costs
2) Value of an interprofessional team

• Complimentary roles of providers (MD, NP, PA), social workers, and peers with lived experience in recovery

• Peers represent a new workforce in most hospital settings
  – Require supervision, training, and support
  – Partnership with HR/ legal/ risk

• Peers can play a key role in patient engagement and system redesign
3) Treatment pathways that span hospital and community SUD treatment are key
4) Need for new care models that integrate IV antibiotics and SUD care
5) Treating SUD in the hospital can and should be the standard of care
Acknowledgements
Thank you

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Feeling Good!
on the road to
Recovery from
Addiction!!
And on the road to
surgery to save
my Life!! Then
start my new
life as an Awesome
Dad, and person!!!
THANKS to all that
helped me through
this HARD process!!