The Triple Aim & Serious Mental Illness: Integration 2.0

Miriam Tepper, MD
Sandy Cohen, MSW, MPH
Cambridge Health Alliance – Somerville, MA

IHI Summit
April 22, 2017
Session Objectives

• Identify health disparities experienced by people with serious mental illness and their key drivers.

• Describe how a community-based mental health clinic established an integrated ‘Health Home’ for people with serious mental illness.

• Develop new change ideas to better address the needs of people with serious mental illness through integrated, team-based care and population management.
Presenter Disclosures (if any)

These presenters have nothing to disclose.
Presenter Bios

**Sandy Cohen, MSW, MPH**, has spent 10 years working in academic, not-for-profit, government, and health care settings, specializing in mental health and addictions, health services research, quality improvement, program management and evaluation, and US health reform policy. Since completing his dual-masters in social work (clinical) and public health (health policy & management) at Boston University, Sandy spent several years working with the Institute for Healthcare Improvement (IHI) and contributing to Commonwealth Fund research of high-performing US health care systems. At IHI, Sandy helped establish a new team tasked with designing, creating, and improving internal learning systems to cover all contexts and content areas of the Institute's work. Since June 2015, Sandy has managed an innovative ‘Health Home’ program in outpatient psychiatry at the Cambridge Health Alliance (CHA), a new model of integrated care to achieve the Triple Aim and reduce health inequities for adults with serious mental illness.

**Miriam Tepper, MD**, is a psychiatrist at Cambridge Health Alliance and an Instructor of Psychiatry at Harvard Medical School. After graduating from medical school at the University of North Carolina at Chapel Hill, she completed her psychiatry residency at the MGH/McLean Adult Psychiatry Training Program. Her work has always been devoted to the treatment of adults with serious mental illnesses such as schizophrenia. Early in her career this included work with Healthcare for the Homeless programs as well as leadership at an innovative psychosocial rehabilitation program in addition to her outpatient clinical work. For the past 8 years, she has led CHA’s clinical team working with adults with serious mental illness, and, with Sandy Cohen, has facilitated its transformation from a traditional mental health treatment team into a “behavioral health home” model of treatment. Concurrent with the development of the BHH program, she has also developed a program for young adults with early psychosis.
Our Extra Objectives

- Persuade you that paying attention to serious mental illness (SMI) is critical to achieving the Triple Aim
- Describe how service redesign has rarely engaged BH providers
- Inspire you to consider care integration for SMI at your organizations
- Foster hopefulness (this is hard work!)
Outline

A. Problem Background
   - Population Health: Mortality gap & drivers
   - Experience of Care: Poor quality & access
   - Costs: SMI associated with higher spending

B. Behavioral Health Home model
   - Evidence base for BHH

C. Our Implementation Experience

D. Results / Evaluation

E. Challenges / Lessons Learned

F. Discussion
Room Temperature

How many of you:

a. Are from an organization that provides BH services? What types of services?

b. Are BH providers yourselves?

c. Have worked in specialty BH settings?

d. Have experience serving people with serious mental illness (SMI)?

e. Feel you lower expectations for behavior change among people with SMI?
Case Presentation
Population Health Disparities

Nationwide study of 1.1 million adults in Medicaid with schizophrenia, compared to general Medicaid population:

- **3.7 times** more likely to die during study period
- **28.5 years** potential life lost
- Higher mortality rates for most causes of death
- Most deaths due to “natural” causes

Greatest Overall SMR:
- COPD (9.9)
- Flu & Pneumonia (7.0)
- Sepsis (4.6)
- Diabetes (4.2)
- Cardiovascular Disease (3.6)

