The Geisinger Model:
Successful Implementation Strategies

October 21, 2010
Massachusetts Medical Society

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Executive Vice President, Chief Medical Officer
Geisinger Health System

The Quality of Health Care Delivered To Adults In the United States

McGlynn, Elizabeth A.: Asch, Steven M.: Adams, John: Jeesey, Joan: Hicks, Jennifer:
DeCristofaro, Alison: Kerr, Eve A.

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”

50th %ile

Low Efficiency High Quality
High Efficiency High Quality (Dream Suppliers)

Low Efficiency Low Quality (Nightmare Suppliers)

Lower Efficiency/ Higher Cost
Higher Efficiency/ Lower Cost

MD Quality Index (outcomes or % adherence to EBM)

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

Adapted from Regence Blue Shield; Arnie Milstein, MD - Mercer

Total National Health Expenditures, 2008–2017 Projected and Various Scenarios

Dollars in trillions

$4.5
$4.0
$3.5
$3.0
$2.5
$2.0


* Selected individual options include improved information, payment reform, and public health.
Source: Based on projected expenditures absent policy change and Lewin estimates.
International Comparison of Spending on Health, 1980–2006

Average spending on health per capita ($US PPP*)

United States
Germany
Canada
Netherlands
France
Australia
United Kingdom

* PPP = Purchasing Power Parity.

Where We Want to Be

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

• Reorganization of healthcare delivery to make it proactive
• Healthy relationship with a health plan to provide timely data and expertise is needed
• Use HIT to engage patient and provider

ACO Federal Program Highlights

• Initial program in 2012 is “shared savings”—this model is first step toward risk taking and is “upside” only to providers if savings are achieved vs. fee for service — there is no ‘downside” risk to providers if savings not achieved.
• Later models (first via pilot programs) are expected to put providers at downside risk on a service line (episode of care) basis, and potentially on a global fee or capitation basis.
Accountable Care

Our Must Do’s Anyway…

1. Information Technology
   You can’t manage what you can’t measure.

2. Accelerate Clinical Transformation
   Higher Quality Care is Cheaper.

3. Primary Care Network Development
   Underlying Framework the Future.

4. Chronic Disease Management
   Hospital Utilization of Chronic Care Patients must Shrink.

5. Performance Management Agreements
   Aligning Incentives Economically.

6. Health Insurance
   Picking the Right Partner is critical.
The Legacy

“Make my hospital right, make it the best.”

Abigail Geisinger
1827-1921

“Geisinger Quality – Striving for Perfection”…2006 - 2011
Geisinger Health System
An Integrated Health Service Organization

Provider Facilities
- Geisinger Medical Center
  - Hospital for Advanced Medicine & the Janet Weis Women’s & Children’s Hospital, Level I & II Trauma Center
- Geisinger Northeast (2 campuses)
- Geisinger Wyoming Valley Medical Center with Heart Hospital, Henry Cancer Center, Level II Trauma Center
- South Wilkes-Barre Ambulatory Surgery, Adult & Pediatric Urgent Care, Pain Medicine, Sleep Medicine
- Marworth Alcohol & Chemical Dependency Treatment Center
- 3 Ambulatory surgery centers
- >48K admissions/OBS & SORU
- ~620 licensed in-patient beds

Physician Practice Group
- Multispecialty group
  - ~860 physicians
  - ~460 advanced practitioners
  - ~62 primary and specialty clinic sites (37 community practice sites)
- >2.8 million outpatient visits
- ~350 residents and fellows

Managed Care Companies
- ~250,000 members (incl. ~49,000 Medicare Adv.)
- Diversified products
- >25,000 contracted physicians/facilities (including 110 non-Geisinger hospitals)
- 42 PA counties

Electronic Health Record (EHR)
- > $130M invested (hardware, software, manpower, training)
- Running costs: ~4.4% of annual revenue of > $2.3B
- 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 - ~155,000 active users (33% of ongoing patients)
  - Patient self-service (self-scheduling, kiosks)
  - Home monitoring integrated with Medical Home
- "Outreach EHR" - 2,600 non-Geisinger physician users
  - Regional image distribution
- Active Regional Health-Information Exchange (KeyHIE)
  - 11 hospitals, 90+ practices, 400,000 patients consented
- Keystone Beacon Community
  - HIT-enabled, Community-wide care coordination in 5 rural counties
Innovation Initiatives

- ProvenCare® for Acute Episodic Care (the “Warranty”)  
- ProvenCare® Chronic Disease  
- ProvenHealth Navigator℠ (Advanced Medical Home)  
- Transitions of Care

