The Geisinger Experience

Hospital Association of Southern California
Annual Meeting
Santa Barbara, CA
April 14, 2016

Glenn Steele, Jr., MD, PhD
Chairman, xG Health Solutions
& Past President & CEO, Geisinger Health System
Where We Are Now Nationally

- Unjustified variation in quality, access, and cost of care

- Unwarranted and fragmented caregiving

- An addiction to perverse payment incentives
  - Piece rate Medicare/Medicaid payment model
    - Driving up units of work
    - Driving up cost
    - Diminishing value and quality
  - Piece rate quality payments + expanded “Pay & Chase”

- Transition to new payment incentives (but fundamentally hospital-centric delivery models)
Where Do We Want to Be?

- Affordable coverage for all
- Payment for value
- Coordinated care
- Continuous improvement/innovation
- National health goals, leadership, and accountability
Geisinger Health System
An Integrated Health Service Organization

Provider Facilities
- Geisinger Medical Center and its Shamokin Hospital Campus
- Geisinger Wyoming Valley Medical and its South Wilkes-Barre Campus
- Geisinger Community Medical Center, Scranton, PA
- Geisinger-Bloomsburg Hospital
- Geisinger-Lewistown Hospital
- Holy Spirit Health System
- Marworth Alcohol & Chemical Dep Treatment Center
- Outpatient surgery centers
- Nursing Homes
- Home health & hospice services
- Admissions/OBS & SORUs
- Licensed inpatient beds
- AtlantiCare Health System

But not like Kaiser!

Physician Practice Group
- Multispecialty group
- Physician FTEs
- Advanced practitioners
- Primary & specialty clinic sites
- Outpatient surgery center
- Outpatient visits
- Resident & fellow FTEs
- Medical students

Managed Care Companies
- Medicare Advantage members and Medicaid members
- Diversified products
- Contracted providers/facilities
- Offered on public & private exchanges
- Members in several states
### Transforming Healthcare with Technology

Over $200M invested  (hardware, software, manpower, training)

<table>
<thead>
<tr>
<th>Running Costs</th>
<th>~4.0% of over $3.9 Billion in annual revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully-integrated EHR</td>
<td>46 Community Practice Sites</td>
</tr>
<tr>
<td>Networked Patient Portal</td>
<td>~268,386 Active Users  (41% of ongoing patients)</td>
</tr>
<tr>
<td>“Outreach Health IT”</td>
<td>10,221 Users in 865 non-Geisinger practices</td>
</tr>
<tr>
<td>Active Regional Health-Information Exchange (KeyHIE)</td>
<td>22 hospitals, 175 practices, over 1M patients consented, publish 700,000+ documents monthly, participants access ~89K patients monthly</td>
</tr>
<tr>
<td><strong>e-health (eICU®) Programs</strong></td>
<td>Keystone Beacon Community</td>
</tr>
<tr>
<td><strong>CDIS (Clinical Decision Intelligence System)</strong></td>
<td>Functional ‘Apps’ Portfolio</td>
</tr>
</tbody>
</table>

...and no longer monogamous
The “Sweet Spot” for Partnership & Innovation

Aligned objectives between the health plan & clinical enterprise, with each organization contributing what it does best.

**Health Plan**
- Population analysis
- Align reimbursement
- Finance care
- Engage member and employer
- Report population outcomes
- Take to market

**Joint**
- Population Health
- Population Served
- EHR / Infrastructure

**Clinical Enterprise**
- Care delivery
- Identify best practice
- Design systems of care
- Interpret clinical reports
- Continually improve
- Activate patient & family
Strategic Priorities

Quality and Innovation
- Patient-centered focus
- Patient activation (empowerment)
- Culture of quality, safety, and health
- Value re-engineering

Market Leadership
- Extending the GHS brand
- Scaling and generalizing innovation

The Geisinger Family
- Personal and professional well-being
The Geisinger Value Proposition

Re-engineering Touchstones:

1) Extract Hurtful Cost
2) ↑ Quality = ↓ Cost
Sweet Spot Innovations

1990s
- EHR Installation
- Medicare Advantage

2000-2006
- Non-proprietary EHR
- Patient Portal
- Value Re-engineering
  - ProvenCare® Acute
  - ProvenCare® Chronic
- PGP Demo (ACO Precursor)
- Data Warehouse
- Quality Incentives
- PPO