Mortality ratios quite high among youngest cohort (20-34 yo)
<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observed Deaths</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>74,003</td>
<td>1172</td>
<td>1,181</td>
</tr>
<tr>
<td>Natural deaths</td>
<td>55,741</td>
<td>1121</td>
<td>1,168</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>19,381</td>
<td>416.6</td>
<td>387.7</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>10,096</td>
<td>228.9</td>
<td>188.4</td>
</tr>
<tr>
<td>Nonischemic heart disease</td>
<td>5,988</td>
<td>123.3</td>
<td>126.0</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>1,561</td>
<td>29.5</td>
<td>35.9</td>
</tr>
<tr>
<td>Other circulatory disease</td>
<td>1,736</td>
<td>35.0</td>
<td>37.4</td>
</tr>
<tr>
<td>Cancer</td>
<td>9,638</td>
<td>185.3</td>
<td>217.9</td>
</tr>
<tr>
<td>Lung</td>
<td>3,595</td>
<td>78.6</td>
<td>70.4</td>
</tr>
<tr>
<td>Colon</td>
<td>679</td>
<td>13.1</td>
<td>15.3</td>
</tr>
<tr>
<td>Breast</td>
<td>995</td>
<td>0.6</td>
<td>43.8</td>
</tr>
<tr>
<td>Liver</td>
<td>315</td>
<td>8.9</td>
<td>3.8</td>
</tr>
<tr>
<td>Pancreas</td>
<td>401</td>
<td>8.8</td>
<td>7.8</td>
</tr>
<tr>
<td>Hematologic</td>
<td>648</td>
<td>14.4</td>
<td>12.4</td>
</tr>
<tr>
<td>Other cancer</td>
<td>3,005</td>
<td>60.8</td>
<td>64.5</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>2,969</td>
<td>52.8</td>
<td>72.1</td>
</tr>
<tr>
<td>Renal failure</td>
<td>327</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td>Influenza and pneumonia</td>
<td>1,602</td>
<td>34.2</td>
<td>32.4</td>
</tr>
<tr>
<td>Sepsis</td>
<td>1,254</td>
<td>22.9</td>
<td>29.7</td>
</tr>
<tr>
<td>COPD</td>
<td>4,304</td>
<td>83.8</td>
<td>96.2</td>
</tr>
<tr>
<td>Liver disease</td>
<td>1,391</td>
<td>35.8</td>
<td>21.0</td>
</tr>
<tr>
<td>Other natural deaths</td>
<td>14,875</td>
<td>313.8</td>
<td>304.4</td>
</tr>
<tr>
<td>Unnatural deaths</td>
<td>9,812</td>
<td>241.7</td>
<td>160.9</td>
</tr>
<tr>
<td>Suicide</td>
<td>2,498</td>
<td>63.7</td>
<td>38.5</td>
</tr>
<tr>
<td>Homicide assault</td>
<td>582</td>
<td>16.4</td>
<td>7.2</td>
</tr>
<tr>
<td>Accidents</td>
<td>5,753</td>
<td>140.0</td>
<td>96.3</td>
</tr>
<tr>
<td>Poisoning</td>
<td>2,846</td>
<td>67.6</td>
<td>49.5</td>
</tr>
<tr>
<td>Nonpoisoning</td>
<td>2,907</td>
<td>72.4</td>
<td>46.8</td>
</tr>
<tr>
<td>Undetermined intent and other</td>
<td>970</td>
<td>21.7</td>
<td>18.8</td>
</tr>
</tbody>
</table>

### Table 1. Observed Deaths, Years of Potential Life Lost per Death, Mortality Rates, and Standardized Mortality Ratios of Adult Medicaid Beneficiaries Diagnosed as Having Schizophrenia by Disease Category and Sex (January 1, 2001, to December 31, 2007)

