The Geisinger Model: A Systematic Approach to Quality and Value

National Health Policy Forum
Washington, DC
October 14, 2011

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

Provider Facilities

- Geisinger Medical Center
  - Hospital for Advanced Medicine, Janet Weis Children’s Hospital, Women’s Health Pavilion, Level I Trauma Center, Ambulatory Surgery Center
- Geisinger Northeast (2 campuses)
  - Geisinger Wyoming Valley Medical Center with Heart Hospital, Henry Cancer Center, Level II Trauma Center
  - South Wilkes-Barre Adult & Pediatric Urgent Care, Ambulatory Surgery Center, inpatient rehabilitation, pain mgmt, sleep disorders
- Marworth Alcohol & Chemical Dependency Treatment Center
  - >53K admissions/OBS & SORU
  - ~820 licensed in-patient beds

Physician Practice Group

- Multispecialty group
- ~900 physicians
- ~520 advanced practitioners
- ~65 primary and specialty clinic sites (37 community practice sites)
- 1 Outpatient surgery center
- >2.1 million outpatient visits
- ~360 residents and fellows

Managed Care Companies

- ~298,000 members (including ~63,000 Medicare Advantage members)
- Diversified products
- >30,000 contracted physicians/facilities
- 43 Pennsylvania (PA) counties

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Geisinger Health System

- Geisinger Community Medical Center
- Bloomsburg Hospital
- Geisinger-Shamokin Area Community Hospital*
- Geisinger Medical Groups

Non-Geisinger Physicians With HER LifeFlight Base

Geisinger ProvenHealth Navigator Sites
Contracted ProvenHealth Navigator Sites
Geisinger Medical Groups
Geisinger Specialty Clinics
Geisinger Inpatient Facilities
Ambulatory Care Facility
Geisinger Health System Hub and Spoke Market Area
Geisinger Health Plan Service Area
Careworks Convenient Healthcare

* A campus of Geisinger Medical Center

Last updated 12/16/10
Electronic Health Record (EHR) update

- **>$135M invested** (hardware, software, manpower, training)
- **Running costs**: ~4.4% of annual revenue of >$3B
- **Fully-integrated EHR**: 37 community practice sites; 2 hospitals; 2 EDs; 6 Careworks retail-based and worksite clinics
  - Acute and chronic care management
  - Optimized transitions of care
- **Networked PHR** - ~178,000 active users (34% of ongoing patients)
  - Patient self-service (self-scheduling, kiosks)
  - Home monitoring integrated with Medical Home
- **“Outreach Health IT”** – 3,159 users in 612 non-Geisinger practices
  - Remote support for regional ICUs
  - Telestroke services to regional EDs
- **Active Regional Health-Information Exchange (KeyHIE)**
  - 18 hospitals, 100+ practices, 500,000 patients consented
- **e-health (eICU®) Programs**
- **Keystone Beacon Community** - $16M Grant from ONCHIT over 3 years
  - HIT-enabled, Community-wide care coordination in 5 rural counties
Awards/Grants

• GHS awarded “Most Wired” health care system by Computer World eight years running
• American Medical Group Association’s 2011 Acclaim Award (recognized for its transforming care delivery: Patient-centric, value-driven innovation initiative)
• 2011 named SDI IHN 100 – Most Integrated Healthcare Networks in the Nation (identifying the 100 top US hospitals based on overall organizational performance)
• 2011 Thomson Reuters (GMC) 100 Top Hospitals: National Benchmarks Award (for overall organizational performance)
• National Human Genome Research Institute $25M Grant over 4 years to a seven-member network group (eMERGE) (integrate genomic information into EHRs to improve patient care)
• June 2010 – NIH Grant $1.8M (further molecular neuroscience, regeneration research)
• 2010 Thomson Reuters 50 Top Hospitals Cardiovascular Benchmarks for Success List (identifies high performing cardiovascular hospitals nationally & sets performance targets for managing & improving cardiovascular services)
The Vision

- Quality
- Innovation
- Market Leadership
  - Growth
  - Scale and Generalize Innovation
- The Geisinger Family
  - Legacy
  - Personal and Professional Well-being
Where Do We Want to Be as a Nation?

