Institute of Medicine
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Reducing Costs and Improving Outcomes: Strategies That Work and How to Get There

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President and CEO
Geisinger Health System
Geisinger Health System
An Integrated Health Service Organization

Provider Facilities
- Geisinger Med. Ctr. (+ Janet Weis Children’s Hospital)
- Geisinger Wyoming Valley Med. Ctr. w/ Heart Hosp. & Henry Cancer Ctr.
- Geisinger South Wilkes-Barre Hosp.
- Marworth Drug & Alcohol Treatment Center
- 2 ambulatory surgery centers
- >40K admissions, ~700 licensed in-pt beds

Managed Care Companies
- ~228,000 members
- Diversified products
- >18,000 contracted physicians
- 36,000 Medicare Advantage
- 90 Non-Geisinger hospitals
- 43 PA counties

Physician Practice Group
- Multispecialty group
- ~750 physicians
- 38 comm. practice sites
- >1.6 million outpatient visits
- 281 residents and fellows
Electronic Health Record (EHR)

- Decision to implement Epic®: 1995
- > $120M invested (hardware, software, manpower, training)
- Running costs: ~4.4% of annual revenue of > $2.3B
- Fully-integrated EHR – 38 community practice sites; GMC in-patient; GWV nursing documentation; GWV and GSWB Emergency Department live on EPIC
  - Northeast hospitals go live with CPOE, medication administration and clinical documentation: Feb 2009
- > 3 million patient records
  - ~124,000 active users of MyGeisinger; new goal = 200,000
  - ~2,300 non-Geisinger users
  - ~421 non-Geisinger practices (GeisingerConnect)
  - Real-time registries track clinical metrics by dept/physician
  - PACS and web-based image distribution
The Vision

- Innovation
- Geisinger Quality
- Market Expansion
- Securing the Legacy

*Predicated on maintaining healthy operations*
“Hedging”

- GHS provision of care
  - 30% GHP payor
  - 70% Non-GHP payors

- GHS insurance companies
  - 50% via Geisinger Clinic
Targets for Geisinger Innovation

- Unjustified variation
- Fragmentation of care-giving
- Perverse payment incentives
  - Units of work
  - Outcome irrelevant
- Patient as passive recipient of care
Innovation Initiatives*

- ProvenCare® for acute episodic care (the “warranty”)
- ProvenCare® Chronic Disease Optimization
- ProvenHealth Navigator (Advanced Medical Home)
- Transitions of Care

*Achievable only through innovation
ProvenCare® for Acute Episodic Care (the “Warranty”)

Heal • Teach • Discover • Serve

GEISINGER
ProvenCare® for Acute Episodic Care

ProvenCare®
- Identify high-volume DRGs
- Determine best practice techniques
- Deliver evidence-based care
- GHP pays global fee
- No additional payment for complications
ProvenCare® CABG: Reliability

% patients receiving all ProvenCare components


*Single month of data
# Quality/Value - Clinical Outcomes (18 months)

<table>
<thead>
<tr>
<th></th>
<th>Before ProvenCare® (n=132)</th>
<th>With ProvenCare® (n=181)</th>
<th>% Improvement/Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-hospital mortality</td>
<td>1.5 %</td>
<td>0 %</td>
<td>21 %</td>
</tr>
<tr>
<td>Patients with any complication (STS)</td>
<td>38 %</td>
<td>30 %</td>
<td>21 %</td>
</tr>
<tr>
<td>Patients with &gt;1 complication</td>
<td>7.6 %</td>
<td>5.5 %</td>
<td>28 %</td>
</tr>
<tr>
<td>Atrial fibrillation</td>
<td>23 %</td>
<td>19 %</td>
<td>17 %</td>
</tr>
<tr>
<td>Neurologic complication</td>
<td>1.5 %</td>
<td>0.6 %</td>
<td>60 %</td>
</tr>
<tr>
<td>Any pulmonary complication</td>
<td>7 %</td>
<td>4 %</td>
<td>43 %</td>
</tr>
<tr>
<td>Blood products used</td>
<td>23 %</td>
<td>18 %</td>
<td>22 %</td>
</tr>
<tr>
<td>Re-operation for bleeding</td>
<td>3.8 %</td>
<td>1.7 %</td>
<td>55 %</td>
</tr>
<tr>
<td>Deep sternal wound infection</td>
<td>0.8 %</td>
<td>0.6 %</td>
<td>25 %</td>
</tr>
<tr>
<td>Readmission within 30 days</td>
<td>6.9 %</td>
<td>3.8 %</td>
<td>44 %</td>
</tr>
</tbody>
</table>

## Value - Financial Outcomes
- Average total LOS fell 0.5 days (6.2 vs. 5.7)
- Hospital net revenue grew 7.8%
- Contribution margin of index hospitalization grew 16.9%
- 30-day readmission rate fell 44%
ProvenCare®

- CABG
- Angioplasty
- Angioplasty + AMI
- Hip replacement
- Cataract
- EPO
- Perinatal
- Bariatric surgery
- Low back
ProvenCare® - Chronic Disease Optimization
ProvenCare® - Chronic Disease Portfolio