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observed Deaths</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All causes</td>
<td>74,003</td>
<td>1172</td>
<td>1,181</td>
</tr>
<tr>
<td>Natural deaths</td>
<td>55,741</td>
<td>1121</td>
<td>1,168</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>19,381</td>
<td>416.6</td>
<td>387.7</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
<td>10,096</td>
<td>228.9</td>
<td>188.4</td>
</tr>
<tr>
<td>Nonischemic heart disease</td>
<td>5,988</td>
<td>123.3</td>
<td>126.0</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>1,561</td>
<td>29.5</td>
<td>35.9</td>
</tr>
<tr>
<td>Other circulatory disease</td>
<td>1,736</td>
<td>35.0</td>
<td>37.4</td>
</tr>
<tr>
<td>Cancer</td>
<td>9,638</td>
<td>185.3</td>
<td>217.9</td>
</tr>
<tr>
<td>Lung</td>
<td>3,595</td>
<td>78.6</td>
<td>70.4</td>
</tr>
<tr>
<td>Colon</td>
<td>679</td>
<td>13.1</td>
<td>15.3</td>
</tr>
<tr>
<td>Breast</td>
<td>995</td>
<td>0.6</td>
<td>43.8</td>
</tr>
<tr>
<td>Liver</td>
<td>315</td>
<td>8.9</td>
<td>3.8</td>
</tr>
<tr>
<td>Pancreas</td>
<td>401</td>
<td>8.8</td>
<td>7.8</td>
</tr>
<tr>
<td>Hematologic</td>
<td>648</td>
<td>14.4</td>
<td>12.4</td>
</tr>
<tr>
<td>Other cancer</td>
<td>3,005</td>
<td>60.8</td>
<td>64.5</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>2,969</td>
<td>52.8</td>
<td>72.1</td>
</tr>
<tr>
<td>Renal failure</td>
<td>327</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td>Influenza and pneumonia</td>
<td>1,602</td>
<td>34.2</td>
<td>32.4</td>
</tr>
<tr>
<td>Sepsis</td>
<td>1,254</td>
<td>22.9</td>
<td>29.7</td>
</tr>
<tr>
<td>COPD</td>
<td>4,304</td>
<td>83.8</td>
<td>96.2</td>
</tr>
<tr>
<td>Liver disease</td>
<td>1,391</td>
<td>35.8</td>
<td>21.0</td>
</tr>
<tr>
<td>Other natural deaths</td>
<td>14,875</td>
<td>313.8</td>
<td>304.4</td>
</tr>
<tr>
<td>Unnatural deaths</td>
<td>9,812</td>
<td>241.7</td>
<td>160.9</td>
</tr>
<tr>
<td>Suicide</td>
<td>2,498</td>
<td>63.7</td>
<td>38.5</td>
</tr>
<tr>
<td>Homicide assault</td>
<td>582</td>
<td>16.4</td>
<td>7.2</td>
</tr>
<tr>
<td>Accidents</td>
<td>5,753</td>
<td>140.0</td>
<td>96.3</td>
</tr>
<tr>
<td>Poisoning</td>
<td>2,846</td>
<td>67.6</td>
<td>49.5</td>
</tr>
<tr>
<td>Nonpoisoning</td>
<td>2,907</td>
<td>72.4</td>
<td>46.8</td>
</tr>
<tr>
<td>Undetermined intent and other</td>
<td>970</td>
<td>21.7</td>
<td>18.8</td>
</tr>
</tbody>
</table>

Abbreviations: COPD, chronic obstructive pulmonary disease; SMR, standardized mortality ratio (standardized for age, sex, race/ethnicity, and geographic region).

*Schizophrenia mortality data are from the National Death Index of Medicaid beneficiaries. General population mortality data are from the Centers for Disease Control and Prevention WONDER data. Mortality rates are expressed per 100,000 person-years. The deaths of 8450 individuals were classified as unknown, undetermined, or unspecified. Male and female SMRs are standardized for age, race/ethnicity, and geographic region.

### Drivers of Early Mortality

| High prevalence of modifiable risk factors | • Diet  
|                                           | • Exercise  
|                                           | • Substance use  
|                                           | • Stress  
|                                           | • **Smoking**  
| Gaps in preventive care | • Significantly less likely to have a PCP  
|                                           | • Poor cholesterol, blood sugar, blood pressure screening  
|                                           | • Smoking interventions remain underutilized  
|                                           | • Cancer screening: cervical, breast, colorectal, prostate  
| Poor quality of medical care | • Low treatment rates for diabetes, hypertension, dyslipidemia  
|                                           | • Fewer referrals for elective surgery  
|                                           | • Less likely to receive cardiac procedures  
| Barriers to treatment adherence | • Illness factors (trauma, paranoia, mistrust, poor insight)  
|                                           | • System factors (insurance barriers)  
|                                           | • Social adversity (homelessness, transportation, poverty)  
| Antipsychotic medications | • Weight gain upon initiation (varies across medications)  
|                                           | • Higher rates of metabolic syndrome |
### Per Capita Costs: SMI