1. Affordable coverage for all
2. Payment for value
3. Coordinated care
4. Continuous improvement/innovation
5. National health goals, leadership, accountability

The Path to a High Performance US Health System “A 2020 Vision and the Policies to Pave the Way”, pg. 16-21, The Commonwealth Fund
The Quality of Health Care Delivered To Adults In the United States


BACKGROUND
We have little systematic information about the extent to which standard processes involved in healthcare—a key element of quality—are delivered in the United States.

METHODS
We telephoned a random sample of adults living in 12 metropolitan areas in the United States and...received written consent to copy their medical records...to evaluate performance on 439 indicators of quality of care for 30 acute and chronic conditions as well as preventative care...

RESULTS
Participants received 54.9 percent of recommended care.

CONCLUSIONS
The deficits we have identified in adherence to recommended processes for basic care pose serious threats to the health of the American public. Strategies to reduce these deficits are warranted.
Cost/Quality “Correlation”

MD Longitudinal Cost Efficiency Index
(total cost per case mix-adjusted treatment episode)

Adapted from Regence Blue Shield; Arnie Milstein, MD - Mercer
Cost \downarrow = \text{Quality} \uparrow 
2006-2010
GHS Innovations

Cost/Quality \neq R 
2003

Cost\downarrow \text{ or Quality} \uparrow 
1993-1994
Hillary-Care ‘Debate’
The Key Issues

- Unjustified variation
- Fragmentation of care-giving
- Perverse payment incentives
  - Units of work
  - Outcome irrelevant
- Patient as passive recipient of care
ProvenCare® for Acute Episodic Care (the “Warranty”)
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

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## ProvenCare® CABG: Quality/Value - Clinical Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Before ProvenCare® (n=132)</th>
<th>ProvenCare® (n=321)</th>
<th>% Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-hospital mortality</td>
<td>1.5 %</td>
<td>0.3 %</td>
<td>80 %</td>
</tr>
<tr>
<td>Patients with any complication (STS)</td>
<td>38 %</td>
<td>33 %</td>
<td>13 %</td>
</tr>
<tr>
<td>Patients with &gt;1 complication</td>
<td>8.4 %</td>
<td>5.9 %</td>
<td>30 %</td>
</tr>
<tr>
<td>Atrial fibrillation</td>
<td>24 %</td>
<td>21 %</td>
<td>13 %</td>
</tr>
<tr>
<td>Neurologic complication</td>
<td>1.5 %</td>
<td>0.9 %</td>
<td>40 %</td>
</tr>
<tr>
<td>Any pulmonary complication</td>
<td>7 %</td>
<td>5 %</td>
<td>29 %</td>
</tr>
<tr>
<td>Re-intubation</td>
<td>2.3 %</td>
<td>0.9 %</td>
<td>61 %</td>
</tr>
<tr>
<td>Blood products used</td>
<td>24 %</td>
<td>22 %</td>
<td>8 %</td>
</tr>
<tr>
<td>Re-operation for bleeding</td>
<td>3.8 %</td>
<td>2.8 %</td>
<td>26 %</td>
</tr>
<tr>
<td>Deep sternal wound infection</td>
<td>0.8 %</td>
<td>0.3 %</td>
<td>63 %</td>
</tr>
<tr>
<td>Readmission within 30 days</td>
<td>6.9 %</td>
<td>5.6 %</td>
<td>20 %</td>
</tr>
</tbody>
</table>
ProvenCare® CABG: Clinical Outcomes

(Comparison of before (n=132) and after (n=321) ProvenCare®)

- 80% improvement in In-hospital mortality
- 61% reduction in re-intubations
- 63% reduction in deep sternal wound infection rate
- 40% reduction in neurologic complications
- 29% reduction in pulmonary complications
- 20% reduction in 30 day readmissions w/ 8% reduction in ALOS
ProvenCare® CABG: Financial Outcomes

Hospital:
• Contribution margin increased 17.6%
• Total inpatient profit per case improved $1946

