The Evolution of Primary Care Delivery within an Integrated Health System

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Carilion Clinic Department of Family and Community Medicine
Our Mission

Improve the health of the communities we serve
Quick Facts

• Multispecialty physician group of 750+ providers
• Largest employer in Virginia west of Richmond
• 7 hospitals include Carilion Roanoke Memorial Hospital, the third-largest in Virginia
• 1,026, Licensed beds
• Emergency Department ranks among the nation’s busiest (top 15% - 168,900 visits)
• $1.5 billion net revenue
The Region We Serve
Financial Challenges

• Safety net provider, regardless of ability to pay or geographic location
• Relatively poor, moderately educated and unhealthy population served
• Slow/no growth and aging population
• Academic mission
• Investments in changing the model
• Desire to lower costs for patients
  – Translates into lower revenues for Carilion
Operating Results Since FY09

Clinic Transformation

- Operating income $(lhs)
- Operating margin % (rhs)

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Operating Income $(lhs)</th>
<th>Operating Margin %</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2008 (Act)</td>
<td>$60,000,000</td>
<td>-2.2%</td>
</tr>
<tr>
<td>FY2009 (Act)</td>
<td>$50,000,000</td>
<td>-5.0%</td>
</tr>
<tr>
<td>FY2010 (Act)</td>
<td>$40,000,000</td>
<td>-4.0%</td>
</tr>
<tr>
<td>FY2011 (Act)</td>
<td>$30,000,000</td>
<td>-0.5%</td>
</tr>
<tr>
<td>FY2012 (Act)</td>
<td>$20,000,000</td>
<td>1.0%</td>
</tr>
<tr>
<td>FY2013 (Act)</td>
<td>$10,000,000</td>
<td>1.4%</td>
</tr>
<tr>
<td>FY2014 (Proj)</td>
<td>$60,000,000</td>
<td>2.8%</td>
</tr>
</tbody>
</table>
Department of Family and Community Medicine

- 877,000 visits annually
- 300,000 empaneled patients
- AGME Residency- 30 residents
- 168 Physicians
- 65 ACPs
- 740 Staff
- 43 Medical homes
- 6 urgent care centers/1 occupational clinic
Drivers of Change in Healthcare

- Rising healthcare costs
- Aging population
- Insufficient healthcare workforce
- Wasteful healthcare system
- Inadequate safety measures
- Outdated record-keeping
- Healthcare reform legislation
Insufficient Healthcare Workforce

• Current estimates are a 40,000 shortfall in physicians
• Inadequate numbers of physician extenders to fill the gaps
• Current medical students are not attracted to primary care
  • Long hours
  • Low pay
  • Increasing hassles
Recruiting - ongoing challenge

“Maybe there will be some primary care doctors available on this planet!”
Exhibit 4. Health Care Costs Concentrated in Sick Few—Sickest 10 Percent Account for 65 Percent of Expenses

Distribution of health expenditures for the U.S. population, by magnitude of expenditure, 2009

- **1%** of the U.S. population accounts for **10%** of health expenditures, averaging **$90,061**.
- **5%** of the U.S. population accounts for **5%** of health expenditures, averaging **$40,682**.
- **10%** of the U.S. population accounts for **50%** of health expenditures, averaging **$26,767**.
- **50%** of the U.S. population accounts for **22%** of health expenditures, averaging **$7,978**.

Source: Agency for Healthcare Research and Quality analysis of 2009 Medical Expenditure Panel Survey.
Primary care undergoing rapid change

“We need to do a better job of whatever it is that we do.”
The Patient-Centered Medical Home

• The Medical Home concept calls for a fundamental shift in the relationship between patients and their primary care physicians. There must be a higher degree of personalized care coordination, access beyond the acute care episode and identification of appropriate medical and community resources to meet the patients’ needs.
Carilion Clinic: PCMH Journey

• Initial Goal (2009): Design and implement a medical home model based on NCQA standards to support achievement of Level 3 NCQA Recognition.

