Adapting the Sustainable High-Utilization Team Model in Four Diverse Sites

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Acknowledgements

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- The PICO national network initiated the learning network that laid the foundation for this project
- Technical assistance partners are Rutgers CSHP, CCHP & the Center for Health Care Strategies
- Our clinical partners coordinate care for the patients, collect project data, and provided insights for the analysis
Outline

• Introduction
• The Camden Model
• Intervention adaptation
• Patient characteristics
• Changes in selected outcomes
• Summary, next steps, reflections
Introduction

CMS Innovation Center Health Care Innovation Awards

• “...compelling new ideas to deliver better health, improved care and lower costs to people enrolled in Medicare, Medicaid and Children's Health Insurance Program (CHIP), particularly those with the highest health care needs.” (innovation.cms.gov)

Project Elements

• Camden Coalition of Healthcare Providers high-utilizer care coordination model
• “Adapt” not “replicate”
• Establish a learning network
• Demonstrate effectiveness
• Achieve sustainability
Data & Measures

- Data collected by care management staff at or shortly after each encounter at four sites (11/12 to 9/14) and Camden (11/12 to 5/14)
- N = 1,110 (range 82 to 400 per site)

<table>
<thead>
<tr>
<th>Care management tracking</th>
<th>Baseline</th>
<th>Monthly</th>
<th>Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics &amp; payer</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital admissions &amp; emergency department (ED) visits</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Chronic conditions (CCW)(^1)</td>
<td>X</td>
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<tr>
<td>General health status and unhealthy days</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Social comorbidities</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Patient-centered care coordination (CPCQ)(^2)</td>
<td>X</td>
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<td>X</td>
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</table>

\(^1\) The 27 chronic conditions in the Chronic Conditions Warehouse (www.ccwdata.org/web/guest/home).
The Camden Model

MEDICAL REPORT

THE HOT SPOTTERS

Can we lower medical costs by giving the neediest patients better care?

BY ATUL GAWANDE

If Camden, New Jersey, becomes the first American community to lower its medical costs, it will have a murderer to thank. At nine-fifty on a February night in 2001, a twenty-two-year-old black man was shot while driving his Ford Taurus station wagon through a neighborhood on the edge of the Rutgers University campus. The victim was shot in the leg and the chest, but he survived enough to give the driver’s side, as if the car were a bulletproof vest. A neighborhood cop and a volunteer medic rushed to the scene. They attached a tourni

ken family physician who had grown up in a bedroom suburb of Philadelphia. As a medical student at Robert Wood Johnson Medical School, in Piscataway, he had planned to become a neuroscientist. But he volunteered once a week in a free primary-care clinic for poor immigrants, and he found the work of the paramedic felt

Bratton and the Cops.“ I was a cop, and I had to keep the peace,” he told me. “I was policing that he had cin

eties, which centre crime and focusing res

torts. The reform panel on Police Department

erized crime maps, and beats and shifts to focus

times.

When the police were putting crime maps, Brenner persuaded Camden’s

to let him have access to the

He transfe

CHAPTER 114

AN ACT establishing a Medicaid Accountable Care Organization Demonstration Project, supplementing Title 30 of the Revised Statutes.

BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

Released: 10/20/2014

The Institute of Medicine (IOM) today announced the names of 70 new members during its 44th annual meeting. Election to the IOM is considered one of the highest honors in health and medicine and recognizes individuals who have demonstrated exce

macarthur foundation

MacArthur Fellows Program

Jeffrey Brenner
Primary Care Physician
Founder and Executive Director
Camden Coalition of Healthcare Providers
The Camden Model

Enrollment criteria:
- 2+ admissions in 6 months
- Medical and/or social comorbidities
- Selected exclusions

Team composition:
- Nurse (RN) team leader
- Social worker (SW)
- Licensed practical nurse (LPN)
- Community health workers (CHW)
- AmeriCorps Health Coaches (HC)

¹ As presented to the clinical partners at start of program; model continues to undergo adjustments.
Intervention Adaptation
## Enrollment Criteria