#### Figure 2: Per Member Per Month (PMPM) Healthcare Costs by Population and Presence of Behavioral Conditions – 2012 Costs

<table>
<thead>
<tr>
<th>Population</th>
<th>Behavioral Health Diagnosis</th>
<th>Member Months</th>
<th>Medical</th>
<th>Behavioral</th>
<th>Medical Rx</th>
<th>Behavioral Rx</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>No MH/SUD</td>
<td>2,048,000,000</td>
<td>$280</td>
<td>$3</td>
<td>$53</td>
<td>$4</td>
<td>$340</td>
</tr>
<tr>
<td></td>
<td><strong>Non-SPMI MH</strong></td>
<td>278,000,000</td>
<td>$661</td>
<td>$23</td>
<td>$145</td>
<td>$74</td>
<td>$903</td>
</tr>
<tr>
<td></td>
<td><strong>SPMI</strong></td>
<td>47,000,000</td>
<td>$759</td>
<td>$128</td>
<td>$135</td>
<td>$175</td>
<td>$1,197</td>
</tr>
<tr>
<td></td>
<td>SUD</td>
<td>22,000,000</td>
<td>$830</td>
<td>$73</td>
<td>$102</td>
<td>$67</td>
<td>$1,072</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>2,386,000,000</td>
<td>$335</td>
<td>$8</td>
<td>$66</td>
<td>$16</td>
<td>$425</td>
</tr>
<tr>
<td>Medicare</td>
<td>No MH/SUD</td>
<td>508,000,000</td>
<td>$579</td>
<td>$3</td>
<td>N/A*</td>
<td>N/A*</td>
<td>$582</td>
</tr>
<tr>
<td></td>
<td><strong>Non-SPMI MH</strong></td>
<td>23,000,000</td>
<td>$1,369</td>
<td>$40</td>
<td>N/A*</td>
<td>N/A*</td>
<td>$1,409</td>
</tr>
<tr>
<td></td>
<td><strong>SPMI</strong></td>
<td>21,000,000</td>
<td>$1,222</td>
<td>$215</td>
<td>N/A*</td>
<td>N/A*</td>
<td>$1,437</td>
</tr>
<tr>
<td></td>
<td>SUD</td>
<td>6,000,000</td>
<td>$1,291</td>
<td>$213</td>
<td>N/A*</td>
<td>N/A*</td>
<td>$1,504</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>556,000,000</td>
<td>$640</td>
<td>$13</td>
<td>N/A*</td>
<td>N/A*</td>
<td>$653</td>
</tr>
<tr>
<td>Medicaid</td>
<td>No MH/SUD</td>
<td>437,000,000</td>
<td>$309</td>
<td>$4</td>
<td>$63</td>
<td>$5</td>
<td>$381</td>
</tr>
<tr>
<td></td>
<td>MH/SUD</td>
<td>109,000,000</td>
<td>$757</td>
<td>$286</td>
<td>$172</td>
<td>$86</td>
<td>$1,301</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>546,000,000</td>
<td>$398</td>
<td>$61</td>
<td>$85</td>
<td>$21</td>
<td>$565</td>
</tr>
<tr>
<td>Total</td>
<td>No MH/SUD</td>
<td>2,993,000,000</td>
<td>$335</td>
<td>$3</td>
<td>$55</td>
<td>$4</td>
<td>$397</td>
</tr>
<tr>
<td></td>
<td>MH/SUD</td>
<td>494,000,000</td>
<td>$751</td>
<td>$100</td>
<td>$148</td>
<td>$86</td>
<td>$1,085</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>3,487,000,000</td>
<td>$394</td>
<td>$17</td>
<td>$69</td>
<td>$17</td>
<td>$497</td>
</tr>
</tbody>
</table>

*Pharmacy data not available for the Medicare population and the totals for Medicare do not reflect pharmacy costs.

---

Per Capita Costs: SMI

2016: MH “risk category” data in predictive analytics program.