• Anticipated payment reform would follow to compensate for efforts.
Program History

• CCMH 1.0 (2009 – 2012)

• CCMH 2.0 (2012 to 2014)

• CCMH 3.0 (2014 to present)
CCMH 1.0

• NCQA process- 27 sites received level 3 recognition
• Registry development to track patients with chronic diseases
• Care coordinators trained and placed in sites
• metrics developed for preventive care, chronic disease management and access
PCMH Satisfaction Survey
(provider & staff perceptions)

• Transition to model has been worth the effort to implement and has improved chronic / preventive care

• Transitions are effectively managed (ED, hospital admissions / discharges, SNF)

• Chronic disease registries and care coordination have improved population management

• Pre-visit planning aligns care team with care needs and guides the office visit
Care Coordinator Satisfiers

• Receiving positive feedback / feel appreciated by physicians
• Networking / collegial relationships with other care coordinators
• Educational opportunities for professional growth, skill enhancement, health coaching
• Interactions with patients
• Being seen as a patient advocate
• Being part of a PCMH model of care
The Dark Side
Challenges in NCQA Model

- Variation in buy-in and implementation across PCMH sites.
- Continued role confusion (especially among care coordinators)
- Too much emphasis on non-value added tasks to meet PCMH standards (screening questions applied to all patients regardless of reason for visit)
- Inadequate payor reimbursement for added time/ resources
- Sites live on PCMH model back sliding from workflows since roll out (sites continue to work in volume driven model)
Challenges in NCQA Model, cont’d

• Lack of effective / efficient work processes in model application
• Stress of change – doing more in same time-frame
• Lack of patient understanding of the model
• Paperwork barrier - providers/ licensed staff doing clerical work
• Access
• Care Coordinator turnover – 57% in 16 months
Care Coordinator Dissatisfiers

- Do not feel valued or connected with site
- Practice not engaged with PCMH
- Lack of role clarity within practice / Dept.
- Overwhelmed – uncertain how to prioritize tasks
- Inadequate orientation and consistent communication
- Want more direct patient interaction
- Need preceptor or lead Care Coordinator for consistent training, support, and serve as a voice.
- Pay
CCMH 2.0 - New Model, New Direction

- Strengthen what is working
- Redesign workflows
- Work to license
- Leverage opportunities
- Align with clinic strategy (PHM)
- Impact cost of care
What did we want to do differently?

• Integrate the best of the NCQA PCMH model with what works best for Carilion Clinic Family and Community Medicine

• Focus efforts on at risk, high risk, and high utilizers

• Use our own metrics
  – Focus on outcome measures, not NCQA prescribed process measures

• Eliminate low or no value work

• Implement and support working to license

• Achieve higher function / value from care coordination
Core Tenets of New Model

• Robust Care Coordination
• Improved Access
• Focus of high risk and at high risk
  – Collaborate with new Extensivist Team to co-manage high utilizers
• Manage shared risk and leverage share savings
• Working to license
• Patient experience – satisfaction, access
• Quality and safety
• Provider satisfaction
• Metrics
• Outcomes
Current Scope

• 43 FM/IM practices
• 168 physicians / 60 ACPs
• > 300,000 patients
• Staffing
  – 4 senior care coordinators
  – 42 practice-based care coordinators
  – 24 medical home MOAs
Metrics

**Process Measures:**
- Care Coordination – Goal of 2 face to face interactions per patient per year in identified populations *(or self-management visits bi-annually in identified populations)*

**Preventive Care Measures:**
- Mammography rate
- Colonoscopy rate
- TDap immunization rate

**Patient Experience Measures**
- CAPHS – Patient satisfaction
- Access – 3\(^{rd}\) next available
Metrics

**Chronic Disease Measures:**
- Diabetes – Composite metrics
- CHF – Classification, ACE/ARB use
- COPD – Smoking cessation, spirometry, ED/Hospital utilization
- Asthma – peds

**Utilization Measures:**
- 30 day hospital readmits
- Ambulatory sensitive indicators

**Financial Measures:**
- Revenues – direct, pmpm, premiums, gain share
- Costs – staffing, other
Physician Compensation Alignment

• Moving from Volume to Value
• Major Components:
  – Personal RVUs (~ 85%)
  – ACP oversight (RVUs) (~ 5%)
  – Performance metrics (~ 10%)
    • Panel size
    • Quality metrics
    • Expense management
• We anticipate that future additions to the comp plan will be added to the performance metrics.
Bending the Cost Curve

• Improved health outcomes reduce total patient expense
• Avoidance of unnecessary imaging and testing
• Disciplined use of generic prescription writing
• Management of care transitions and end-of-life
• Reductions in Urgent Care and ED utilization
• Prevention of avoidable admissions and readmissions
CCMH 2.0

