Healthcare Hotspotting: Delivering Better Care to the Most Complex Patients

Jeffrey Brenner, MD
Executive Director

What do these patients have in common?

• Homeless patient in Trenton, NJ with 450 visits in a year
• Dialysis patient in Allentown, PA with $1 million in inpatient costs
• Frequently hospitalized wheelchair bound patient in San Diego, CA
• Middle class patient in South Eastern, PA with 147 CT scans
• Ventilator-assisted patient in Camden with $745,000 in charges
• Dialysis patient with $2 million in inpatient costs found by a group of student hotspotters
Outlier patients in the long tail of data

Who are patients with ‘super-utilization’?
• Homeless?
• Mentally ill?
• Addicted?
• Complex co-morbidity?
• Medication confusion?
• Transportation barriers?
Patient Case Presentation #1

55-yo Male, admitted for GI bleed and SOB (November 2011)
Dual coverage, Lives alone in high-rise apartment
6 months- 9 ED visits, 6 Inpt visits
12 Medications daily

www.camdenhealth.org
Patient Centered Care Coordination

www.camdenhealth.org
Patient Case Presentation #2

52-yo Female, Spanish-speaking, admitted for SOB
Lives with family
6 months- 6 inpatient visits
Ventilator dependent and has tracheosotomy
Severe COPD
Overview of CCHP

- 70 full-time staff, $8 million annual budget
- Mix of foundation & federal grants, technical-assistance & care-coordination contracts, & hospital support
- Membership organization with twenty-member board; incorporated non-profit

SENATE, No. 2443

STATE OF NEW JERSEY

214th LEGISLATURE

INTRODUCED DECEMBER 6, 2010

Sponsored by:
Senator JOSEPH F. VITALE
District 19 (Middlesex)

SYNOPSIS
Establishes Medicaid Accountable Care Organization Demonstration Project in DHS.

CURRENT VERSION OF TEXT
As introduced.
Camden Coalition of Healthcare Providers

Health Information Exchange

High Utilizer Outreach Team

Primary Care Redesign

Citywide Membership Non-profit

Advocacy and Policy Change

Cross-Site Learning and Workforce Development

Research and Performance Improvement

Camden Health Data
2002 – 2011 with Lourdes, Cooper, Virtua data
- 500,000+ records with 98,000 patients
- 50 % population use ER/hospital in one year

50% of population use the ER/hospital in one year
Camden Health Data
Leading ED/hospital utilizers citywide
- 324 visits in 5 years
- 113 visits in 1 year

Cost Breakdown in Camden
Total revenue to hospitals for Camden residents
$108 million per year
- Most expensive patient $3.5 million
- 30% hospital receipts = 1% patients
- 80% hospital receipts = 13% patients
- 90% hospital receipts = 20% patients
### Potentially Avoidable Hospitalizations

**Primary ED Diagnosis, 2011**

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Patients</th>
<th>Visits</th>
<th>% of Visits</th>
<th>Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper respiratory infections (head colds)</td>
<td>4,092</td>
<td>4,858</td>
<td>16.3%</td>
<td>$1,456,464</td>
</tr>
<tr>
<td>Sprains and strains</td>
<td>2,980</td>
<td>3,295</td>
<td>11.1%</td>
<td>$1,159,452</td>
</tr>
<tr>
<td>Contusions</td>
<td>2,561</td>
<td>2,786</td>
<td>9.4%</td>
<td>$837,132</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>1,986</td>
<td>2,318</td>
<td>7.8%</td>
<td>$926,239</td>
</tr>
<tr>
<td>Skin and subcutaneous tissue infections</td>
<td>1,717</td>
<td>2,213</td>
<td>7.4%</td>
<td>$673,115</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>1,892</td>
<td>2,182</td>
<td>7.3%</td>
<td>$720,050</td>
</tr>
<tr>
<td>Back pain</td>
<td>1,484</td>
<td>1,735</td>
<td>5.8%</td>
<td>$517,997</td>
</tr>
<tr>
<td>Asthma</td>
<td>1,058</td>
<td>1,580</td>
<td>5.3%</td>
<td>$675,230</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>65,992</strong></td>
<td></td>
<td></td>
<td><strong>$29 million</strong></td>
</tr>
</tbody>
</table>

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**Camden Hospital Utilization 2011 Snapshot**

- **Potentially Avoidable Hospitalizations**
  - **Northgate II**
    - 3,001 visits
    - 615 patients
    - $83 million in charges
    - ($21,000 per visit)
    - 15% collection rate
  - **Abigail House**
    - 1,410 visits
    - 332 patients
    - $92 million in charges
    - ($65,000 per visit)
    - 16% collection rate

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**Healthcare Cost Hotspots in Camden, NJ (Jan 2002-June 2008)**

- **Receipts**: 37%
- **Visits**: 27%
- **Patients**: 18%
- **Area**: 10%
- **Blocks**: 6%

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Source: Cooper, Jacobi, and Virtua Hospital and ER billing data
Jan 2002-June 2008

Camden Coalition of Healthcare Providers
CamConnect.org
## Utilization typology

<table>
<thead>
<tr>
<th>ED visits, 2011</th>
<th>Inpatient visits, 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>26,128</td>
</tr>
<tr>
<td>2 to 3</td>
<td>13,390</td>
</tr>
<tr>
<td>4 to 5</td>
<td>3,216</td>
</tr>
<tr>
<td>6 to 7</td>
<td>1,020</td>
</tr>
<tr>
<td>8 to 9</td>
<td>386</td>
</tr>
<tr>
<td>10+</td>
<td>339</td>
</tr>
</tbody>
</table>