Claims data from 2,017 CHA patients showed projected costs for people with bipolar and schizophrenia were 41 and 45 percent higher, respectively, than next highest-cost (depression).
Population Health
25+ year mortality gap
Prevalent behavioral risk factors: poor diet, smoking, inactivity, substance use
Social adversity: poverty, isolation, stress

Experience of Care
Lower use of primary-care conveys poor experience & connection
Poor quality of care when accessed

Per Capita Cost
~3x higher for adults with SMI than without MH/SUD
Schizophrenia & Bipolar disorders among highest-cost risk categories
The ‘Behavioral Health Home’

A clinical program that aims to “improve the overall health status of people with serious mental illness (SMI) through coordination and integration of primary health care with behavioral health (BH) services within a community-based, specialty BH clinic.”

- SAMHSA-HRSA Center for Integrated Health Solutions
‘Health Home’ Components

Federal Medicaid ‘Health Home’ program – Outlines 6 essential services:

1. Care management
2. Care coordination
3. Health promotion
4. Comprehensive transitional care
5. Individual and family support services
6. Referral to community and social support services

## Veterans’ Administration

<table>
<thead>
<tr>
<th>VHA #1 (2001, N=120)</th>
<th>VHA #2 (2011, N=241,683)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcomes:</strong></td>
<td><strong>Outcomes:</strong></td>
</tr>
<tr>
<td>More primary care visits (91.5% vs 72.1%)</td>
<td>Better quality across 4 of 9 indicators (colorectal cancer screenings, foot exams, alcohol misuse screenings, blood pressure control)</td>
</tr>
<tr>
<td>More likely to have received preventive measures</td>
<td>Less likely to have HbA1c &lt;9</td>
</tr>
<tr>
<td>Greater overall health improvement</td>
<td></td>
</tr>
<tr>
<td>No differences in mental health symptoms or cost</td>
<td></td>
</tr>
</tbody>
</table>

---


SAMHSA Primary Behavioral Health Care Integration (PBHCI): 2009-2013

**Improved**
- Diastolic blood pressure
- Cholesterol
- Plasma glucose

**Unchanged or worsened**
- Systolic blood pressure
- Body Mass Index
- HbA1c
- Smoking
- Mental health outcomes

Randomized Trial: Druss et al. (2016)

FQHC + CMHC partnership
Randomized n=447 with SMI + cardiometabolic risk

Significant improvements in:
• Quality of care for diabetes, hypertension
• Use of preventive services
• Volume of primary care visits

BHH participants improved diastolic BP, cholesterol, HbA1c levels, patient activation... but so did control.

# BHH Evidence Base

<table>
<thead>
<tr>
<th>Promising improvements</th>
<th>Limitations in literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Primary care access</td>
<td>• Variable interventions studied</td>
</tr>
<tr>
<td>• Preventive care</td>
<td>• Applied in unique contexts</td>
</tr>
<tr>
<td>• Cardiometabolic health</td>
<td>• Studied diagnostically mixed population</td>
</tr>
<tr>
<td>• Hospitalization rates</td>
<td>• Outcomes focused on physical health</td>
</tr>
<tr>
<td>• Readmission rates</td>
<td></td>
</tr>
</tbody>
</table>
Backdrop for CHA BHH

Cambridge Health Alliance:
- Safety net, academic medical center in Boston area
- Approx. 150,000 patients annually
- 3 hospitals, 15 primary care clinics
- City Health Dept., Physicians Organization, Foundation
- Wide range of BH services, settings, locations

Medicaid 1115 Waiver – Safety Net Innovations
- Otherwise, no new resources

Institutional support: IT, primary care, ACO
BHH Target Population

Primary Psychotic Disorder:
- Schizophrenia-spectrum
- Bipolar disorder (and taking antipsychotic)

Individual would benefit from:
- Integrated, team-based care planning & management
- Health promotion & education
- Close coordination with community service providers

Specialized program for early psychosis
- Accept adolescents 15+

465 currently enrolled
Program Design

**Former Program**
- Individual psychotherapy
- Group psychotherapy
- Multidisciplinary BH team (psychiatry, social work, psychology)
- Early psychosis intervention
- Quarterly social events for peer and provider interaction