<table>
<thead>
<tr>
<th>Program</th>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camden</td>
<td>2+ admissions in 6 months, with medical and/or social comorbidities</td>
<td>OB, cancer, certain surgeries, chronic conditions w/ limited treatment, mental health as sole Dx, Age &gt;80, receiving care management services elsewhere</td>
</tr>
<tr>
<td>Site 1</td>
<td>2+ admissions in 6 months and 2+ chronic conditions</td>
<td>OB, cancer, maternity, mental/behavioral health as 1° Dx</td>
</tr>
<tr>
<td>Site 2</td>
<td>2+ admissions in 6 months or 3+ in a year, Medicaid/ Medicare/ uninsured</td>
<td>OB, terminal cancer</td>
</tr>
<tr>
<td>Site 3</td>
<td>3+ visits in 6 months (inpatient or ED)</td>
<td>OB, cancer, HIV, personality disorder or substance abuse as 1° Dx, certain surgeries, diminished capacity, violent/sex offenses</td>
</tr>
<tr>
<td>Site 4</td>
<td>2+ admissions in 6 months (but allowing exceptions if multiple ED visits + chronic diseases + meds)</td>
<td>Behavioral health as 1° Dx, terminally ill</td>
</tr>
</tbody>
</table>
Days from Enrollment to Exit

- **Graduated**
- **Exited without graduating**

<table>
<thead>
<tr>
<th>Site</th>
<th>Graduated</th>
<th>Exited without graduating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
<td>186</td>
<td>83</td>
</tr>
<tr>
<td>Site 2</td>
<td>206</td>
<td>135</td>
</tr>
<tr>
<td>Site 3</td>
<td>71</td>
<td>45</td>
</tr>
<tr>
<td>Site 4</td>
<td>251</td>
<td>200</td>
</tr>
<tr>
<td>Camden</td>
<td>96</td>
<td>64</td>
</tr>
</tbody>
</table>
Days from Enrollment to Exit

Program timeline: Entry and exit dates of enrolled patients

Camden
Days from Enrollment to Exit

Site 2

Program timeline: Entry and exit dates of enrolled patients
Days from Enrollment to Exit

Site 3

Program timeline: Entry and exit dates of enrolled patients
Staff Contacts Per Patient-Month, by Mode

Notes: Total staff contacts (in-person, telephone, etc.) with or without patient present per 30 days of enrollment; excluding patients in intervention for <30 days.
Patient Characteristics at Enrollment
Inpatient Stays & ED Visits 6 mo. Before Enrollment

- Site 1
- Site 2
- Site 3
- Site 4
- Camden

# Inpatient stays in 6 months (mean)

# ED visits (mean)
Age at Enrollment

Site 1
Median=56
Std dev=13.6
N=82

Site 2
Median=55
Std dev=11.3
N=231

Site 3
Median=43
Std dev=14.0
N=400

Site 4
Median=59
Std dev=14.6
N=113

Camden
Median=57
Std dev=13.2
N=284
# Patient Demographics

<table>
<thead>
<tr>
<th></th>
<th>Site 1</th>
<th>Site 2</th>
<th>Site 3</th>
<th>Site 4</th>
<th>Camden</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (std dev)</td>
<td>56.3 (13.6)</td>
<td>55.7 (11.3)</td>
<td>43.3 (14.0)</td>
<td>60.7 (14.6)</td>
<td>56.7 (13.2)</td>
</tr>
<tr>
<td><strong>Race &amp; Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Hispanic</td>
<td>41.5</td>
<td>1.7</td>
<td>31.5</td>
<td>22.1</td>
<td>41.9</td>
</tr>
<tr>
<td>% Non-Hisp black</td>
<td>15.9</td>
<td>71.4</td>
<td>30.7</td>
<td>37.2</td>
<td>47.5</td>
</tr>
<tr>
<td>% Non-Hisp white</td>
<td>35.4</td>
<td>25.1</td>
<td>27.8</td>
<td>27.4</td>
<td>8.5</td>
</tr>
<tr>
<td>% Other / unknown</td>
<td>7.2</td>
<td>1.8</td>
<td>10.0</td>
<td>13.3</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Female</td>
<td>45.1</td>
<td>50.2</td>
<td>70.8</td>
<td>54.0</td>
<td>48.6</td>
</tr>
</tbody>
</table>
Coverage Status, by Site