The Geisinger Advantage

- Our physicians and professional staff  
- Our market  
- Vision and leadership  
- Operational and professional integration  
- Enterprise-wide clinical decision support (via the EHR)  
- Accountability, transparency, incentives – all aligned  
- Our insurance/provider “sweet spot”
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
# 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

![Chart showing % patients receiving all ProvenCare components from Feb 06 to Apr 10]
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® - Chronic Disease
Chronic Disease Portfolio

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

Improving Diabetes Care for 24,184 patients

<table>
<thead>
<tr>
<th></th>
<th>3/06</th>
<th>3/07</th>
<th>7/09</th>
<th>7/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes Bundle Percentage</td>
<td>2.4%</td>
<td>7.2%</td>
<td>11.9%</td>
<td>12.9%</td>
</tr>
<tr>
<td>% Influenza Vaccination</td>
<td>57%</td>
<td>73%</td>
<td>74%</td>
<td>75%</td>
</tr>
<tr>
<td>% Pneumococcal Vaccination</td>
<td>59%</td>
<td>83%</td>
<td>84%</td>
<td>84%</td>
</tr>
<tr>
<td>% Microalbumin Order</td>
<td>58%</td>
<td>87%</td>
<td>88%</td>
<td>88%</td>
</tr>
<tr>
<td>% HgbA1c at Goal</td>
<td>33%</td>
<td>37%</td>
<td>43%</td>
<td>52%</td>
</tr>
<tr>
<td>% LDL at Goal</td>
<td>50%</td>
<td>52%</td>
<td>61%</td>
<td>54%*</td>
</tr>
<tr>
<td>% BP &lt; 130/80</td>
<td>39%</td>
<td>44%</td>
<td>52%</td>
<td>54%</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
### Improving CAD Care for 15,220 Patients

<table>
<thead>
<tr>
<th>Measure</th>
<th>9/06</th>
<th>3/07</th>
<th>7/09</th>
<th>7/10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAD Bundle Percentage</strong></td>
<td>8%</td>
<td>11%</td>
<td>20%</td>
<td>22%</td>
</tr>
<tr>
<td>% LDL &lt;100 or &lt;70 if High Risk</td>
<td>38%</td>
<td>37%</td>
<td>47%</td>
<td>49%</td>
</tr>
<tr>
<td>% ACE/ARB in LVSD,DM, HTN</td>
<td>65%</td>
<td>66%</td>
<td>76%</td>
<td>76%</td>
</tr>
<tr>
<td>% BMI measured</td>
<td>79%</td>
<td>86%</td>
<td>98%</td>
<td>99%</td>
</tr>
<tr>
<td>% BP &lt; 140/90</td>
<td>74%</td>
<td>74%</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td>% Antiplatelet Therapy</td>
<td>89%</td>
<td>91%</td>
<td>92%</td>
<td>92%</td>
</tr>
<tr>
<td>% Beta Blocker use S/P MI</td>
<td>97%</td>
<td>97%</td>
<td>97%</td>
<td>97%</td>
</tr>
<tr>
<td>% Documented Non-Smokers</td>
<td>86%</td>
<td>86%</td>
<td>87%</td>
<td>87%</td>
</tr>
<tr>
<td>% Pneumococcal Vaccination</td>
<td>80%</td>
<td>80%</td>
<td>86%</td>
<td>86%</td>
</tr>
<tr>
<td>% Influenza Vaccination</td>
<td>60%</td>
<td>74%</td>
<td>76%</td>
<td>78%</td>
</tr>
</tbody>
</table>

### CAD Bundle Primary Care Average

![Graph showing the improvement in CAD Bundle Percentage over time with an R^2 of 0.800](image)
Improving Preventive Care for 211,896 Patients