2007-2010
- Value Re-engineering
  - ProvenHealth Navigator®
  - Practice-based CM
  - Clinical Decision Support

2011-2012
- Robust Care Gap Program
- Transition of Care Bundle
- Specialty PCP Integration
- Natural Language Processing
- Proof of Generalizability Beyond Central PA
- OpenNotes
- SNFist

2013-
- Launch of xG Health
  - Medicaid MCO
  - Private/Public Exchanges
  - Urgent Care Centers
  - CPSL Alternative to ED
  - Proven® Biologics
  - Geisinger in Motion

xG Health Solutions, Inc. Confidential and Proprietary Information
Sweet Spot Innovations

Transforming Healthcare
The Beginning: ProvenCare CABG

ProvenCare

A provider-driven, pay-for-performance program for acute episodic cardiac surgical care

ProvenCare Portfolio

ProvenCare:

- ProvenCare Autism
- ProvenCare Bariatric Surgery
- ProvenCare Cellulitis
- ProvenCare Chronic Obstructive Pulmonary Disease
- ProvenCare Coronary Artery Bypass Graft
- ProvenCare CNS Mets
- ProvenCare Epilepsy
- ProvenCare Fragility Hip Fracture
- ProvenCare Heart Failure
- ProvenCare Hepatitis C
- ProvenCare Hysterectomy
- ProvenCare Inflammatory Bowel

- ProvenCare Lung Cancer (CoC Collaborative)
- ProvenCare Lumbar Spine
- ProvenCare Migraine
- ProvenCare Multiple Sclerosis
- ProvenCare Percutaneous Coronary Intervention
- ProvenCare Perinatal
- ProvenCare Psoriasis
- ProvenCare Rectal Cancer
- ProvenCare Rheumatoid Arthritis
- ProvenCare Total Hip
- ProvenCare Total Knee

ProvenCare Evidence-based Guidelines (EBG) (in conjunction with PRIDE):

- Chest Pain—R/O MI (ED)
- Kidney Stone (ED)
- Newborn Protocols
- Pediatric Abdominal Pain (R/O Appendicitis (ED))

- Pediatric Head Injury (ED)
- Pediatric Pulmonary Embolism (ED)
- Sepsis (ED) & Sepsis (Med/Surg)
- Vent Management
ProvenCare Biologics

Why

- Specialty drugs will account for nearly half of all drug sales in coming years

Targets

- Hepatitis C
- Inflammatory Bowel Disease
- Multiple Sclerosis
- Rheumatoid Arthritis
- Oncology
- Psoriasis

Scope

- GHS projected 2014 expense avoidance of $58M
- GHP expected to avoid expenses of $172M

Approach

- Process Redesign
- Channel Redesign
- Formulary Management & Contracting
- Total Cost of Care
The company’s new Centers of Excellence program is the first of its kind, partnering with six of the nation’s foremost healthcare systems to provide better care.

“We devoted extensive time developing Centers of Excellence to improve the quality of care our associates’ receive. We identified six renowned health systems that meet the highest quality standards for heart, spine, and transplant surgery. Through these organizations, our associates will have no out-of-pocket expenses and a greater peace of mind knowing they are receiving exceptional care from a facility that specializes in the procedure they require. This is the first time a retailer has offered a comprehensive, nationwide program for heart, spine, and transplant surgery.”

–Sally Welborn, SVP, Global Benefits, Walmart
ProvenCare Chronic Disease

Portfolio of ProvenCare Chronic Disease programs:

• Diabetes
• Heart Failure
• Coronary Artery Disease
• Hypertension
• Chronic Obstructive Pulmonary Disease
• Prevention Set of Performance Measures
## Improving Diabetes Care for 30,294 Patients

