Geisinger’s Use of Technology in Case Management and the Medical Home: A Heart Failure Study

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Geisinger at a Glance

Provider Facilities
- Geisinger Medical Center
- Geisinger Shamokin Community Hospital
- Geisinger Wyoming Valley
- Geisinger Wilkes Barre
- Geisinger Community Medical Center
- Geisinger Lewistown Hospital
- Geisinger Bloomsburg Hospital
- Mountain View Care Center
- Bloomsburg Healthcare Center
- Marworth

Managed Care Companies
- Multispecialty Physician Groups
  - ~950 Physician FTE’s
  - ~600 AP’s
  - Outpatient Surgery Center
  - ~70 Primary Care and Specialty Clinics
  - Resident and Fellow Programs
  - Nursing Programs

Physician Group
- ~478,000 covered lives
- 128,000 Medicaid
- 81,000 Medicare
- 260,000 Commercial
- 9,000 CHIP
Vendor Partner at a Glance

AMC Health (Advanced Monitored Caregiving)
www.amchealth.com

- Tele-monitoring vendor for GHP since 2008
- Founded in 2002 after company’s founder had experienced taking care of an aging parent in ill health
- Programs currently running with AMC Health:
  - Heart Failure program – published outcomes 2014
  - Post D/C IVR: published outcomes 2011
  - Kiosk
- Value Proposition
  - Device Agnostic
  - Committed partner to GHP and GHS
Geisinger’s Medical Home at a Glance

ProvenHealth Navigator®

Implemented 90+ Medical Homes (2006-2013); 50%+ Outside Geisinger

<table>
<thead>
<tr>
<th>Sites</th>
<th># of Sites</th>
<th>Medicare Advantage Members</th>
<th>Commercial Members</th>
<th>Fee-for-Service Members</th>
<th>Geisinger Health Plan Family (Medical Assistance Members)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geisinger (owned, in PA)</td>
<td>42</td>
<td>23,328</td>
<td>61,206</td>
<td>42,715</td>
<td>26,708</td>
</tr>
<tr>
<td>Non-Geisinger (in PA)</td>
<td>40</td>
<td>5,939</td>
<td>18,762</td>
<td>0</td>
<td>8,595</td>
</tr>
<tr>
<td>West Virginia</td>
<td>3</td>
<td>0</td>
<td>4,835</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Maine</td>
<td>6</td>
<td>0</td>
<td>1,717</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>93</strong></td>
<td><strong>29,267</strong></td>
<td><strong>86,520</strong></td>
<td><strong>42,715</strong></td>
<td><strong>35,303</strong></td>
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</table>

PA = Pennsylvania. Geisinger Advanced Medical Homes began in 2006 with 3 Pilot sites. The three pilot sites started with: 5,000 Medicare Advantage, 4,100 Commercial, and 2,100 Medicare lives.
### Geisinger’s PHN Model: 5 Core Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Patient-centered Primary Care</strong></td>
<td>- Patient and family engagement &amp; education</td>
</tr>
<tr>
<td></td>
<td>- Enhanced access and scope of services</td>
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<td></td>
<td>- <strong>PCP led team-delivered care</strong></td>
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<td></td>
<td>- Chronic disease and preventive care optimized with HIT</td>
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<tr>
<td><strong>Integrated Population Management</strong></td>
<td>- Population segmentation and risk stratification</td>
</tr>
<tr>
<td></td>
<td>- Preventive care</td>
</tr>
<tr>
<td></td>
<td>- <strong>GHP employed in-office case management</strong></td>
</tr>
<tr>
<td></td>
<td>- Disease management</td>
</tr>
<tr>
<td><strong>Medical Neighborhood</strong></td>
<td>- Micro-delivery referral systems</td>
</tr>
<tr>
<td></td>
<td>- <strong>360°care systems</strong> – SNF, ED, hospitals, HH, etc.</td>
</tr>
<tr>
<td><strong>Quality Outcomes</strong></td>
<td>- Patient satisfaction</td>
</tr>
<tr>
<td></td>
<td>- HEDIS and bundled chronic disease metrics</td>
</tr>
<tr>
<td></td>
<td>- Preventive services metrics</td>
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<tr>
<td><strong>Value-based Reimbursement</strong></td>
<td>- Fee-for-service with P4P payments for quality outcomes</td>
</tr>
<tr>
<td></td>
<td>- Physician and practice transformation stipends</td>
</tr>
<tr>
<td></td>
<td>- <strong>Value-based incentive payments</strong></td>
</tr>
<tr>
<td></td>
<td>- Payments distributed on Quality Performance</td>
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</table>
## Integrated Population Management

<table>
<thead>
<tr>
<th>Components</th>
<th>Core Activities</th>
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</thead>
<tbody>
<tr>
<td>Population Segmentation</td>
<td>Predictive modeling</td>
</tr>
<tr>
<td></td>
<td>Risk stratification</td>
</tr>
<tr>
<td>Health Promotion</td>
<td>Preventive care &amp; Screenings</td>
</tr>
<tr>
<td>Disease Management</td>
<td>Self-management education</td>
</tr>
<tr>
<td></td>
<td>Medication management</td>
</tr>
<tr>
<td>Case Management</td>
<td>Care coordination</td>
</tr>
<tr>
<td></td>
<td>Exacerbation management</td>
</tr>
<tr>
<td></td>
<td>TOC</td>
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<tr>
<td></td>
<td>Tele-monitoring</td>
</tr>
<tr>
<td>Pharmacy Management</td>
<td>Brand vs. generic</td>
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<tr>
<td></td>
<td>Medication adherence</td>
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</table>
Geisinger Tele-monitoring Programs

