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Using a Health Information Exchange to Improve Medication Reconciliation

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Using a Health Information Exchange to Improve Medication Reconciliation

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SCHOOL OF POPULATION HEALTH
MS-HQS
AUGUST 30, 2012
Camden Coalition of Healthcare Providers

- Founded in 2002
- Non-profit, grant funded
- Mission: To improve the health status of all Camden residents by increasing the capacity, quality and access to care in the city
The Problem

Reconciling medications across care transitions

Medication Reconciliation

“...the process of identifying the most accurate list of all medications a patient is taking—including name, dosage, frequency and route—and using this list to provide correct medications for patients anywhere within the healthcare system” (IHI 2012)
The Reality
The Cost

Medications removed from home (in yellow bag):

- Naproxen
- Amlodipine (2)
- Lonazepam
- Advair (2)
- Saxagliptin
- Dexamethasone
- Clonazepam
- Ibuprofen
- Sitagliptin (2)
- Quetiapine
- Paroxetine
- Neurontin
The Solution
Health Information Exchanges

“for information to follow patients, wherever and whenever they seek care, in a private and secure manner so that teams of doctors, nurses, and care managers can provide coordinated, effective and efficient care.”

HIE Growth

- 52 HIEs in 2009
- 161 HIEs in 2010
Project Aim

Improve the medication reconciliation process during transitions in care for Camden city patients at risk for hospital readmission through the use of a health information exchange.

Project Goal: 100% reconciliation
Camden, New Jersey
Camden Health Information Exchange (HIE)

- 95% of Camden residents
- Data from 3 hospitals
  - ADT transactions
  - Lab results
  - Radiology results
  - Discharge summaries
- 120+ HIE users
Project Team

- Sandi Selzer, PM
- Ken Gross, PhD, Research/Eval
- Jason Turi, RN, Care Transitions
- Hilda Mateo, LPN, Care Transitions
Project Methodology

**Plan:** Recognize an opportunity and plan a change;

**Do:** Carry out a small scale study to test the change;

**Study:** Review the test, analyze the results, and identify learnings;

**Act:** Take action based on learnings. If the change did not work, go through the cycle again with a different intervention. If the change was successful, incorporate that learning on a broader scale, and begin the cycle again to sustain the improvement (Tague 2004).
Patient Population: “Transitional Utilizers”

- 2+ hospital admission in past 6 months
- 2+ chronic conditions
- 5+ medications
- Language barrier or low health literacy level
- Lack of family or community support
### Patient Sample

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td><strong>Number of patients</strong></td>
<td>11 transitional utilizers</td>
</tr>
<tr>
<td><strong>Mean age of patient sample</strong></td>
<td>52</td>
</tr>
<tr>
<td><strong>Mean number of providers per patient</strong></td>
<td>7</td>
</tr>
<tr>
<td><strong>Mean # of chronic conditions per patient</strong></td>
<td>8</td>
</tr>
<tr>
<td><strong>Most common chronic conditions</strong></td>
<td>Hypertension (12%) Anxiety/depression (12%) Heart disease (12%) Diabetes (11%) High cholesterol (11%) Asthma/COPD (9%)</td>
</tr>
</tbody>
</table>
PDSA #1: Original Med Rec Process

ADMISSION DATE: 02/13/2012

DISCHARGE DATE: 02/16/2012

PRIMARY CARE PHYSICIAN: [Redacted]

PRINCIPAL DIAGNOSIS AT DISCHARGE: Bronchitis.

OTHER IMPORTANT DISCHARGE DIAGNOSES:
1. End-stage renal disease on hemodialysis.
2. Diabetes mellitus.
3. Hypertension.

CONDITION ON DISCHARGE: Ambulatory.

DISPOSITION: The patient discharged to home.

