Using Integrated Claims & EHR Data to Improve Patient Care and Financial Performance:

Atrius Health Pioneer ACO Case Study

November 13, 2014
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Dr. Joe Kimura – Deputy Chief Medical Officer
Disclosures

Individuals need to disclose relationships with a commercial interest if both (a) the relationship is financial and occurred within the past 12 months and (b) the individual has the opportunity to affect the content of CME about the products or services of that commercial interest.

*Accreditation Council for Continuing Medical Education (ACCME)*

**No disclosures**
Putting Off Care Because of Cost

Percent who say they or another family member living in their household have done each of the following in the past 12 months because of the cost:

- Relied on home remedies or over-the-counter drugs instead of going to see a doctor: 33%
- Skipped dental care or checkups: 31%
- Put off or postponed getting health care needed: 28%
- Not filled a prescription for a medicine: 25%
- Skipped a recommended medical test or treatment: 21%
- Cut pills in half or skipped doses of medicine: 17%
- Had problems getting mental health care: 11%

‘Yes’ to any of the above: 50%

Source: Kaiser Family Foundation Health Tracking Poll (conducted August 10-15, 2011).
Atrius Health

Non-profit alliance of six leading independent medical groups in Eastern and Central Massachusetts and home health agency and hospice

- Granite Medical Group
- Dedham Medical Associates
- Harvard Vanguard Medical Associates
- Reliant Medical Group
- Southboro Medical Group
- South Shore Medical Center
- VNA Care Network & Hospice

Providing care for ~1,000,000 adult and pediatric patients with 1000 physicians, 2100 other healthcare professionals across 35 specialties

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Atrius Health Core Competencies

• Uniform 100% adoption of Electronic Medical Record

• Enterprise Data Warehouse integrates electronic health record data with multi-payer claims data into single platform

• Widespread Population Management tools including disease-based and risk-based rosters

• Long history with and majority of revenue under Global Payment across commercial and public payers

• Sophisticated reporting and management of Quality and Performance Measures

• Patient-Centered Medical Home foundation, NCQA Level III

• Newest Addition: home health and hospice care
ROLE OF ANALYTICS IN ACCOUNTABLE CARE
Accountability for Value

FINANCIAL
CLINICAL
SERVICE
OPERATIONS

CLINICAL
Quality & Patient Safety

FINANCIAL
Medical Expenses & Cost of Care

SERVICE
Patient Experience

OPERATIONS
Practice Management

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Healthcare Analytics as a Core Competence

• No blueprint for the ideal delivery system

• Delivery systems must innovate, adapt, and improve – leveraging data informed decision making as reimbursement levels drop

• Continuous improvement = Learning

• Value Based Analytics combine data from Cost, Quality, and Patient Experience with Operations.

• Data analytics have become a core competence of any delivery systems striving to be an adaptive learning organization
Accountable Care = Population Management

- What is the target population?
  - How is the cohort defined?
  - How is accountability defined?
- What population outcomes do we want & how are they measured?
  - What conceptual framework links potential care processes to target outcomes?
  - What are the overall KPIs? What are interim clinical and operational process KPIs?
- How do we support the key processes required to achieve outcomes?
  - Which of these processes are most effective, efficient, and patient centered?
  - What infrastructure is required to ensure reliable frontline process execution?
CHALLENGES OF EMR AND CLAIMS DATA
All models are wrong, some are useful...

George E.P. Box (1919-2013)
Challenges of EMR and Claims Data
Unique Case Definitions Needs for Each Condition

**Diabetes**
- EPIC + Claims Combined: 14,751
- Claims: 15,373
- Claims ONLY: 622

**Congestive Heart Failure**
- EPIC + Claims Combined: 2,182
- Claims: 3,618
- Claims ONLY: 1,436

**Definition:**
1. Primary Diag in 3+ claims in 12m, or
2. Current Active Problem List, or
3. EMR Encounter Diag x 2 in 12m

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## Different Diagnosis Prevalence in Each Dataset