<table>
<thead>
<tr>
<th>Service</th>
<th>11/07</th>
<th>7/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Preventive Bundle</td>
<td>9.2%</td>
<td>28%</td>
</tr>
<tr>
<td>Breast Cancer Screening (q 2 40-49, q 1 50-74)</td>
<td>46%</td>
<td>61%</td>
</tr>
<tr>
<td>Cervical Cancer Screening (q 3 yr Age 21-64)</td>
<td>64%</td>
<td>74%</td>
</tr>
<tr>
<td>Colon Cancer Screening (Age 50-84)</td>
<td>44%</td>
<td>63%</td>
</tr>
<tr>
<td>Prostate Cancer Discussion (Age 50-74)</td>
<td>72%</td>
<td>75%</td>
</tr>
<tr>
<td>Lipid Screening (Every 5 yr M &gt; 35, F &gt; 45)</td>
<td>75%</td>
<td>85%</td>
</tr>
<tr>
<td>Diabetes Screening (Every 3 yr &gt; 45)</td>
<td>85%</td>
<td>88%</td>
</tr>
<tr>
<td>Obesity Screening (BMI in Epic)</td>
<td>77%</td>
<td>96%</td>
</tr>
<tr>
<td>Documented Non-Smokers</td>
<td>75%</td>
<td>78%</td>
</tr>
<tr>
<td>Tetanus Diphtheria Immunization (every 10 yr)</td>
<td>35%</td>
<td>68%</td>
</tr>
<tr>
<td>Pneumococcal Immunization (Once Age &gt;65)</td>
<td>84%</td>
<td>86%</td>
</tr>
<tr>
<td>Influenza Immunization (Yearly Age &gt;50)</td>
<td>47%</td>
<td>57%</td>
</tr>
<tr>
<td>Chlamydia Screening (Yearly Age 18-25)</td>
<td>22%</td>
<td>35%</td>
</tr>
<tr>
<td>Osteoporosis Screening (every 3 yr Age &gt; 65)</td>
<td>52%</td>
<td>73%</td>
</tr>
<tr>
<td>Alcohol Intake Assessment</td>
<td>84%</td>
<td>89%</td>
</tr>
</tbody>
</table>

Ongoing Issues

- More individualized targets?
- Smaller cohorts?
- Specialist / PCP interactions
ProvenHealth Navigator<sup>SM</sup> (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)
ProvenHealth Navigator™
(Advanced Medical Home)

• Currently serves 40,000 Medicare recipients and 25,000 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
Value Reimbursement Program

- Fee For Service
- P4P payments for quality outcomes
- Practice transformation stipends
  - PCP
  - Practice
- Value based incentive payments
  - Opportunity based on efficiency results
  - Payments distributed based on quality achievement

Improving Value
Redesigning Care Delivery by Integrating Specialists and the Patient Centered Medical Home
Every System is Perfectly Designed to Achieve the Results It Gets

- Problem to solve
  - “how can we successfully integrate specialty care with the PCMH (Proven Health Navigator) to improve quality, improve efficiency, and reduce cost for the population we serve?”

- Solution
  - We need to move away from a “widget-care” model to a value-based model.
  - To create such a model, we need to understand what results we could achieve by redesigning our systems of care on a small scale first (pilots)

Caveat – why we are doing what we are doing the way we are doing it

- No one has been able to solve this – so we need to be careful and thoughtful
- We are playing in complex systems that need to be respected – small scale piloting is safest and best
- We cannot create a new care and financial model without first getting some real data
Endocrinology/PCMH (Selinsgrove) Pilot
High Risk Diabetes Program

HgbA1c
Bundle not met
N=346

PCP
A1c 7-8%
Or not on file
N=184

GHP
Modules of Care
A1c 8-9%
N=98

Specialty
Endocrine Care
A1c >9%
N=64

Nephrology/PCMH (Knapper)
Hypertension Pilot

• Principle Group – Systolic BP > 170
  – Initial Nephrology Evaluation for evaluation and therapy
  – Subsequent care through primary care site
  – Frequent reassessment, adjustment of therapy without direct practitioner/patient interaction

• Secondary Group – Systolic BP > Goal but < 170
  – Nephrology Department will develop guidelines/protocols for HTN for community practice site
  – Act as resource for clinical updates
  – Provide training of support staff in BP assessment
  – Act as consultant (w/o direct patient contact as requested)
Improvement in Quality Measure
DXA in Women >65

Drivers

• Health maintenance reminders (passive, point of service)
• Best practice alerts (active, point of service)
• Partnerships (proactively, population management – partnership between primary care and rheumatology)
• HiROC Program – inpatient and outpatient
• Testing access (mobile DXA)
Results

• N > 26,000 women
  – Baseline (May 2006) – 44%
  – Last data point (Feb 2010) – 75%

Nationally, this measure has been reported at about 20-30%. Using technology, process redesign, programmatic care, and testing access, we have improved this quality indicator over four years to levels not achieved elsewhere.
Anticoagulation Management Program
2009

Overview

- 7,057 Active Patients
- 25,792 Total Patients
- >1% per month growth rate
- ~11,000 Encounters per month
- 1.53 encounters per patient per month
- 70% of INR’s within Therapeutic Range
- 175-250 new patients per month
- 14 FTE Pharmacists
- 7 support staff
Incidence of Adverse Events