FCM Financial Summary

<table>
<thead>
<tr>
<th></th>
<th>FY 2012</th>
<th>FY 2013</th>
<th>FY 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Revenue</td>
<td>–</td>
<td>$3,235,127</td>
<td>$3,445,763</td>
</tr>
<tr>
<td>Total Operating Expenses</td>
<td>$1,236,088</td>
<td>$2,672,323</td>
<td>$4,174,925</td>
</tr>
<tr>
<td>Operating Income/(Loss)</td>
<td>$(1,236,088)</td>
<td>$562,804</td>
<td>$(729,162)</td>
</tr>
<tr>
<td># of Panel Members</td>
<td>–</td>
<td>–</td>
<td>261,895</td>
</tr>
<tr>
<td>PMPM Investment</td>
<td>–</td>
<td>–</td>
<td>$(0.23)</td>
</tr>
</tbody>
</table>

CCMH: FCM Sites and FTEs

<table>
<thead>
<tr>
<th></th>
<th>FY 2012</th>
<th>FY 2013</th>
<th>FY 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td># of FTEs</td>
<td>19</td>
<td>38</td>
<td>66</td>
</tr>
<tr>
<td># of Sites</td>
<td>10</td>
<td>27</td>
<td>37</td>
</tr>
</tbody>
</table>

Fully Expanded
The Quadruple Aim

• IHI Triple Aim
  – Improving the patient experience of care
  – Improving the health of populations
  – Reducing the per capita cost of health care

• Consider a fourth aim
  – Improving the provider and staff experience of giving care
    • Making it easier for them to do the right things
    • Reducing burnout / turnover
IHI Aim #1: Patient Experience
Patient satisfaction

- as measured by CG CAHPS we are above median in all measures and in multiple measures at 75th percentile
IHI Aim #2: Health Outcomes

(Chronic and Preventative Care: 2009 – 2014)
<table>
<thead>
<tr>
<th>CLINICAL MEASURE</th>
<th>BASELINE Year Prior to Transition</th>
<th>YR 1</th>
<th>YR 4</th>
<th>HEDIS National Mean 2013</th>
<th>% CHANGE Baseline to YR 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DM: HbA1c Test Frequency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of diabetics 18-75 years of age with HbA1c test in the past six months</td>
<td>72.2%</td>
<td>91.3%</td>
<td>91.5%</td>
<td>87.7%</td>
<td>26.7%</td>
</tr>
<tr>
<td><strong>DM: HbA1c Value</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of diabetics 18-75 years of age with HbA1c control &lt;8.0%</td>
<td>79.2%</td>
<td>78.8%</td>
<td>74.4%</td>
<td>55.9%</td>
<td>-6.1%</td>
</tr>
<tr>
<td><strong>DM: Blood Pressure Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of diabetics 18-75 years of age with blood pressure &lt;140/90 mm Hg</td>
<td>69.8%</td>
<td>71.9%</td>
<td>67.9%</td>
<td>59.3%</td>
<td>-2.9%</td>
</tr>
<tr>
<td><strong>DM: LDL Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of diabetics 18-75 years of age with LDL-C control &lt;100 mg/dL</td>
<td>50.3%</td>
<td>57.1%</td>
<td>59.4%</td>
<td>43.0%</td>
<td>18.1%</td>
</tr>
<tr>
<td><strong>HTN: Blood Pressure Control</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of hypertensives 18-85 years of age with blood pressure &lt;140/90 mm Hg</td>
<td>62.3%</td>
<td>66.4%</td>
<td>72.4%</td>
<td>57.6%</td>
<td>16.2%</td>
</tr>
<tr>
<td><strong>Asthma: Controller Medications</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of severe persistents 5-64 years of age with controller meds prescribed</td>
<td>(Insufficient Sample Size)</td>
<td>75.9%</td>
<td>92.5%</td>
<td>90.7%</td>
<td>21.9%</td>
</tr>
</tbody>
</table>

Baseline: Entries are means for all nine sites; snapshot taken 12 months prior to model transition.
Reporting Periods: Do not equate to calendar years because of staggered site transition starting dates.
HEDIS National Mean: NCQA, State of Health Care Quality, 2013; weighted per payment contribution within the nine sites; method approved by NCQA in 2010.
% Change: The percent change from baseline to YR 4 result.
## Table 3.2 Impact on Preventive Care
Carilion Clinic Medical Home Performance by Measure and Period
2009-2014