<table>
<thead>
<tr>
<th>ACC</th>
<th>Label</th>
<th>BOTH</th>
<th>CLAIMS only</th>
<th>EMR only</th>
<th>% in overlap</th>
<th>Claim to EMR ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC005</td>
<td>ACC-NU: Nutritional and Metabolic</td>
<td>23,816</td>
<td>1,363</td>
<td>11,559</td>
<td>65%</td>
<td>0.12</td>
</tr>
<tr>
<td>ACC012</td>
<td>ACC-PS: Psychiatric</td>
<td>7,788</td>
<td>1,004</td>
<td>5,131</td>
<td>56%</td>
<td>0.20</td>
</tr>
<tr>
<td>ACC016</td>
<td>ACC-HR: Cardiovascular</td>
<td>21,583</td>
<td>1,046</td>
<td>4,802</td>
<td>79%</td>
<td>0.22</td>
</tr>
<tr>
<td>ACC013</td>
<td>ACC-DD: Developmental Disability</td>
<td>1,387</td>
<td>271</td>
<td>1,153</td>
<td>49%</td>
<td>0.24</td>
</tr>
<tr>
<td>ACC011</td>
<td>ACC-SA: Substance Abuse</td>
<td>2,327</td>
<td>338</td>
<td>1,434</td>
<td>57%</td>
<td>0.24</td>
</tr>
<tr>
<td>ACC004</td>
<td>ACC-DM: Diabetes</td>
<td>6,994</td>
<td>242</td>
<td>1,003</td>
<td>85%</td>
<td>0.24</td>
</tr>
<tr>
<td>ACC026</td>
<td>ACC-IJ: Injury, Poisoning</td>
<td>8,086</td>
<td>2,584</td>
<td>3,382</td>
<td>58%</td>
<td>0.76</td>
</tr>
<tr>
<td>ACC028</td>
<td>ACC-NN: Neonates</td>
<td>364</td>
<td>117</td>
<td>94</td>
<td>63%</td>
<td>1.24</td>
</tr>
<tr>
<td>ACC020</td>
<td>ACC-EY: Ophthalmic</td>
<td>19,060</td>
<td>5,913</td>
<td>4,324</td>
<td>65%</td>
<td>1.37</td>
</tr>
<tr>
<td>ACC010</td>
<td>ACC-CG: Cognitive Disorders</td>
<td>1,144</td>
<td>860</td>
<td>400</td>
<td>48%</td>
<td>2.15</td>
</tr>
<tr>
<td>ACC031</td>
<td>ACC-CM: Complications of Care</td>
<td>410</td>
<td>1,262</td>
<td>385</td>
<td>20%</td>
<td>3.28</td>
</tr>
<tr>
<td>ACC015</td>
<td>ACC-AR: Cardio-Respiratory Arrest</td>
<td>181</td>
<td>781</td>
<td>92</td>
<td>17%</td>
<td>8.49</td>
</tr>
</tbody>
</table>
TRANSLATION OF DATA INTO ACTION AND LEARNING
Analytics as a Means to an End

Business Information Life Cycle

Garbage In Garbage Out

No Action

No Outcomes

Minimal Learning

Technical Data Life Cycle

Data Capture → Data Integration → Data Analysis → Data Reporting → Data Use

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Distinct “Markets” of Analytic Users

- Executives
- Directors & Chiefs
- Frontline Clinicians
- Patients & Community

- Action is determined by the target end user of the analytics
- Actionable analytics/reporting defined by expected actions & workflow
  - Distinct “markets” of users within delivery system
Executive & Management Dashboard of TME

Total Medical Expense Dashboard as of 03/2014
(All Points Represent a 12 Month Rolling Summary)

<table>
<thead>
<tr>
<th>Total</th>
<th>PMPM</th>
<th>2% (Year/Year)</th>
<th>2, Member Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital</td>
<td>Extended Care Facility</td>
<td>Observations</td>
<td>Emergency Department</td>
</tr>
<tr>
<td>PMPM</td>
<td>PMPM</td>
<td>PMPM</td>
<td>PMPM</td>
</tr>
<tr>
<td>-3.0% (Year/Year)</td>
<td>-7.1% (Year/Year)</td>
<td>20.0% (Year/Year)</td>
<td>-4.5% (Year/Year)</td>
</tr>
</tbody>
</table>

Where will I be in 3 months? + 3 Month Projected PMPM

Service Type
- Hospital Admissions
- Extended Care Facility
- Observation
- Emergency Department
- Advanced Imaging
- Outpatient Specialty
- Pharmacy

How fast am I getting there?