GHP utilizing Tele-monitoring since 2008 through AMC Health telemedicine services

<table>
<thead>
<tr>
<th>Year</th>
<th>Heart Failure</th>
<th>Hospital Discharge</th>
<th>Nephro-Hypertension</th>
<th>Grand Total</th>
</tr>
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<tbody>
<tr>
<td>2009</td>
<td>1,373</td>
<td>3,975</td>
<td>0</td>
<td>5,348</td>
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<tr>
<td>2010</td>
<td>1,291</td>
<td>1,960</td>
<td>0</td>
<td>3,251</td>
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<tr>
<td>2011</td>
<td>1,163</td>
<td>1,452</td>
<td>27</td>
<td>2,615</td>
</tr>
<tr>
<td>2012</td>
<td>1,197</td>
<td>2,947</td>
<td>18</td>
<td>4,144</td>
</tr>
<tr>
<td>2013</td>
<td>1,078</td>
<td>4,591</td>
<td>11</td>
<td>5,669</td>
</tr>
<tr>
<td>Total</td>
<td><strong>6,102</strong></td>
<td><strong>14,925</strong></td>
<td><strong>56</strong></td>
<td><strong>21,027</strong></td>
</tr>
</tbody>
</table>
Tele-monitoring Programs and Pilots

Current Programs:

- Heart Failure – Bluetooth scales and/or IVR
- Post Hospitalization (D/C) – IVR post discharge
- HTN: Bluetooth Blood Pressure cuffs in concert with Nephrology Department
- Wellness Kiosks

Future programs/pilots with tele-monitoring:

- Diabetes
- COPD
- Video monitoring utilizing Smart Phones and Kiosks
  - Patient homes
  - Nursing Homes
Heart Failure Program

- Historically began in 1998 in our initial Disease Management program
- Very manual program tracking weights and changes in status
- Transformed with the genesis of our complex case management and medical home model
- In 2008, implemented the new program with the use of:
  - Bluetooth Enabled Scales
  - Interactive Voice Response (IVR)
  - Initial Pilot of 50
Heart Failure
Chronic Care Management

**Heart Failure**

Diuretic Titration Protocol

Daily weights

Tele-monitoring

Education

Self-management

Outreach
Keys to Enrollment in the HF Tele-monitoring Program

- Identifying the population
  - Claims
  - Physician Referrals
  - IP Case Management
  - Census Lists

- Clinical Criteria
  - Validated DX of HF
  - EF < 40%
  - Or documented diastolic dysfunction
Ability to Participate in Tele-monitoring

- Ability to step on scale and steady themselves for accurate weight taken safely
- Good Cognitive Function
- Good hearing to participate in IVR
Delivery and Set Up of Devices

- Case Manager discusses program and indicates willingness of patient via enrollment form
- Enrollment triggers AMC Health to mail devices
- AMC provides telephonic set up support and instructions to the patient
- Vendor provides troubleshooting when there are transmission failures or other technical issues
- Replacement of devices as needed
Alert Management

- Patient specific parameters for weight gain are set within the AMC Health application
- Heart Failure IVR questions Branching Logic
- Weights or IVR answers that fall into the alerting logic are sent to the Case Manager
  - Alerts go to an EHR pool
  - Link to the AMC Health website embedded in the alert message
  - Single Sign On (SSO) to the AMC Health website
Case Managing the Heart Failure Patient

- Patient Education
- S/S of exacerbation and worsening condition
- Working with the Care Team to optimize the Care Plan and coordinate care
- Near Real-Time notification of patient biometrics and information to make necessary changes to meds, care plan, appointment schedule
Disenrollment Criteria

- Stability of patient in self‐management of weights and care plan
- Voluntary disenrollment by patient
- No longer has insurance that allows our Case Managers to follow
- Patient expires
Case Management

Case Management Satisfaction / Tele-monitoring Survey:

- 85% of CM’s felt that the program helped them save a readmission or admission
- 96% of CM’s felt the program helped them manage the HF patient more efficiently
- 81% felt the system helped them
Lessons Learned

- Tele-monitoring processes must be implemented efficiently to workflows
- Not all patients require, or are a fit, for tele-monitoring – right care, right place, right time
- Clinician adoption strategies – “We’re all in marketing”....
- It’s quality, not quantity
Studying the Program

- Claims Data 1/1/2007 through 10/31/2012
- GHP Medicare Advantage plan members who had maintained membership through the 70 months utilizing a gatekeeper product
- Not all members in the study maintained enrollment in the HF program for the 70 months (average enrollment 24 months)
- Identified 1,708 members for the study
Descriptors of the Study Population

- Elderly: Average Age 79
- High Prevalence of Co-morbid conditions
- Hypertension and CAD most common co-morbid
- Average PMPM cost of ~$1,600
Outcomes of the Study

- 23% lower odds of an admission while enrolled in the HF Tele-monitoring Program
- Odds of 30-Day Readmission was 44% lower
- Odds of 90-Day Readmission was 38% lower
- 11% cost savings associated with the study period

For every $1 spent, there was a $3.30 ROI PMPM
Other Tele-monitoring Outcomes

Post Hospitalization D/C program:

- Results:
  - Members 44% *less likely* to be readmitted when CM services coupled with IVR post discharge
  - 20% reduction in readmission rates vs comparison group with CM but no IVR
  - Published article: *Medical Care, Volume 50, Issue 1: Post Discharge Monitoring Utilizing Interactive Voice Response System Reduces 30 Day Readmission Rates in a Case Managed Medicare Population*
Questions?