<table>
<thead>
<tr>
<th>Site</th>
<th>Other</th>
<th>Traditional Medicare</th>
<th>Medicare Advantage</th>
<th>Medicaid</th>
<th>Dual Medicaid + Medicare</th>
<th>Uninsured</th>
<th>Uninsured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
<td>6%</td>
<td>22%</td>
<td>10%</td>
<td>38%</td>
<td>18%</td>
<td>6%</td>
<td>12%</td>
</tr>
<tr>
<td>Site 2</td>
<td>1%</td>
<td>16%</td>
<td>4%</td>
<td>42%</td>
<td>4%</td>
<td>1%</td>
<td>22%</td>
</tr>
<tr>
<td>Site 3</td>
<td>4%</td>
<td>42%</td>
<td>7%</td>
<td>42%</td>
<td>4%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Site 4</td>
<td>5%</td>
<td>11%</td>
<td>4%</td>
<td>38%</td>
<td>22%</td>
<td>19%</td>
<td>16%</td>
</tr>
<tr>
<td>Camden</td>
<td>5%</td>
<td>19%</td>
<td>1%</td>
<td>46%</td>
<td>29%</td>
<td>1%</td>
<td>3%</td>
</tr>
</tbody>
</table>

All Medicare, including traditional Medicare and Medicare Advantage
Number of Chronic Conditions

Site 1: 5
Site 2: 3
Site 3: 4
Site 4: 6
Camden: 5
Top 10 Chronic Conditions, by Site

1. Hypertension
2. Diabetes
3. Depression
4. Asthma
5. Hyperlipidemia
6. Heart failure
7. COPD
8. Chronic kidney disease
9. Arthritis
10. Stroke

Site 1:

- 1. Hypertension: 47%
- 2. Diabetes: 61%
- 3. Depression: 42%
- 4. Asthma: 30%
- 5. Hyperlipidemia: 29%
- 6. Heart failure: 22%
- 7. COPD: 18%
- 8. Chronic kidney disease: 14%
- 9. Arthritis: 3%
- 10. Stroke: 2%

Site 2:

- 1. Hypertension: 50%
- 2. Diabetes: 79%
- 3. Depression: 15%
- 4. Asthma: 19%
- 5. Hyperlipidemia: 23%
- 6. Heart failure: 21%
- 7. COPD: 30%
- 8. Chronic kidney disease: 14%
- 9. Arthritis: 10%
- 10. Stroke: 4%

Site 3:

- 1. Hypertension: 28%
- 2. Diabetes: 50%
- 3. Depression: 42%
- 4. Asthma: 24%
- 5. Hyperlipidemia: 20%
- 6. Heart failure: 7%
- 7. COPD: 11%
- 8. Chronic kidney disease: 5%
- 9. Arthritis: 14%
- 10. Stroke: 2%

Site 4:

- 1. Hypertension: 53%
- 2. Diabetes: 71%
- 3. Depression: 31%
- 4. Asthma: 65%
- 5. Hyperlipidemia: 36%
- 6. Heart failure: 28%
- 7. COPD: 20%
- 8. Chronic kidney disease: 22%
- 9. Arthritis: 31%
- 10. Stroke: 31%

CCHP:

- 1. Hypertension: 57%
- 2. Diabetes: 57%
- 3. Depression: 42%
- 4. Asthma: 46%
- 5. Hyperlipidemia: 32%
- 6. Heart failure: 23%
- 7. COPD: 24%
- 8. Chronic kidney disease: 18%
- 9. Arthritis: 18%
- 10. Stroke: 20%
Mobility Difficulty at Enrollment

- Site 1: 10% Other Difficulty, 33% Help from Equipment, 4% Help from Person, 37% Bed Bound
- Site 2: 20% Other Difficulty, 32% Help from Equipment, 3% Help from Person, 34% Bed Bound
- Site 3: 8% Other Difficulty, 25% Help from Equipment, 4% Help from Person, 3% Bed Bound
- Site 4: 20% Other Difficulty, 19% Help from Equipment, 3% Help from Person, 50% Bed Bound
- Camden: 17% Other Difficulty, 48% Help from Equipment, 4% Help from Person, 13% Bed Bound
Housing Difficulty at Enrollment