- UHL/1,000
- Cost/Serv

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Integrated Data in Self Service BI Tools

From EMR

From All Payer Claims Data
Integrated Data in Specialty Referrals

High Level Claims Based Network Analysis Paired with PCP Specific Referral Report
Integration of Data into Operational Workflows
## Direct Link to Pop Management EMR Functions

<table>
<thead>
<tr>
<th>Hyperlink</th>
<th>Action Domain</th>
<th>Direction Action To EMR Activity:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="chart.png" alt="Chart" /></td>
<td>Information Review</td>
<td>Opens the Patient Chart to Overview</td>
</tr>
<tr>
<td><img src="lab_review.png" alt="Lab Review" /></td>
<td>Information Review</td>
<td>Opens to Laboratory Results Section</td>
</tr>
<tr>
<td><img src="medication.png" alt="Medication" /></td>
<td>Information Review</td>
<td>Opens to Current Medication List Section</td>
</tr>
<tr>
<td><img src="orders.png" alt="Orders" /></td>
<td>Order Entry</td>
<td>Opens Option to Start Orders Encounter</td>
</tr>
<tr>
<td><img src="email.png" alt="Email" /></td>
<td>Communication Order Entry</td>
<td>Starts a MyHealth Email Message</td>
</tr>
<tr>
<td><img src="telephone_encounter.png" alt="Telephone Encounter" /></td>
<td>Communication Order Entry</td>
<td>Starts a Telephone Encounter to Patient</td>
</tr>
<tr>
<td><img src="letter.png" alt="Letter" /></td>
<td>Communication Order Entry</td>
<td>Opens the Letter Encounter Section</td>
</tr>
</tbody>
</table>
### Patient Risk Information

**Description:** 65 year old male

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>Risk Score</th>
<th>Scoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complex</td>
<td>10</td>
<td>DxCG Score (likelihood of future hospitalization): 0.48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DxCG Score &gt; 90th Percentile (0.25 or higher): 3 pts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 or more hospitalizations or ED visits in the past 12 months: 3 pts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Active Psychiatric, Dementia, or Substance Abuse Diagnosis: 2 pts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Active CHF, COPD, or CKD Diagnosis: 1 pt</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14 or more active medications on the EPIC medication list: 1 pt</td>
</tr>
</tbody>
</table>

**Disclaimer:** Risk score calculation relies heavily on claims data, which has a lag of three months. Therefore, the risk score may, in some cases, over- or underestimate the patient’s current risk.

### Last 6 Risk Levels

<table>
<thead>
<tr>
<th>Date</th>
<th>Risk Level</th>
<th>Risk Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUG 2014</td>
<td>Complex</td>
<td>10</td>
</tr>
<tr>
<td>JUL 2014</td>
<td>Complex</td>
<td>3</td>
</tr>
<tr>
<td>JUN 2014</td>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>MAY 2014</td>
<td>Medium</td>
<td>4</td>
</tr>
<tr>
<td>APR 2014</td>
<td>Complex</td>
<td>10</td>
</tr>
<tr>
<td>MAR 2014</td>
<td>Complex</td>
<td>10</td>
</tr>
</tbody>
</table>

### Last 3 Roster Review Encounters

<table>
<thead>
<tr>
<th>Date</th>
<th>Complaint</th>
<th>Diagnosis Description</th>
<th>Type</th>
<th>Department</th>
<th>Provider</th>
<th>Dept</th>
<th>Type</th>
<th>Appt Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/29/2014</td>
<td>Complex Adult</td>
<td>Major depressive disorder, single episode, severe</td>
<td>Roster Review</td>
<td>KENCASEM</td>
<td>Tessa, Enrique</td>
<td>KENIMIE</td>
<td>Office Visit</td>
<td></td>
</tr>
</tbody>
</table>

### Last 3 Appointments

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Status</th>
<th>Provider</th>
<th>Dept</th>
<th>Type</th>
<th>Appt Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/28/2014</td>
<td>10:30 AM</td>
<td>No Show</td>
<td>Lawler, Noelle, PA</td>
<td>KENIMIE</td>
<td>Office Visit</td>
<td></td>
</tr>
<tr>
<td>7/11/2013</td>
<td>9:00 AM</td>
<td>No Show</td>
<td>Howard, Linda, RN</td>
<td>KENIMIE</td>
<td>Office Visit</td>
<td></td>
</tr>
</tbody>
</table>
Risk of Information Overload

“Decision-makers are often not provided with all the information they need to make the optimal decision. Providing more information is not always the answer.”