Comparison of GHS Anticoagulation Management Service with Literature

Incidence of Adverse Events

<table>
<thead>
<tr>
<th></th>
<th>GHS Anticoagulation Clinics(1)</th>
<th>Reference Anticoag Clinics (2)</th>
<th>Usual Practice (non-GHS Patients)*</th>
<th>GHS Non-Anticoag Clinic Patients (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of Bleeding</td>
<td>8.67%</td>
<td>15.30%</td>
<td>35.30%</td>
<td>17.10%</td>
</tr>
<tr>
<td>Rate of Thromboembolic Events</td>
<td>1.54%</td>
<td>3.60%</td>
<td>11.80%</td>
<td>20.60%</td>
</tr>
</tbody>
</table>

(1) Based on 2004-2009 GHS Anticoag data-total of 8847 patients on continuous therapy
(2)Bungard TJ, Gardner L, Archer SL; Evaluation of a pharmacist-managed anticoagulation
(3) Based on 2009 GHS data - total of 307 patients on continuous therapy

Stroke Prevention

- 3,117 patients were actively managed on anticoagulation therapy during calendar year 2009, with a diagnosis of A-Fib
- For every 33 A-fib patients on anticoagulation therapy 1 stroke per year is avoided
- 94 potential strokes avoided during 2009
Summary

• Quality and efficiency are inextricably linked together
• Efficiency originates from the same place as quality – fundamental care model redesign
• At Geisinger, we are trying to reinvent many aspects of the care process
• Geisinger has many advantages due to our integrated delivery system and its “Sweet Spot”

Central teachers gain $7G average
Super: Health-care savings balance rises in contract

By CARE GERS
Press Enterprise Staff

SCHOOL CLOSED THIS Week — Central California teachers will see their average salary of $69,417 jump up by $2,000 under a new, three-year contract, newspaper reports said.

The tentative agreement gives 6.54 percent raises to their teachers, the largest in the area for the coming year.

But Superintendent Harry Matthes said the district can afford the pay increases because of savings that will slash health insurance costs.

The changes will let Central keep the beginning salary of $39,400 among area school districts, he said.

The settlement will save $8.5 million in the coming year, Matthes estimated. However, negotiations would involve expenses, he added.

Higher starting salary
Pay raises were set at 6.71 percent for the teachers' group, 6.88 percent for the support staff in the second year, 2011-12, and 4.30 percent in 2011-13.

These raises would push the average teacher salary up to $69,417 in the coming year, from an average of $67,259 this school year ending June 14.

Central, according to the starting salary for teachers. The $39,400 figure would jump up in those years by $3,250; calculations show.

The starting salary will be $39,400 in the coming year, $3,250 for the second year and $3,300 for the third year, under the contract.

But the contract isn't just about pay raises, he said.

Health insurance
Back in April, Central was predicting a rise in insurance premiums. To lower costs, the district switched from Capital Blue Cross to Geisinger Health Plan for all employees.

The switch will reduce costs by $140,000 to $180,000, Matthes estimated.

The union accepted the change as part of the new contract, Matthes said.

Now, instead of paying 7 to 8 percent increases in insurance costs, Central is paying just up to 2.5 percent increases, the superintendent said.

Central’s average health insurance cost is $8,600 per teacher, Matthes estimated. He said other school districts are paying

Teachers’ insurance
Teachers, however, also have health insurance. The district is splitting the cost with the teachers.

The new plan will save an additional $250,000, Matthes said.

Higher pay
Teachers had been paying 10 percent of their insurance premiums. That will increase to 11 percent in the first year of the new contract and 12 percent in the second year and 13 percent the third year.

Matthes gave examples of what they might pay in the coming year. These figures do not include the “take-home” option.

The premiums for a single employee is $4,100, with the employee paying $600.

The premium for a family of four is $10,900, so the employee pays $3,150.

The rate is different for non-teachers employees, Matthes said. Support staff members pay 5 percent of their premiums, while administrators pay 6 percent of their premiums, plus 8 percent of their salaries.

Expense breakdown
The centenarian cost of $8.5 million for the coming year includes insurance expenses, $1 million for teachers and $600,000 in new pay raises, Matthes estimated.

In 2010-11, Central paid about $7.6 million in teacher salaries and $8.7 million in benefits, Matthes said.

Despite the reopening, the Central board is not increasing taxes in the coming year under its recently passed budget.
The Legacy

“Make my hospital right, make it the best.”

Abigail Geisinger
1827-1921

“Geisinger Quality – Striving for Perfection”…2006 - 2011