Health Plan:
• Paid out 4.8% less per case for CAB with ProvenCare® than it would have without
• Paid out 28 to 36% less for CAB with GHS than with other providers
ProvenCare® Portfolio

ProvenCare®:

- CABG
- PCI (Percutaneous Coronary Interventions Angioplasty/Angioplasty + AMI)
- Hip replacement
- Cataract
- EPO
- Perinatal
- Bariatric surgery
- Low back
- Lung cancer
- Knee Replacement
ProvenCare® - Chronic Disease
Chronic Disease Portfolio

- Diabetes
- Congestive Heart Failure
- Coronary Artery Disease
- Hypertension
- Prevention Bundle
## Improving Diabetes Care for 24,402 Patients

<table>
<thead>
<tr>
<th></th>
<th>3/06</th>
<th>3/07</th>
<th>10/09</th>
<th>10/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes Bundle Percentage</td>
<td>2.4%</td>
<td>7.2%</td>
<td>12.9%</td>
<td>11.8%</td>
</tr>
<tr>
<td>% Influenza Vaccination</td>
<td>57%</td>
<td>73%</td>
<td>72%</td>
<td>74%</td>
</tr>
<tr>
<td>% Pneumococcal Vaccination</td>
<td>59%</td>
<td>83%</td>
<td>84%</td>
<td>84%</td>
</tr>
<tr>
<td>% Microalbumin Result</td>
<td>58%</td>
<td>87%</td>
<td>79%</td>
<td>78%</td>
</tr>
<tr>
<td>% HgbA1c at Goal</td>
<td>33%</td>
<td>37%</td>
<td>45%</td>
<td>50%</td>
</tr>
<tr>
<td>% LDL at Goal</td>
<td>50%</td>
<td>52%</td>
<td>62%</td>
<td>55%*</td>
</tr>
<tr>
<td>% BP &lt; 130/80</td>
<td>39%</td>
<td>44%</td>
<td>52%</td>
<td>53%</td>
</tr>
<tr>
<td>% Documented Non-Smokers</td>
<td>74%</td>
<td>84%</td>
<td>85%</td>
<td>85%</td>
</tr>
</tbody>
</table>

*Measure change resulted in a 9% decrease February 2010
Cumulative Hazard Function for Macro-Vascular and Micro-Vascular Disease
Micro-vascular (Retinopathy and Amputation)
Cumulative Hazard Function for Macro-Vascular and Micro-Vascular Disease

Macro-vascular outcomes (MI and Stroke)
## Value Driven Primary Care

### Patient Centered Outcome Improvements

<table>
<thead>
<tr>
<th>Microvascular</th>
<th>Macrovascular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retinopathy</td>
<td>Heart Attack</td>
</tr>
<tr>
<td>- 10 fewer cases per 1000</td>
<td>- 30 fewer cases per 1000</td>
</tr>
<tr>
<td>- 750 over six years</td>
<td>- 2250 less over six years</td>
</tr>
<tr>
<td>Amputations</td>
<td>Stroke</td>
</tr>
<tr>
<td>- One less case per 1000</td>
<td>- 20 fewer cases per 1000</td>
</tr>
<tr>
<td>- 75 over six years</td>
<td>- 1500 less over six years</td>
</tr>
</tbody>
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Ongoing Issues

• More individualized targets?
• Smaller cohorts?
• Specialist / PCP interactions
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)
The New York Times

Business Day

Paying to Cut Health Costs

Extra Nurses Help Doctors Keep Patients Out of the Hospital

A Health Insurer Pays More to Save
By Reed Abelson

The American Journal of Managed Care

Value and the Medical Home: Effects of Transformed Primary Care

August 2010

Health Affairs

Reengineering the Delivery System

How Geisinger’s Advanced Medical Home Model Argues The Case For Rapid-Cycle Innovation