CASE STUDY: PIONEER ACO
Data Uses – Three Buckets

• Strategy Setting and Problem Solving
  – Identify organization level opportunities
    • ACO Case Study: Post Acute Facility Network Strategy

• Population Management
  – Identify Gaps in Care, Opportunities for Improvement
    • ACO Case Study: High Risk Patient Management

• Performance Reporting
  – Track Performance on Key Initiatives
    • ACO Case Study: CKD Identification and Management

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Why Participate in Pioneer ACO? “Reason for Action”

High quality, high-value care for all Medicare-eligible patients across the care continuum with spillover for commercial risk

Unique opportunity to be accountable for quality and costs for a PPO population

Further Atrius Health position as a market leader in payment reform, moving towards 100% global payment

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Key Features of Pioneer ACO Model

Three year contract effective January 2012; accountable for all Medicare A and B benefits

Partnership with Center for Medicare and Medicaid Innovation (CMMI)

Medicare FFS beneficiaries aligned with ACO based on their historical claims data

Global budget: Trended historical cost v. matched cohort

Upside & downside risk, shared with CMS

Financial performance determined by performance on 33 quality measures

Pioneer obligations: eg. be a learning organization; provide patient-centered care
Approach: Key ACO Initiatives

**Geriatric Care Model**
- Patient Risk Stratification
- Multidisciplinary Roster Reviews
- Advance Care Planning
- Chronic Disease Management
- Home-based Primary Care

**Data Analytics & Reporting**
- Support Workgroup Initiatives
- Monitor Results

**Care Management Strategy**
- Leverage Home Health Partner
- Integrate Local Elder Services Agencies
- Launch programs for Dual-eligibles
- Support Preferred Hospital strategy

**Electronic Health Record and Health Information Exchange**
- Tools to Support ACO Initiatives & Workflows

**Post-Acute Strategy**
- Preferred SNF Network Expectations
- SNF Provider Service Standards
- SNF Provider Expectations
- Preferred ambulance strategy

**Quality & Safety**
- ACO Quality Metric Reporting and Improvement

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Strategy Setting & Problem Solving:

SNF NETWORK STRATEGY
Variation in 2010 Medicare Average Length of Stay for Skilled Nursing Facilities

- Quartile 1: 24 days
- Quartile 2: 29 days
- Quartile 3: 34 days
- Quartile 4: 61 days

Difference Between Top & Bottom Quartile: 10 Days = $4,000

Source: Adapted from Office of HHS Inspector General December 2010.

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Variation in 2009 Risk Adjusted Readmission Rates from Skilled Nursing Facilities


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SNF Cost & Quality: Measure Tracking

### Post Acute Facility Tracker

**Cost**
- % of patients admitted to preferred SNF
- SNF All Cause 30 day readmit rate
- SNF ALOS
- SNF$ pmpm

**Quality**
- % of patients with SNF admits who have completed follow-up appointments with PCP within 7 days of discharge
- % Preferred SNFs with "deficiency free" DPH surveys
- Influenza vaccine
- Pneumococcal vaccine
- Falls risk assessment
- Advance Care Planning documents on file

### By Atrius Group

<table>
<thead>
<tr>
<th>Group</th>
<th>SNF Admits</th>
<th>Avg LOS</th>
<th>Total Costs</th>
<th>Costs per Admit</th>
<th>Readmits</th>
<th>Readmits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>169</td>
<td>21.8</td>
<td></td>
<td></td>
<td>23</td>
<td>13.6%</td>
</tr>
<tr>
<td>2</td>
<td>242</td>
<td>21.7</td>
<td></td>
<td></td>
<td>34</td>
<td>14.0%</td>
</tr>
<tr>
<td>3</td>
<td>98</td>
<td>22.6</td>
<td></td>
<td></td>
<td>11</td>
<td>11.2%</td>
</tr>
<tr>
<td>4</td>
<td>255</td>
<td>24.0</td>
<td></td>
<td></td>
<td>29</td>
<td>11.4%</td>
</tr>
<tr>
<td>5</td>
<td>912</td>
<td>21.9</td>
<td></td>
<td></td>
<td>114</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

### Group 5 by Site

<table>
<thead>
<tr>
<th>Group</th>
<th>SNF Admits</th>
<th>Avg LOS</th>
<th>Total Costs</th>
<th>Costs per Admit</th>
<th>Readmits</th>
<th>Readmits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site</td>
<td>93</td>
<td>22.8</td>
<td></td>
<td></td>
<td>5</td>
<td>5.4%</td>
</tr>
<tr>
<td>Site</td>
<td>8</td>
<td>20.0</td>
<td></td>
<td></td>
<td>1</td>
<td>12.5%</td>
</tr>
<tr>
<td>Site</td>
<td>13</td>
<td>12.2</td>
<td></td>
<td></td>
<td>1</td>
<td>7.7%</td>
</tr>
<tr>
<td>Site</td>
<td>57</td>
<td>26.4</td>
<td></td>
<td></td>
<td>7</td>
<td>12.3%</td>
</tr>
<tr>
<td>Site</td>
<td>176</td>
<td>20.3</td>
<td></td>
<td></td>
<td>34</td>
<td>19.3%</td>
</tr>
<tr>
<td>Site</td>
<td>10</td>
<td>26.0</td>
<td></td>
<td></td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Site</td>
<td>42</td>
<td>23.5</td>
<td></td>
<td></td>
<td>3</td>
<td>7.1%</td>
</tr>
</tbody>
</table>

