Medical Home Evaluations: Past, Present & Future

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The Effects of the Patient-Centered Medical Home in a Multi-Payer, Multi-Provider Community

November 2014

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Associate Professor of Healthcare Policy and Research and of Medicine, Weill Cornell Medical College
Associate Director for Research, Center for Healthcare Informatics and Policy
Deputy Director, Health Information Technology Evaluation Collaborative
The Hudson Valley Initiative

- Broad agenda to transform health care
- Included Patient-Centered Medical Home (PCMH) transformation for participating practices
  - All PCMH practices also had electronic health records (EHRs)
  - Practices underwent transformation in 2009
  - All recognized by National Committee for Quality Assurance as Level III practices
The Hudson Valley Initiative

[Map of Hudson Valley with county names: Ulster, Dutchess, Sullivan, Putnam, Orange, Westchester, Rockland]

[Taconic IPA, THiNC, MedAllies logos]

Taconic Health Information Network and Community

Integrated Data. Innovative Technology
Other Key Participants

Funding for evaluation:

Participating health plans:
Our Evaluation

• Included primary care physicians who were members of the Taconic Independent Practice Association and used aggregated claims data

• Had 3 study groups

- Paper
- Electronic health records (EHR)
- EHRs with PCMH transformation (PCMHH)
Methods

• **Design**: Longitudinal cohort study (2008 – 2010)*
• **Sample**: 675 primary care physicians, 312 practices
• **Outcomes**:
  • 10 HEDIS quality measures
  • 7 healthcare utilization measures
• **Accounted for**: 8 physician characteristics, 4 patient characteristics, multi-level clustering

* 5-year version (2008 – 2012) just submitted for publication
PCMH and Quality: Adjusted Odds of Receiving Recommended Care Overall, (N = 142,932 patients)

<table>
<thead>
<tr>
<th>Change in quality over time (2010 vs. 2008) by study group</th>
<th>Odds Ratio (95% confidence interval)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCMH vs. Paper</td>
<td>1.07 (1.03, 1.11)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>PCMH vs. EHR</td>
<td>1.06 (1.01, 1.11)</td>
<td>0.009</td>
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<tr>
<td>EHR vs. Paper</td>
<td>1.01 (0.97, 1.05)</td>
<td>0.68</td>
</tr>
</tbody>
</table>
The Patient-Centered Medical Home, Electronic Health Records, and Quality of Care

Lisa M. Kern, MD, MPH; Alison Edwards, MStat; and Rainu Kaushal, MD, MPH

Conclusion: The PCMH was associated with modest quality improvement. The aspects of the PCMH that drive improvement are distinct from but may be enabled by the EHR.

Is There Value in Medical Home Implementation Beyond the Electronic Health Record?

Robert J. Reid, MD, PhD
Michael L. Parchman, MD, MPH
Group Health Research Institute
Seattle, Washington
PCMH and Healthcare Utilization

• Adjusted difference-in-differences in healthcare utilization per 100 patients with 1 year of follow-up post-PCMH implementation
  – Significantly fewer specialist visits among patients in the PCMH group
  – No significant differences between the EHR and paper groups

* < 0.05, provider-level analysis with N = 275 total.
Manuscript accepted for publication (in press).
Next Study

• We have added 2 additional years to the follow-up period for a total of 5 years (2008 – 2012)
  – Outcomes for quality, healthcare utilization and cost
PCMH as the Commencement: Recognition Is the Beginning
Acknowledgements

• Alison Edwards, MStat
• Rainu Kaushal, MD, MPH
• Commonwealth Fund, New York State Department of Health
• THINC, Taconic IPA, MedAllies
• Aetna, Capital District Physicians’ Health Plan, Empire Blue Cross Blue Shield, Hudson Health Plan, MVP Healthcare, United
Thank you.

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The Evidence Base for PCMH and Evolving Strategies for Measuring Success
The Pennsylvania Chronic Care Management, Reimbursement and Cost Reduction Commission was established by Governor Rendell’s Executive Order in May 2007.