**Additional Resources**
- Fully-Integrated Medical NP (0.5 FTE)
- Care Coordinator (1.0 FTE)
- Program Manager (1.0 FTE)
- EMR tools: Patient registry, ADT alerts, Discharge follow-up, Care plans
- Converted medical exam room

**BHH Vision**
All existing services plus:
- On-site medical care (NP)
- Health promotion & coaching
- Population management
- Enhanced care coordination (especially primary care)
- Patient-centered care planning
- Post-discharge transition support
- Quality measurement and performance improvement
- Patient and family co-production
- Frequent community-building and health education activities
CHA Behavioral Health Home

Specialty Behavioral Health Clinic

Medical services (integrated NP; on-site practice)
- Psychopharm (psychiatry)
- Therapy (Group & 1:1)
- Coordination & continuity of care
- Health Promotion / Education
- Care Supports

Patients & Families

CHA System
- Primary Care practices
- Emergency & Inpatient Units
- Psychiatry & Community Health Programs
- Operational Departments

Outside CHA
- Community BH/PC providers
- Other support providers (CBFS, VNA)
- Social services

BHH Integrated Care Team
Psychiatry, SW, Psychology, Medical NP, Care Coordinator, Manager
Health Promotion & Self-Care

**CHA Cambridge Health Alliance**

**Thinking About Quitting?**
In the Process of Quitting?

Join the

**Smoking Cessation Group**

Wednesdays, 12:00 – 1:00pm
Beginning January 27th
in the 2nd Floor Cafeteria

Open to all patients of the Outpatient Psychiatry Department. Learn about the health and financial effects of smoking, your smoking patterns, and practice skills to help prepare you quit and/or limit use.

Contact Matt Ewen (617) 591-6369 for more information

---

**Healthy Together!**

**A Group to Help You Meet Your Goals for Better Health**

- Reach Your Goals
- Help & Action

- Lose Weight
- Exercise more
- Eat Healthy
- Sleep Better
- Stress Less

- Nutrition Education
- Motivation
- Group Support
- Skill Building
- FUN
- Movement

Day: **Wednesdays**
Time: **1 pm – 2 pm**
Location: **26 Central St, RM 204**
Contact: Pat Maher, APRN BC | 617-591-6105
Patient Engagement & Feedback

Patient Experience Survey
Health Integration Program (HIP)

The HIP team would like to know how you feel about our services so we can improve them. Your responses will not change how we treat you in any way. There are no right or wrong answers. Your feedback will only be used to help CHA provide care that meets your needs.

Please circle your answer

<table>
<thead>
<tr>
<th>Always</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I feel welcomed and comfortable at the Central Street clinic.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel respected and listened to by HIP staff.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel involved in my care and included in making decisions about my treatment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The HIP team does its best to meet my needs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would you suggest HIP to a friend or family member looking for help?</td>
<td>Definitely</td>
<td>Probably</td>
<td>Not sure</td>
<td>Unlikely</td>
</tr>
</tbody>
</table>

What topics would you like to learn more about?

(Place an X next to each)

- Nutrition and healthy eating
- Physical activity
- Getting a good night's sleep
- How to have a healthy heart and prevent strokes
- Diabetes: What it is and how to prevent or treat it
- How to smoke less or quit
- Effects of alcohol and other drugs
- Relaxation techniques (meditation, breathing, etc.)
- Blood pressure: What it means and how to improve
- Managing medications
- Communicating with your health care providers
- OTHERS (please describe here):

How can the HIP team do better? What changes would you like to see?

Patient Advisory Council

What: The Health Integration Program (HIP) welcomes you to join a meeting of our new Patient Advisory Council (PAC). We are starting this group so you have a place to meet with staff and peers to discuss ideas for improving our program services and resources. We always want to improve how we work and what we offer to support your health and recovery.

When: The next PAC meeting will be:

Wednesday, Oct. 26, 2016
10:00-10:50am

Where: Central Street Health Center
26 Central St., Somerville
Room 3A.5 (3rd floor waiting area)

Snacks and drinks will be provided!