November 2010
## ProvenHealth Navigator®
### Expansion since 2007 update

<table>
<thead>
<tr>
<th>Phase</th>
<th>Sites</th>
<th>MA members</th>
<th>Commercial Members</th>
<th>Medicare members</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1 (2007)</td>
<td>3</td>
<td>2,950</td>
<td>650</td>
<td>1,950</td>
<td></td>
</tr>
<tr>
<td>Phase 2 (2008)</td>
<td>10</td>
<td>8,000</td>
<td>8,350</td>
<td>10,950</td>
<td></td>
</tr>
<tr>
<td>Phase 3 (2009)</td>
<td>12</td>
<td>5,650</td>
<td>6,950</td>
<td>7,400</td>
<td></td>
</tr>
<tr>
<td>Phase 4 (2010)</td>
<td>12</td>
<td>2,750</td>
<td>6,900</td>
<td>4,900</td>
<td></td>
</tr>
<tr>
<td>Phase 5 (2011)</td>
<td>7</td>
<td>1,650</td>
<td>4,950</td>
<td>2,950</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>44*</td>
<td><strong>21,000</strong></td>
<td><strong>27,800</strong></td>
<td><strong>28,150</strong></td>
<td><strong>76,950</strong></td>
</tr>
</tbody>
</table>

- 37 Geisinger primary care practices & 7 non-Geisinger primary care practices

*Implementation dates are approximate / Membership as of April 2011*
Cumulative percent difference in spending (Pre-Rx Allowed PMPM $) attributable to PHN in the first 21 PHN clinics for calendar years 2005-2009. Dotted lines represent 95% confidence interval. P = < 0.003
Physician Group Practice (PGP) Demonstration Project
April 1, 2005 – March 30, 2010

Do large multispecialty group practices deliver higher quality care at lower cost than surrounding physicians and hospitals?

<table>
<thead>
<tr>
<th>NAME</th>
<th>STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billings Clinic</td>
<td>MT</td>
</tr>
<tr>
<td>Dartmouth-Hitchcock Clinic</td>
<td>NH</td>
</tr>
<tr>
<td>Everett Clinic</td>
<td>WA</td>
</tr>
<tr>
<td>Forsyth Medical Group</td>
<td>NC</td>
</tr>
<tr>
<td>Geisinger Clinic</td>
<td>PA</td>
</tr>
<tr>
<td>Marshfield Clinic</td>
<td>WI</td>
</tr>
<tr>
<td>Middlesex Health System</td>
<td>CT</td>
</tr>
<tr>
<td>Park Nicollet Health Services</td>
<td>MN</td>
</tr>
<tr>
<td>St. John’s Health System</td>
<td>MO</td>
</tr>
<tr>
<td>University of Michigan</td>
<td>MI</td>
</tr>
</tbody>
</table>
Physician Group Practice (PGP)
Year 5 – GHS Results

TCC – 1.4% vs. 5.8% National
All quality metrics achieved
No shared Savings
PGP to “Transitions Demonstration” (ACO #1)

Key changes

- Population/Attribution
- Shared Savings Split/“Corridor” of significance
- Quality Criteria/Leading Quality optional module
Caveats I

For all of the Innovations

↓ Cost in hospital
↓ Hospital volume
↓ Total cost of care

∴ New relationship to payer
  or
New payment incentives
  or
Backfilled volume with new payer mix
Caveats II

• Scalable?
• Applicable to non-Integrated Delivery Systems?
• Applicable in absence of real-time EHR?
• Applicable in fee-for-service settings?
• Pending wider use in marketplace
• Support for innovation from CMMI/CMS?
• What will the market based response be?
Scalability Experiments

PGP ➔ Transition Demonstration (ACO #1)
Clinical Enterprise Partnering

- Consulting
- GHS Collaboratives
  - Jefferson University Health / Main Line Health
  - HSHS/Bon Secours
  - Premier Integrated Care Collaborative
  - Orlando – UCF
  - GE Beta Test – Milwaukee
  - Care Connectivity Consortium (Mayo/Intermountain/Kaiser/Group Health)
  - ACS Commission on Cancer Collaboration

- GIO Scaling/Generalizing
  - New Jersey Risk Products
  - TPA Plus
    - Delaware, West Virginia, GE

- National Innovation Center