<table>
<thead>
<tr>
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<th>3/06</th>
<th>12/14</th>
<th>11/15</th>
<th>12/15</th>
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<tbody>
<tr>
<td><strong>Number of Patients</strong></td>
<td>20,178</td>
<td>29,805</td>
<td>30,181</td>
<td>30,294</td>
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<tr>
<td><strong>Diabetes Bundle Percentage</strong></td>
<td>2.4%</td>
<td>19.2%</td>
<td>20.1%</td>
<td>20.2%</td>
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<tr>
<td>% Pneumococcal Vaccination</td>
<td>59%</td>
<td>80%</td>
<td>81%</td>
<td>81%</td>
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<tr>
<td>% Microalbumin Result</td>
<td>58%</td>
<td>76%</td>
<td>77%</td>
<td>77%</td>
</tr>
<tr>
<td>% HgbA1c at Goal</td>
<td>33%</td>
<td>50%</td>
<td>51%</td>
<td>51%</td>
</tr>
<tr>
<td>% w/LDL &lt;100 or &lt;70 with CAD or High Intensity Statin</td>
<td>50%</td>
<td>65%</td>
<td>66%</td>
<td>66%</td>
</tr>
<tr>
<td>% BP at Goal</td>
<td>39%</td>
<td>76%</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td></td>
<td>*Change to @ Goal on patient list July 2014</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Documented Non-Smokers</td>
<td>74%</td>
<td>85%</td>
<td>85%</td>
<td>85%</td>
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</table>
ProvenCare Type 2 Diabetes Value-driven Care Outcome Improvements

Heart Attack
- Less than 3 years
- 306 prevented with estimated savings of $27,111/case = $8.3M

Stroke
- Less than 3 years
- 141 prevented with estimated savings of $2,921/case = $412K

Retinopathy
- Less than 3 years
- 166 cases prevented!
- Quality of life maintained
- Savings...priceless!
## Improving CAD Care for 17,866 Patients

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<th>12/14</th>
<th>11/15</th>
<th>12/15</th>
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<tbody>
<tr>
<td><strong>Number of Patients</strong></td>
<td>13,688</td>
<td>18,422</td>
<td>17,910</td>
<td>17,866</td>
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<tr>
<td><strong>CAD Bundle Percentage</strong></td>
<td>8%</td>
<td>30%</td>
<td>28%</td>
<td>26%</td>
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<tr>
<td>LDL &lt;100 or &lt;70 High Risk or</td>
<td>38%</td>
<td>70%</td>
<td>70%</td>
<td>70%</td>
</tr>
<tr>
<td>High Intensity Statin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% ACE/ARB in LVSD, DM, HTN</td>
<td>65%</td>
<td>78%</td>
<td>78%</td>
<td>77%</td>
</tr>
<tr>
<td>% BMI measured</td>
<td>79%</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>% BP &lt;140/90</td>
<td>74%</td>
<td>79%</td>
<td>76%</td>
<td>76%</td>
</tr>
<tr>
<td>% Antiplatelet Therapy</td>
<td>89%</td>
<td>95%</td>
<td>94%</td>
<td>94%</td>
</tr>
<tr>
<td>% Beta Blocker use S/P MI</td>
<td>97%</td>
<td>97%</td>
<td>96%</td>
<td>96%</td>
</tr>
<tr>
<td>% Documented Non-Smokers</td>
<td>86%</td>
<td>86%</td>
<td>86%</td>
<td>86%</td>
</tr>
<tr>
<td>% Influenza Vaccination</td>
<td>60%</td>
<td>72%</td>
<td>74%</td>
<td>68%</td>
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## Improving Preventive Care for 264,530 Patients