- Diabetes
- Congestive Heart Failure
- Coronary Artery Disease
- Hypertension
- Prevention Bundle
## Diabetes "Bundle"

<table>
<thead>
<tr>
<th>Measures</th>
<th>GHS Quality Targets</th>
<th>CPSL FY07</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Performance Criteria</td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Every 6 months</td>
</tr>
<tr>
<td>HgbA1C measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HgbA1C control</td>
<td>&lt; 7</td>
<td>7 to 9</td>
</tr>
<tr>
<td>LDL measurement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LDL control</td>
<td>&lt; 100</td>
<td>&lt; 130</td>
</tr>
<tr>
<td>Blood pressure control</td>
<td>&lt; 130/80</td>
<td>&lt; 140/90</td>
</tr>
<tr>
<td>Retinal exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine (protein) exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foot exam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza immunization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumococcal immunization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of ACE/ARB for microalbuminuria/DM nephropathy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of ACE/ARB for hypertension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients who receive/achieve ALL of the above</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yearly</td>
</tr>
</tbody>
</table>
Diabetes Profile Report – Primary Care Bundle (>23,000 patients)
Coronary Artery Disease Profile Report
Primary Care Bundle Summary

% Pts - 0 Measures Met
% Pts - 1 Measure Met
% Pts - 2 Measures Met
% Pts - 3 Measures Met
% Pts - 4 Measures Met
% Pts - 5 Measures Met
% Pts - 6 Measures Met
% Pts - 7 Measures Met
% Pts - 8 Measures Met
% Pts - All Measures Met

% of total CAD patients

7 met
8 met
9 (all) met

3/31/09 (19%)
12/31/08 (19%)
6/30/08 (20%)
4/30/08 (19%)
3/31/08 (19%)
12/31/07 (17%)
9/30/07 (16%)
9/30/06 (8%)
ProvenHealth Navigator
(Advanced Medical Home)
ProvenHealth Navigator
(Advanced Medical Home)

- Partnership between primary care physicians and GHP that provides 360-degree, 24/7 continuum of care
- “Embedded” nurses
- Assured easy phone access
- Follow-up calls post-discharge and post-ED visit
- Telephonic monitoring/case management
- Group visits/educational services
- Personalized tools (e.g., chronic disease report cards)
Patient-Centric Focus

- Patient engagement
- Physician endorsement and oversight of care continuum
- Individualized care plans (e.g., diabetic report card, MyGeisinger)
- Automated assessment and triage
- Complete, accurate, searchable data
- Complete, accurate, current registries
- Coordinated care (between patient/family/nurse/physicians)
Phase - 1 Total Medical Cost Decreased 4% for Entire Population; ROI = 250%
Readmission Rate

<table>
<thead>
<tr>
<th></th>
<th>Jan-Apr 2007</th>
<th>Jan-Apr 2008</th>
<th>Change</th>
<th>Trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed Phase 2</td>
<td>17.0%</td>
<td>12.0%</td>
<td>-5.0%</td>
<td>-29.4%</td>
</tr>
<tr>
<td>Medicare Control Population</td>
<td>16.8%</td>
<td>17.6%</td>
<td>0.8%</td>
<td>4.8%</td>
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</tbody>
</table>
ProvenHealth Navigator
(Advanced Medical Home)

• Currently serves 35,000 Medicare recipients and 15,000 commercial patients

• Results from best primary care sites:
  • ↓ 25% patients’ admissions
  • ↓ 23% Days/1000
  • ↓ 53% readmissions following discharge
  • Significant benefit to patients and families, avoiding multiple hospital admissions
Transitions of Care
Transitions of Care

- Began January 2008 as joint quality/efficiency initiative that complements **ProvenHealth Navigator (Advanced Medical Home)**
- Inpatient and outpatient interventions
  - Eliminate unnecessary admissions
  - Reduce readmissions
    - Free up capacity for more acutely-ill patients
- Focused on heart failure, medical/surgical inpatient wards, and Emergency Department)
- Program expansion is planned, including addressing LOS
- Modeling and predictive instruments used
Preliminary First Quarter Results

GWV Medicine Service
30 Day Readmission Rate

FY2008 FY2009

16.0% 13.3%

17% Reduction

GMC Medicine Service
30 Day Readmission Rate

FY2008 FY2009

13.7% 10.7%

22% Reduction
Fundamental Innovation at Geisinger
How and Why?

Anatomy

• Continuum of Care (provider “all-in”)
• Hub and spoke provider design
• Aligned incentives
• Insurance/provider joint goals

Market

• Demography
• Brand
• Market share (insurance and provider)
• Electronic enabler across 43 counties
Fundamental Innovation at Geisinger How and Why?

Financial Health
- Balance sheet
- Operating margin
- “Hedging” strategy
- Planned risk taking

Sociology
- IHS culture
- Clinical leadership (insurance and provider)
- Patient centric design
- The “common good” goal
All of the above
“permissive” but not enough

Clinical leadership
Pride of purpose
Professionalism

Overarching
Caveats

• Scalable?
• Applicable to non-IDS?
• Applicable in absence of real-time EHR?
• Applicable in fee-for-service settings?
• Pending wider use in marketplace