### SNF NAME

<table>
<thead>
<tr>
<th>SNF NAME</th>
<th>Avg LOS</th>
<th>Admits</th>
<th>Total Costs</th>
<th>Costs per Admit</th>
<th>Readmits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SNF</td>
<td>25.0</td>
<td>65</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>SNF</td>
<td>28.8</td>
<td>44</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>SNF</td>
<td>15.8</td>
<td>63</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>SNF</td>
<td>24.8</td>
<td>34</td>
<td></td>
<td></td>
<td>0</td>
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<td>SNF</td>
<td>27.9</td>
<td>32</td>
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<td></td>
<td>5</td>
</tr>
<tr>
<td>SNF</td>
<td>20.7</td>
<td>39</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

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Development of Preferred SNFs Network

Created preferred SNF network to enhance the delivery and coordination of care

Meet service standards
Atrius Health team on-site
History of positive relationship
Geographic needs
SNF willingness to collaborate
Good metrics*

% Pioneer Patients Admitted to Preferred SNF’s

<table>
<thead>
<tr>
<th></th>
<th>Q1 2012</th>
<th>CY 2013</th>
<th>Q1 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>44%</td>
<td>50%</td>
<td>52%</td>
</tr>
</tbody>
</table>

Medicare Advantage > 75%

*Good Metrics: Medicare Compare; State survey; Readmission during SNF stay; LOS

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Managing SNF Events

- Facility-level expectations
- Provider-level expectations
- Discharge workflow
- EHR documentation
- Monitoring & reporting
- Use of preferred discharge providers

\[\downarrow 2.0 \text{ LOS} = \$2M\]
\[\downarrow 2\% \text{ Readmit Rate} = \$0.5M\]
Still Lots of Opportunity

Pioneer ACO
Average Length of Stay by SNF - 30 or More Admissions
(CY 2013)

Preferred
Non-Preferred
Population Management:

HIGH RISK GERIATRIC PATIENT IDENTIFICATION AND MANAGEMENT
Medicare High Risk Model: Patient Risk Stratification Tool

Using both claims and Electronic Health Records databases, the tool allows to identify members at risk of hospitalization, poor health outcomes, high costs.

<table>
<thead>
<tr>
<th>Factor</th>
<th>Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>DxCG Likelihood of Hospitalization Score</td>
<td>3</td>
</tr>
<tr>
<td>Hospital Admissions or ED Visits</td>
<td>3</td>
</tr>
<tr>
<td>Behavioral Health (Psychiatric, Substance Abuse, Dementia)</td>
<td>2</td>
</tr>
<tr>
<td>CHF or COPD or CKD</td>
<td>1</td>
</tr>
<tr>
<td>Poly-pharmacy (Excludes Topical &amp; Supplies)</td>
<td>1</td>
</tr>
<tr>
<td>Maximum Score</td>
<td>10</td>
</tr>
</tbody>
</table>

Proportions of High Cost (Atrius Health ACO) Patients & attributable to them Costs (Aug 2012)

- 20% of patients
- 60% of costs

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Integration of Analytics into EPIC Workflow

High Risk Roster Elements:

- Patient (Name, MRN, Sex, Age)
- Payor, Site, PCP
- Risk Score, Risk Trend, Components:
  - DxCG, Hosp admits, ED visits, # Prescriptions
  - COPD, CHG, CKD, Demential, BH (yes/no)
  - Last Visit, Next Visit, Last Roster Review

Patient Care Checklist

- Patient has Advance Care Planning documents on file
- A Falls Risk Assessment has been completed in the current calendar year
- A PHQ-2 or PHQ-9 has been completed in the current calendar year
- Tobacco use has not been reviewed in the current calendar year.
- No known facility discharges requiring reconciliation at this time.
- BMI=38.4 kg/m2. BMI is outside of normal parameters. Follow-up action required.