## Overlap in Police and Hospital Data

- **Arrest Data**
  - 330 overdose data
  - 45 overdoses w/ police encounters (0.2%)
  - 5 overdosed patients w/ police encounters (0.4%)

- **Hospital Data**
  - 1,400 patients w/ police encounters (100%)
  - 20 overdosed patients (1.4%)
  - ~5 overdosed patients (0.4%)
  - 300 patients (2.2%)
  - 1,400 patients (100%)

- **Total**
  - 1,400 patients w/ police encounters
  - 330 overdose data
Distribution of Police Encounters

- 61% of individuals are involved in 28% of police encounters in the Camden "Police Encounter" scenario.
ED visits versus Police Encounters

Cross-Sector High Utilizers

205 individuals were identified to be cross sector high utilizers (10+ ED visits & 6+ police encounters).
Case Study of Cross-Sector HU

Anonymized Household Case Study
Triage

Bedside Engagement
Initial Care Planning

Questions for My Care Team:
- Birth certificate
- Social Security card
- Non-drugers N.J. I.D.
- Housing
- Schooling
- Employment
- Addictions
- Support
- Medication support
- Transportation
- Phone Communication
- Clothing
- Food - Welfare

Home Visit

Enrollment
Domains of Care Planning

- Addiction
- Advocacy & Activism
- Benefits & Entitlements
- Education and Employment Connection
- Family, Personal, Peer Support
- Food and Nutrition Support
- Health Maintenance, Management, and Promotion
- Housing & Environment
- ID Support
- Legal Assistance
- Medication and Medical Supplies
- Mental Health Support
- Provider Relationship Building
- Transportation Support
- Patient-Specific Wildcard

Home Visit

Home-based Medication Reconciliation
Dash-boarding & Score-carding

Accompaniment

Days To First Primary Care Visit

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days</td>
<td>50</td>
<td>45</td>
<td>40</td>
</tr>
</tbody>
</table>
Clinical Redesign Activities
Seven Day Pledge

ASK YOUR DOCTOR FOR A 7 DAY APPOINTMENT.
CAMDEN COALITION OF HEALTHCARE PROVIDERS
AND NICHOLSON FOUNDATION COLLABORATION

7 DAY PLEDGE
Seeing your primary care provider within 7 days of hospital discharge can help with:

- Answering any questions about your new medications or health conditions
- Getting additional services you need to stay healthy

AND

- Preventing you from going back to the hospital

Seeing your doctor is an important part of recovery! The next time you leave the hospital, make sure to ask your primary care provider for an appointment within 7 days.

ASK YOUR DOCTOR ABOUT THE 7 DAY PLEDGE.

Clinical Redesign Activities
Seven Day Pledge

7-DAY PLEDGE
An initiative to reduce hospital readmissions.
ACO Provider Dinners
Clinical Redesign Activities
Seven Day Pledge

ACO Incentive Plan

• Practice incentive
  • $150 payment for each 30 minute post-hospital follow-up PCP visit within 7 days of discharge
  • $100 payment for each 30 minute post-hospital follow-up PCP visit within 14 days of discharge

• Patient incentive
  • Cab voucher to and from post-hospital follow-up PCP visits for patients (given at hospital bedside)
  • $20 Visa gift card for patients upon completion of post-hospital follow-up PCP visit (if within 14 days)

• Other incentives
  • Patient satisfaction surveys $500
  • 2 practice work sessions $1,000
  • 4 quality improvement dinners (provider/staff incentivized)
  • Approved QI plan $2,500
Percentage of patients reconnecting with primary care within 7 days of discharge

- November 2014: 26%
- August 2015: 42%

Percentage of patients reconnecting with primary care within 14 days of discharge

- November 2014: 35%
- August 2015: 52%
Percentage of patients reconnecting with primary care within 30 days of discharge

38%  NOV 2014  58%  AUG 2015

Dollars Earned from 7-14 day visits
Total enhanced payments earned in 2015: $129,450

$22,000  JAN 2015  AUG 2015
Additional Minutes Spent with Patients
Total additional time spent with patients in 2015: **10,620 minutes**

Why is saving money so hard in healthcare?
Why do we spend so much?
Research Article

Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults

The Adverse Childhood Experiences (ACE) Study

Vincent J. Felitti, MD, FACP, Robert F. Anda, MD, MS, Dale Nordenberg, MD, David F. Williamson, MS, PhD, Alison M. Spitz, MS, MPH, Valerie Edwards, BA, Mary P. Koss, PhD, James S. Marks, MD, MPH
Effective vs Efficient
Fountain of Youth Discovered in Doylestown, PA

Effect of a Community-Based Nursing Intervention on Mortality in Chronically Ill Older Adults: A Randomized Controlled Trial

Kenneth D. Coburn*, Sherry Marcantonio, Robert Lazansky, Maryellen Keller, Nancy Davis
Health Quality Partners, Doylestown, Pennsylvania, United States of America

- 1,700 adults over 65 over 10 years
- Randomized study run by Mathematica begun in 2002
- Part of a Medicare Coordinated Care Demonstration Project
- 25% lower relative risk of death (9.9% vs 12.9%)
- Highest risk patients 48% reduction in death rates
- 33% reduction in hospitalization
- 22% reduction in total cost to Medicare