DISCHARGE MEDICATIONS:
1. Aspirin 81 mg.
2. Carvedilol 12.5 mg.
3. Cinacalcet 30 mg.
4. Folic acid.
5. Vitamin B complex.
6. Furosemide 40 mg tablet.
7. Hydralazine 25 mg tablet.
8. Lisinopril 10 mg tablet.
9. Sevelamer 800 mg oral tablet.
10. Simvastatin 20 mg oral tablet.
11. Tamsulosin 0.4 mg oral capsule.
12. Tramadol 50 mg oral tablet.
13. Tylenol 325 mg oral tablet.
14. Levofloxacin 250 mg

FOLLOWUP PLAN: The patient to follow up with primary care physician in 1-2 weeks following discharge.

CHIEF COMPLAINT: Fever and cough.
### The Change: New Med Rec Form

| Patient Name ___________________________ | DOB: ___________________
|-----------------------------------------|-------------------------|

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</tbody>
</table>

- Are you careless at times about taking your medications? Y N S
- When you feel better do you sometimes stop taking your medications? Y N S
- Sometimes when you feel sick, do you stop taking this medicine? Y N S
- Do you ever miss taking your medication? Y N S
PDSA #1 Results

Patient Medications: Discharge to Home

Source of Medication List

<table>
<thead>
<tr>
<th>Source of Medication List</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Summary</td>
<td>14</td>
<td>17</td>
<td>24</td>
<td>15</td>
<td>22</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>Home Post-Discharge</td>
<td>14</td>
<td>23</td>
<td>26</td>
<td>35</td>
<td>22</td>
<td>14</td>
<td>12</td>
<td>14</td>
<td>18</td>
<td>16</td>
<td>13</td>
</tr>
</tbody>
</table>
### Medication List

<table>
<thead>
<tr>
<th>MEDICATION</th>
<th>SIG</th>
<th>START DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carvedilol 25 mg [tablet]</td>
<td>1 tab(s) PO BID</td>
<td>06/05/2012</td>
</tr>
<tr>
<td>[Substitutions Permitted]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renagel 800 mg [tablet]</td>
<td>2 tab(s) PO TID</td>
<td>06/05/2012</td>
</tr>
<tr>
<td>[Substitutions Permitted]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loperamide 2 mg [capsule]</td>
<td>1 cap(s) PO Q4H</td>
<td>06/05/2012</td>
</tr>
<tr>
<td>[Substitutions Permitted]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simvastatin 20 mg [tablet]</td>
<td>1 tab(s) PO once a day (at bedtime)</td>
<td>06/05/2012</td>
</tr>
<tr>
<td>[Substitutions Permitted]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HydrALAZINE 25 mg [tablet]</td>
<td>1 tab(s) PO TID</td>
<td>06/05/2012</td>
</tr>
<tr>
<td>[Substitutions Permitted]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flomax 0.4 mg [capsule]</td>
<td>1 cap(s) PO once a day</td>
<td>06/05/2012</td>
</tr>
<tr>
<td>[Substitutions Permitted]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lasix 80 mg [tablet]</td>
<td>1 tab(s) PO QAM</td>
<td>06/05/2012</td>
</tr>
<tr>
<td>[Substitutions Permitted]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lisinopril 20 mg [tablet]</td>
<td>1 tab(s) PO once a day</td>
<td>06/05/2012</td>
</tr>
<tr>
<td>[Substitutions Permitted]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nephrocaps Vitamin B Complex with C and Folic Acid [capsule]</td>
<td>1 cap(s) PO once a day</td>
<td>06/05/2012</td>
</tr>
</tbody>
</table>
PDSA #2 Results

Medication Lists Across Care Settings

- Discharge Summary
- Home Post-Discharge
- HIE-Current
- Home-Current

Patients

# Medications
Limitations

- Care Transitions Program
- HIE Infancy
- Discharge Summaries
- Data Exchange
Next Steps

- **PDSA #3**
  - Communications (newsletters, monthly meetings, etc.)
  - EMR flags
- **Technical**
  - Tablets for Care Transitions Team
  - CCD exchange across providers
- **Adaptive**
  - Provider education on HIE and medication reconciliation
  - Workflow improvements
Thank you!

Questions?