- Site 1: 20% (With friends/relative), 9% (Shelter/boarding home), 1% (Street)
- Site 2: 10% (With friends/relative), 1% (Shelter/boarding home), 2% (Street)
- Site 3: 5% (With friends/relative), 4% (Shelter/boarding home), 2% (Street)
- Site 4: 4% (With friends/relative), 4% (Shelter/boarding home), 2% (Street)
- Camden: 16% (With friends/relative), 4% (Shelter/boarding home), 4% (Street)
Social Support Available at Enrollment

Site 1  Site 2  Site 3  Site 4  Camden

% Patients

- Sometimes
- Rarely
- Never

Site 1:
- Sometimes: 21%
- Rarely: 11%
- Never: 10%

Site 2:
- Sometimes: 23%
- Rarely: 12%
- Never: 18%

Site 3:
- Sometimes: 14%
- Rarely: 6%
- Never: 12%

Site 4:
- Sometimes: 22%
- Rarely: 4%
- Never: 4%

Camden:
- Sometimes: 18%
- Rarely: 10%
- Never: 20%
Changes in Selected Outcomes
Days (in Prior 30) Feeling Physical Unhealthy

- **Site 1**: At enrollment: 23.1, Last assessment: 17.5
- **Site 2**: At enrollment: 15.9, Last assessment: 11.4
- **Site 3**: At enrollment: 19.2, Last assessment: 11.9
- **Site 4**: At enrollment: 16.9, Last assessment: 13.1
- **Camden**: At enrollment: 16.1, Last assessment: 10.7
Days (in Prior 30) Feeling Mentally Unhealthy

- Site 1: 14.5 (At enrollment), 13.8 (Last assessment)
- Site 2: 13.5 (At enrollment), 9.1 (Last assessment)
- Site 3: 13.0 (At enrollment), 9.4 (Last assessment)
- Site 4: 11.6 (At enrollment), 9.4 (Last assessment)
- Camden: 16.1 (At enrollment), 10.7 (Last assessment)
General Health Rating, % Fair or Poor

Site 1
- Enroll: 37%
- Last: 54%

Site 2
- Enroll: 54%
- Last: 39%

Site 3
- Enroll: 44%
- Last: 40%

Site 4
- Enroll: 48%
- Last: 48%

Camden
- Enroll: 48%
- Last: 41%
Patient Perceived Care Coordination (CPCQ)

*Graduates Only*

![Graph showing patient perceived care coordination metrics for Site 3 and Camden.](image)

- **Acceptability of Overall Care**
  - Site 3: 66 at enrollment, 76 at graduation
  - Camden: 65 at enrollment, 76 at graduation

- **Timeliness & Consistency of Care Received**
  - Site 3: 88 at enrollment, 80 at graduation
  - Camden: 85 at enrollment, 80 at graduation

Note: Sites with >20% missing data are not shown.
Summary

• Unhealthy population, high hospital use, substantial social challenges
• Variations across sites
  – Enrollment criteria
  – Patient characteristics
  – Intervention duration and intensity
• Outcome indicators trend toward improvement
  – Cannot rule out regression to the mean
  – Some variability across sites
Reflections

• Camden model not protocolized when project began
  – Has evolved a great deal
  – Presently undergoing a randomized clinical trial

• Variations in adaptation driven by
  – Environment (e.g., Medicaid program difference)
  – Organizational context (e.g., for-profit, FQHC, hospital)
  – Leadership
Next Steps

• Intervention continues through June 2015
• Evaluation and documentation
  – Continue to collect intervention data
  – Document patient and staff stories
  – Benchmark hospital use and costs for all payers over time
  – Evaluate process and Medicare use and cost (Mathematica)
• Sustainability planning
  – Philanthropic support
  – Medicaid MCO contracting
  – Institutional support
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