<table>
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<th>12/14</th>
<th>11/15</th>
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<tbody>
<tr>
<td><strong>Number of Patients</strong></td>
<td>203,074</td>
<td>260,367</td>
<td>263,329</td>
<td>264,530</td>
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<tr>
<td><strong>Adult Preventive Bundle</strong></td>
<td>9.2%</td>
<td>19%</td>
<td>21%</td>
<td>19%</td>
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<tr>
<td>Breast Cancer Screening (q 2 yrs 50-74) (discuss q 2 yrs 40-49)</td>
<td>46%</td>
<td>74%</td>
<td>74%</td>
<td>73%</td>
</tr>
<tr>
<td>Cervical Cancer Screening (q 3 yr Age 21-29) (q 5 yr Age 30-64)</td>
<td>64%</td>
<td>73%</td>
<td>73%</td>
<td>73%</td>
</tr>
<tr>
<td>Colon Cancer Screening (Colonoscopy q 10 yrs Age 50-74 or FOBT yearly)</td>
<td>44%</td>
<td>65%</td>
<td>66%</td>
<td>66%</td>
</tr>
<tr>
<td>Lipid Screening (Every 5 yr M &gt; 35, F &gt; 45)</td>
<td>75%</td>
<td>87%</td>
<td>88%</td>
<td>88%</td>
</tr>
<tr>
<td>Diabetes Screening (Every 3 yr &gt; 45)</td>
<td>85%</td>
<td>93%</td>
<td>93%</td>
<td>93%</td>
</tr>
<tr>
<td>Documented Non-Smokers</td>
<td>75%</td>
<td>79%</td>
<td>79%</td>
<td>79%</td>
</tr>
<tr>
<td>Tetanus Diphtheria Immunization (every 10 yr)</td>
<td>35%</td>
<td>77%</td>
<td>78%</td>
<td>79%</td>
</tr>
<tr>
<td>Pneumococcal Immunization (Once Age &gt;65)</td>
<td>84%</td>
<td>84%</td>
<td>85%</td>
<td>85%</td>
</tr>
<tr>
<td>Influenza Immunization (Yearly Age &gt;18) <strong>Change in age from Age&gt;50 to Age&gt;18 February 2013</strong></td>
<td>47%</td>
<td>43%</td>
<td>44%</td>
<td>40%</td>
</tr>
<tr>
<td>Chlamydia Screening (Yearly Age 18-25)</td>
<td>22%</td>
<td>40%</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>Osteoporosis Screening (every 7 yr Age &gt;65)</td>
<td>52%</td>
<td>77%</td>
<td>77%</td>
<td>77%</td>
</tr>
<tr>
<td>Zoster Vaccine (Age &gt;60) <strong>New Measure February 2013</strong></td>
<td>40%</td>
<td>48%</td>
<td>48%</td>
<td></td>
</tr>
</tbody>
</table>
ProvenHealth Navigator (Advanced Medical Home) Results

- Acute care admissions: 27.5% decrease
- All cause 30-day readmissions: 34% decrease
- Demonstrated improvement in the risk of heart attack, stroke, and retinopathy in individuals with diabetes:
  - 3-year results in 25,000 patients:
    - 305 MIs prevented
    - 140 strokes prevented
    - 166 cases of retinopathy prevented
- Patients say quality of care improved when they worked with a case manager: 72% increase

ED Visits Remain Flat
Geisinger Patient-centered Continuum of Care

**Community-Based Care**
- Specialty Outreach ("Face-to-face" & Telemedicine)
- Urgent Care Center
- After-Hours Care Center
- Retail Clinic
- Lab Outreach Site
- Work Site Clinic
- E-Visit MyGeisinger
- Retail Pharmacy
- Community Practice Site
- Multi-Specialty Clinic
- Ambulatory Care & Surgery Center
- Specialty Center, e.g. Cancer or Sleep

**Acute Care**
- Tertiary/Quaternary Medical Center
- Destination Medicine
- eICU

**Post-Acute & Transitional Care**
- Inpatient Rehab
- Outpatient Rehab
- Adult Health Program & Day Center
- Nursing Homes/SNF
- Home Care Hospice
- ProvenHealth Navigator
- Wellness

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Disruptive Innovation & Value Re-engineering

Patients and Conditions

Population Identification

Bundle Development

Populations

100% Care Processes and Protocols (Digital)

Efficiency and Reliability

Low

Regular Care

Delegation and Algorithms

Automation

Patient Activation

High
Transforming Healthcare
Enabled by Technology
Re-engineering Primary & Specialty Care Integration

• PCP and specialists coordinate patient management
  • CKD/ESRD high-risk management
  • Psychiatric care management
  • Neurology/dermatology/endocrinology/cardiology/autism

• Convenient care redesign of primary care/ emergency medicine
  • 14 urgent care/after hours care sites
  • Coordinated, low-cost alternative to ED
Activating Patients Through Transparency: “OpenNotes”

• **Background:**
  • 12-month research project started in 2010

• **Results:**
  • 99% of patients requested continuation of the pilot

• **Current Status:**
  • >1,400 Geisinger providers are live for >220,000 patients
Innovations in Personalized Medicine