<table>
<thead>
<tr>
<th>PREVENTIVE MEASURE</th>
<th>BASELINE Year Prior to Transition</th>
<th>YR 1</th>
<th>YR 4</th>
<th>HEDIS National Mean (2013)</th>
<th>% CHANGE Baseline to YR 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breast Cancer Screening</strong>&lt;br&gt;Percentage of women 40-69 years of age with a mammogram in the past two years</td>
<td>41.6%</td>
<td>65.6%</td>
<td>60.5%</td>
<td>64.2%</td>
<td>45.4%</td>
</tr>
<tr>
<td><strong>Pneumococcal Vaccination</strong>&lt;br&gt;Percentage of patients ≥65 years of age with a pneumococcal vaccination</td>
<td>67.6%</td>
<td>78.0%</td>
<td>80.0%</td>
<td>71.7%</td>
<td>18.3%</td>
</tr>
<tr>
<td><strong>Tdap Immunization</strong>&lt;br&gt;Percentage of patients 19-64 years of age with a Tdap vaccination</td>
<td>55.9%</td>
<td>55.7%</td>
<td>57.2%</td>
<td>U/A</td>
<td>2.3%</td>
</tr>
</tbody>
</table>

Data Source: Clinical Informatics and Analytics. Monthly Ambulatory Performance Reports. 2009-2014. Clinical Measures: NCQA, *State of Health Care Quality, 2012*; approved for use by Ambulatory Quality Committee. Baseline: Entries are means for all nine sites; snapshot taken 12 months prior to model transition. Reporting Periods: Do not equate to calendar years because of staggered site transition starting dates. HEDIS National Mean: NCQA, *State of Health Care Quality, 2013*; weighted per payment contribution within the nine sites; method approved by NCQA in 2010. % Change: the per cent change from baseline to YR 4 result.
IHI Aim #3: Cost / Utilization

*Preliminary Findings
Medical Home Impact on ED Utilization
(All Patients with 1 or more ED Visits before Medical Home Engagement)

<table>
<thead>
<tr>
<th>Changes in ED Utilization After Medical Home Engagement</th>
<th>1+ ED Visits Before Medical Home Engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td># Pt's Decreased Utilization</td>
<td>98</td>
</tr>
<tr>
<td># Pt's Increased Utilization</td>
<td>29</td>
</tr>
<tr>
<td># Pt's No Change</td>
<td>19</td>
</tr>
<tr>
<td>Total Number of Patients</td>
<td>146</td>
</tr>
</tbody>
</table>

n=146
Medical Home Impact on Inpatient Utilization

(All Patients with 1 or more IP Admissions before Medical Home Engagement)

| Changes in IP Utilization After Medical Home Engagement (1+ IP Admits Before Medical Home Engagement) |
|---------------------------------------------------|-----------|-----------|
| # Pt's Decreased Utilization | 96        | 70.6%     |
| # Pt's Increased Utilization | 18        | 13.2%     |
| # Pt's No Change             | 22        | 16.2%     |
| Total Number of Patients     | 136       |           |
CCMH 3.0

• Centralization of some components
• Evolution beyond individual “medical homes” and the “medical village” to the “medical network”
• Integral to Population Health Management with a focus on:
  – At risk patients (e.g. ambulatory P4P)
  – Avoidable utilization (e.g. readmissions)
  – High risk patients / communities (e.g. complex care action plans; extensivist models; tele-psych; pharmacy outreach)
Primary Care Re-design (Triple Aim)

• Physician
• ACP
• Nurse/LPN/MA
• Care Coordinator
• Medical Office Assistants
• Practice Manager

• Village people
  • Pharmacists
  • Social worker
  • Psychologists
  • Psychiatrists
Future Re-design

• MyChart e-visits, video visits
• Tele-health
• E-consults
• Concierge medicine
Technology for the new generation

- iTriage (symptom checker)
What about that 4th aim?

- Scribes
- Pilots underway to provide centralized resources for paperwork and pre-auths
- Support working to license with better staff training and adding support staff for medical home
- Share best practices for office workflow
- Examine value vs effort for new initiatives and obtain adequate resources
- Mychart, evisits, direct patient scheduling
We Seat
1,000 PEOPLE...
10 AT A TIME
COPD Patient WOW Story

First Care Coordinator Encounter / Patient Stopped Smoking

Obtained Day Job at Rescue Mission

Patient Off Oxygen

Total Direct Cost: $31,559

Total Direct Cost: COPD Patient

April 2013 to June 2014
Thanks to

Our clinicians, nurses, office staff, care coordinators, and administrative team who work hard every day to deliver on the promise

Our senior executive team for their support and endorsement

Our patients for believing in us

QUESTIONS?