Please call Madeline Kidd for more details: 617-591-6097
# Social Support & Connectedness

**The Community Room**

*for Health Integration Program (HIP) members*

<table>
<thead>
<tr>
<th>Drop by to say hello</th>
<th>Have some coffee or snacks</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Stick figures" /></td>
<td><img src="image2.png" alt="Coffee and snacks" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Play games</th>
<th>Make Arts &amp; Crafts</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Games" /></td>
<td><img src="image4.png" alt="Crafts" /></td>
</tr>
</tbody>
</table>

**Wedgesdays from 10:00am – 3:00pm**

26 Central St, 2nd Floor
(Turn left out of stairwell; Right out of elevator)

---

Please join us to celebrate the New Year with lunch and other fun activities!!

**Tuesday, January 10th**
11:30 am - 12:30 pm

26 Central Street, 2nd floor Community Room

*Sponsored by the CHA Health Integration Program (HIP)*
Results & Evaluation

*Please do not circulate:
Data are awaiting publication*
### Improvement Measures

#### Process Measures

1. Annual diabetes screening (A1c or glucose)
2. Annual cholesterol screening (LDL)
3. Diabetes monitoring
4. Obesity screening and follow-up
5. 7-day follow-up after psychiatric hospitalization
6. 30-day follow-up...
7. Coordinated ‘care plans’

#### Outcome Measures:

1. Diabetes control (A1c < 8.0)
2. Blood pressure control (< 140/90)
Process Measures

Diabetes Screening for People with Schizophrenia or Bipolar Disorder Who are Using Antipsychotic Medications

Sandy Cohen

% Annual A1c or Glucose Test

Registry launched in Sept

HM Plan activated

Shift

median: 78.1
goal: 75

generated from ihi.org
Process Measures

Cardiovascular Health Screening for People with Schizophrenia or Bipolar Disorder Who Are Prescribed Antipsychotic Medications

Sandy Cohen

% with Annual LDL-C Screen

Shift

Trend

HM Plan activated

median: 60.36

goal: 50

generated from ihi.org
Diabetes Monitoring for People with Diabetes and Schizophrenia

Process Measures

Sandy Cohen

Trend

Began patient-level outreach

DM Monitoring Complete% goal: 77
median: 74.36

Shift

generated from ihi.org
Process Measures

BMI Screening & Follow-up (for BH Home Target Population)

Sandy Cohen

Shift

Trend

goal: 33
median: 27.93

% BMI Screen & Follow-up


month

generated from ihi.org
Evaluation: 12-Month Outcomes
(In collaboration with Health Equity Research Lab, Cambridge, MA)

<table>
<thead>
<tr>
<th></th>
<th>BHH Participants</th>
<th>CHA Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizophrenia-spectrum</td>
<td>n=369</td>
<td>n=1,331</td>
</tr>
<tr>
<td>Bipolar disorder</td>
<td>n=55</td>
<td>n=614</td>
</tr>
<tr>
<td>TOTAL</td>
<td>N=424</td>
<td>N=1,945</td>
</tr>
</tbody>
</table>

Propensity score matching
– Quasi-experimental method to balance treatment/control groups on observed factors (demographics, health status, insurance)

Outcomes
– Acute care utilization (Inpatient Med/Psych, ED)
– Health screening rates & levels (HbA1c, LDL)
Year 1: Acute Service Utilization

Table 2. Pre-Post Differences for Service Utilization for BHH and non-BHH Patients with Propensity Score Matching