• Regeneron partnership to advance genomic medicine
• Clinical data warehouse grows
• Data analytics deployed to identify care gaps, permitting clinical intervention
• Focused population health research initiatives: obesity, autism, etc.
• Institute for Advanced Application
• Geisinger in Motion
Scaling and Generalizing

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xG Health Solutions®
Strong Foundation, Accelerating Growth

MISSION: Help providers committed to high-quality, value-based care succeed under risk-based payment

Launched in 2013
Investors:

30 clients
130 employees
What matters is results

Customer

Eastern Maine Health System
- 8 hospitals; 950 beds; 1,970 employed and affiliated MDs
- ~6,400 employees
- Target population: ~12K self-insured lives; Pioneer ACO ~8300 attributed lives

Services deployed
- TPA services
- 5 patient-centered medical homes
- Population health analytics
- Embedded case managers
- Best practice sharing

Results
- Reductions in Utilization
  - 32% Med-Surg Admits/1000
  - 72% Med-Surg Readmits/1000
  - 7% ED Visits/1000

Savings
- $8.6MM reduction in total cost of care

Significant Reduction in Utilization at Eastern Maine Health System.
What matters is results

Customer
West Virginia United Health System—largest system in West Virginia
- 8 hospitals; 1,286 beds; 866 physicians
- 4,700 employees
- Population: 10K self-insured lives

Services deployed
- TPA
- 3 PCMHs with our
- Embedded case managers
- Pop. health data analytics
- Utilization management (hospitalizations, high end radiology; transitions of care)
- Condition management

Results
Reductions in Utilization
- 17% Med-Surg Admits/1000
- 20% Med-Surg Readmits/1000
- 33% 1-Day Med-Surg Admits/1000
- 10% ED Visits/1000

Savings
$3M to $6M reduction in spending + additional $1.4M to $2.8M in savings due to increased worker productivity

Significant Reduction in Utilization at West Virginia Health System
\[ \text{Quality} + \downarrow \text{Cost} = \uparrow \uparrow \text{Value} \]
Where We Are Now at Geisinger

• Consolidation of providers
• Payer-provider integration model expansion
• Value re-engineering
• Medical tourism (i.e., Walmart ProvenCare®)
• Reference pricing
• Bundling episodic care/ACOs
• Population health (aka, total cost of care)
• “Ultimate” Patient Satisfaction
Where Do We Want to Be at Geisinger?

• Distributed data
• Personalized medicine/genetics
• Healthcare in the cloud
• “Activated” patients/people
• Transparency and availability of standardized data on cost and quality
• New provider surrogates/locations
• Social network enabling
• Behavior change analytics
• Generalizing value re-engineering
Predicting the Future
Predicting the Future
Post ACA Baseline • Insurance

Turbulence
Medicaid↑
Exchanges↑
  Public↑↑
  Private?
Medicare↑ (+ “Redistribution”)
  Declining Cost Trends?

Cost Shift↓
Volume to Value Reimbursement
  - Public↑↑
  - Commercial?
Consolidation↑↑↑
  - Value Based (Fact or Fiction?)
Predicting the Future
Post ACA Baseline • Provider

Integrated Care  (fact or fiction?)

Vertical Integration
  Structural
  Virtual (ACOs, DSRIPs, etc.)

Consolidations
  Value Based (fact or fiction?)

Physician Groups
  Employed
  Self Employed
  For Profit or Not (Any Difference?)
Predicting the Future Disruptive Forces

P.O.C. Alternatives
“Self” Care
Defined Benefit → Defined Contribution
Transparent / Understandable Value?
  • Insurance Products
  • Provider Products
Behavioral “Carve-in”?
Functional Apps on Transactional EHRs?
Global Healthcare Budgets
Predicting the Future
Demography

Increased Access for:

Younger
More Diverse
More Skeptical?
More Entitled?
More Involved (less asymmetric)
More Self Absorbed?
Predicting the Future Demography

Changing Workforce:

- More Diverse
- Aging
- Work/Life Balance Issues
- Non-Hospital Centric
- Non-Physician Centric?
Enabling Behavior Change

Providers and Patients
Quality + Cost = Value