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High Risk Patient Roster Review

Confirm diagnoses
Review medications
Address quality measures

Social assessment
Care needs assessment

Advance directives
Palliative care discussion

Care plan documentation & orders

PCP-Led Team
“Each site may choose to have any number or combination of participants so long as the goals of high risk roster reviews are being met.”

**Typical participants include:**
- PCP
- Primary Nurse or Medical Assistant
- Population Manager
- Care Manager
- Geriatric Champion or Palliative Care Specialist
- Social Worker
- VNA representative
- Clinical Pharmacist
Roster Review Encounter, Action Items, Care Plan
Proof of Concept: Medical Group Pilot

- 5 hours medical management time/FTE/week
- Care Manager on site
- Roster Reviews
- Also expanded population managers role
- Bonus payments for exceptional performance
  - Quality
  - Utilization
  - Access

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Performance Reporting:

CKD ANALYSIS, IMPROVEMENT & TRACKING
Chronic Kidney Disease Management – Variation Analysis Example

High Prevalence in Medicare Population

Proven clinical benefits of guidelines (NKF)

Large drive of utilization and costs:

- 4599 hospital admissions ($55.9 million)
- 4030 ED visits
- 1385 SNF admissions
### Provider Practice Variation Analytics: CKD

<table>
<thead>
<tr>
<th>Primary Care Physician</th>
<th>Total CKD Patients (Lab)</th>
<th>EPIC CKD Diag in 12m</th>
<th>On Problem List</th>
<th>Last BP &lt;140/80</th>
<th>Last LDL&lt;100</th>
<th>Diab + Last A1C&lt;7</th>
<th>Stage 3b or 4 w/ Neph Referral</th>
<th>Stage 3b or 4 w/ Neph Visit</th>
<th>Calcium</th>
<th>Phos</th>
<th>CBC</th>
<th>UA</th>
<th>Vit D</th>
<th>PTH</th>
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**Primary Care Dashboard: Merge of EPIC and Claims Data**
- Lab Result Based Total CKD Population
- Laboratory Screening (Ca, Phos, CBC, UA, Vit D, PTH)
- Clinical Outcomes (BP, LDL, HgA1c)
- Referral to Nephrologist Specialist
- Visit to Nephrologist 50
### Atrius Health CKD Guidelines for Primary Care

<table>
<thead>
<tr>
<th>Stage (eGFR)</th>
<th>Albuminuria? (≥30mg/g)</th>
<th>Serum eGFR and Urine Microalbumin</th>
<th>Hgb, 25-OH Vit D, Phos, PTH, Lipids, Ca Electrolytes</th>
<th>Initial Renal Ultrasound</th>
<th>Nephrology Consult</th>
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<tr>
<td>Stage 3a (45-59)</td>
<td>No</td>
<td>Annually*</td>
<td>Annually*</td>
<td>Consider</td>
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<tr>
<td>Stage 3a; (45-59)</td>
<td>Yes</td>
<td>Q6 Month*</td>
<td>Annually*</td>
<td>Consider</td>
<td>Recommend</td>
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<tr>
<td>Stage 3b; (30-44)</td>
<td>No</td>
<td>Q6 Month*</td>
<td>Annually*</td>
<td>Consider</td>
<td>Recommend</td>
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<tr>
<td>Stage 3b; (30-44)</td>
<td>Yes</td>
<td>Q4-6 Month*</td>
<td>Annually*</td>
<td>Consider</td>
<td>Recommend</td>
</tr>
<tr>
<td>Stage 4; (15-29)</td>
<td>N/A</td>
<td>Q3 Month*</td>
<td>Annually*</td>
<td>Consider</td>
<td>Recommend</td>
</tr>
</tbody>
</table>

* Might require more frequent monitoring if abnormal and/or if undergoing changing treatment strategies

---

Approved by the Atrius Health Accountable Care Organization’s Geriatric Care Model CKD Workgroup, which includes the Harvard Vanguard Chief of Nephrology; February 2013

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CKD: Impact

Patients w/EGFR<60
PIioneer ACO Case Study:

Putting it All Together
Financial Performance: Beat the Trend

Atrius Health v Reference Trend, PY1 v PY2

Pioneer “in the noise”; Medicare Advantage significant savings
Conclusions

• Integrating claims and EHR data is critical for identifying opportunities to reach the triple aim.

• Data driven interventions can be measured and tracked from hypothesis to results.

• Pushing data out to the providers of care creates local engagement in improvement efforts.
Thank you!

Emily Brower
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Accountable Care Programs
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Joe_Kimura@AtriusHealth.org