<table>
<thead>
<tr>
<th>Service Utilization</th>
<th>Contrast</th>
<th>Delta SE</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Patients with Any ED Use</td>
<td>0.011</td>
<td>0.033</td>
<td>0.728</td>
</tr>
<tr>
<td>Total ED</td>
<td>-0.428</td>
<td>0.174</td>
<td><strong>0.014</strong></td>
</tr>
<tr>
<td>Avg. ED visits (given any ED)</td>
<td>-0.618</td>
<td>0.221</td>
<td><strong>0.005</strong></td>
</tr>
<tr>
<td>% Patients with Any psychiatric hospitalizations</td>
<td>-0.030</td>
<td>0.021</td>
<td>0.148</td>
</tr>
<tr>
<td>Total psychiatric hospitalizations</td>
<td>-0.125</td>
<td>0.040</td>
<td><strong>0.002</strong></td>
</tr>
<tr>
<td>Avg. psychiatric hospitalizations (given any)</td>
<td>-0.685</td>
<td>0.210</td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>% Patients with Any medical hospitalizations</td>
<td>-0.005</td>
<td>0.025</td>
<td>0.826</td>
</tr>
<tr>
<td>Avg. medical hospitalizations (given any)</td>
<td>-0.292</td>
<td>0.178</td>
<td>0.101</td>
</tr>
<tr>
<td>Total medical hospitalizations</td>
<td>-0.067</td>
<td>0.051</td>
<td>0.182</td>
</tr>
</tbody>
</table>
# Year 1: Health Screenings

**Table 3. Pre-Post Differences for BHH and non-BHH Patients with Propensity Score Matching**

<table>
<thead>
<tr>
<th></th>
<th>Delta SE</th>
<th>non-BHH</th>
<th>BHH</th>
<th>Difference (contrast)</th>
<th>Delta SE</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Screenings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDL Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Pre                                | 0.404    | 0.476   | 0.072
| Post                               | 0.441    | 0.587   | 0.146
|                                    |          | 0.074   | 0.038
| Hemoglobin A1c Test                |          |         |     |                       |          |         |
| Pre                                | 0.400    | 0.493   | 0.093
| Post                               | 0.461    | 0.636   | 0.175
|                                    |          | 0.082   | 0.037
| Glucose Test                       |          |         |     |                       |          |         |
| Pre                                | 0.676    | 0.644   | -0.033
| Post                               | 0.695    | 0.679   | -0.016
|                                    |          | 0.017   | 0.034
| Either HbA1c or Glucose Test       |          |         |     |                       |          |         |
| Pre                                | 0.746    | 0.767   | 0.021
| Post                               | 0.746    | 0.818   | 0.073
|                                    |          | 0.052   | 0.031
| Health measures and lab results    |          |         |     |                       |          |         |
| LDL levels                         |          |         |     |                       |          |         |
| Pre                                | 106.231  | 113.786 | 7.555
| Post                               | 108.178  | 111.444 | 3.267
|                                    |          | 3.286   | 0.192
| Hemoglobin A1c levels              |          |         |     |                       |          |         |
| Pre                                | 6.066    | 5.854   | -0.212
| Post                               | 5.978    | 5.804   | -0.175
|                                    |          | 0.037   | 0.078
| Glucose levels                     |          |         |     |                       |          |         |
| Pre                                | 117.038  | 111.795 | -5.242
| Post                               | 113.189  | 111.123 | -2.066
|                                    |          | 3.176   | 2.905

* *<.10
** **<0.05

DO NOT CIRCULATE – AWAITING PUBLICATION

Health measures and lab results

LDL levels

- Pre: 106.231, Post: 108.178
- Pre Post: -1.947, SE: 3.286, p-value: 0.192

Hemoglobin A1c levels

- Pre: 6.066, Post: 5.978
- Pre Post: -0.088, SE: 0.078, p-value: 0.633

Glucose levels

- Pre: 117.038, Post: 113.189
- Pre Post: -3.849, SE: 2.905, p-value: 0.274
Challenges Faced

- IT tools = major up-front investment
- Shifting psychiatry to population health approach
- Administrative hurdles (e.g. billing, scheduling)
- Data systems & timely access
- P4P metrics not enough to assess effectiveness
- Few validated quality measures for outpatient BH practice & SMI population
Lessons Learned

• People with SMI do want to be healthier! Behavior change is possible, just challenging and slow
• Social connection & support vital to change
• Small discretionary funds go a long way
• Providers more engaged when they have meaningful interventions to offer
• Great opportunity for spread across BH specialists
• Data needs: better measures, faster, claims-based
• Integration is hard – find the bright spots!
THANK YOU!

mtepper@challiance.org
amcohen@challiance.org

http://www.challiance.org/about/behavioral-health-home.aspx