- The state convened a multi-stakeholder process to design and oversee the initiative.
- Implementation occurred through four regional rollouts, with the Southeast first (May 2008) and the Northeast last (October 2009).
- In January 2012 Medicare joined the CCI via the MAPCP demonstration in these two regions.
Key Initiative Characteristics

- The model design varied (and evolved) by region based on learned experience and stakeholder input.
- A learning collaborative designed around the Chronic Care Model, with initial focus on chronic illness management.
- Practices given annual clinical quality improvement targets, performance tracked online.
- Participation by commercial and Medicaid payers using a standard contract and rates.
- Shared savings and care management introduced in the Northeast first in 2009, and then in the Southeast in 2012.
- Variation by region in provider type, leadership and payer level of engagement and practice support.
Multiple Evaluations

There was significant improvement in the percentage of patients who had evidence-based complications screening and who were on therapies to reduce morbidity and mortality (statins, angiotensin-converting enzyme inhibitors). In addition, there were small but statistically significant improvements in key clinical parameters for blood pressure and cholesterol levels, with the greatest absolute improvement in the highest-risk patients.

“Multipayer Patient-Centered Medical Home Implementation Guided by the Chronic Care Model” Gabbay et al. Joint Commission Journal on Quality and Patient Safety, June 2011
Multiple Evaluations

- “There is an apparent and identifiable focus on patient-centered care.”
- “We observed a clear commitment to reducing hospital readmissions and emergency department visits.”
- There is a clear focus on patient-centered outcomes. ‘Working the bundles’ is a phrase we heard often.”
- “Practices that do not have a strong physician champion who supports the medical home/CCI approach will experience great difficulties immediately and these will persist.”

“The Pennsylvania Chronic Care Initiative: An Assessment of the Process of Implementation” Graduate School of Public Health, University of Pittsburgh, July 2013
But one garnered national attention…

- Friedberg et al. “Evaluating a multipayer medical home intervention” *JAMA* February 26, 2014
And this is what followed…

- “Study Finds Limited Benefit to Some ‘Medical Homes’” – New York Times
- “Study Questions Benefits of 'Medical Home' Programs for Chronically Ill” – Wall Street Journal
- “RAND Study Casts Doubt on Medical Home Model's Effectiveness” – California Healthline
- “Popular U.S. health reform plan may not cut costs, boost quality: study” – Chicago Tribune
What did RAND find in Southeast PA?

- Pilot practices increased their adoption and use of medical home capabilities
- Trend towards positive effects on targeted quality measures, but not reaching statistical significance
  - Exception: statistically significant improvement on nephropathy monitoring in diabetes
- No impact on utilization
What did RAND find in Northeast PA?

- Paper submitted to a peer-reviewed journal but not yet published.
- Results were different from in the Southeast, and the goals of the Chronic Care Initiative were generally much more fully achieved.
- The results are still preliminary since they haven’t made it through the peer review process yet.
So...what can we learn from this?

1. Bad news loves a headline.
2. One study is one study.
3. We learn by doing, erring and improving.
4. The question we need to pursue isn’t just what succeeded or didn’t, but why?
5. When statistical significance is viewed as a sharp line and not a sliding scale of confidence, we miss important information.
6. Success will come from gritty persistence to hone and perfect models.
Moving Toward Measuring
The Triple Aim

Measuring Service, Cost and Quality In
Search Of Better Outcomes For All

Bruce Bagley, MD
President and CEO
TransforMED

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Today’s Conversation

- Brief description of the CMS Innovation Center Award and Medical Neighborhood project
- **Data sources** for the Triple Aim calculation
- All payer data set vs. Adequate sample
- Availability of comparison data and benchmarks
- “Motivational” data
- Preliminary results
Research and Development at TransforMED

Comprehensive Primary Care (CPC)

Providers

Patients

Payers

Health Systems

ACO Learning and Diffusion

Best practices
Case Study-Medical Neighborhood

- Partners in the PCMN project
  - VHA - Community convener
  - Phytel - “Bolt-on” registry and quality reporting tool
  - Cobalt-Talon - Data partner for CMS claims flat file
- 15 Communities (90 practices)
  - Year One - Ramp up PCMH capabilities and get data
  - Year Two - Report on service, cost and quality
  - Year Three - Spread to broader community
- Feedback to providers at the NPI level
  - Patient experience
  - Clinical quality
  - PMPM total cost of care
  - Clinician and Staff satisfaction

“Triple Aim plus One”
Project Goals By June 2015

Reduce the Total Cost of Health Care for Medicare and Medicaid Beneficiaries by $49.5 Million

Improve Health of Eligible Population Demonstrated by an Average of 15% with at least 3% Improvement in Each Selected Quality Measure

A 25% Improvement in Patient Experience

Demonstrate Ability to Scale to Additional Practices within Each Community
Data Considerations-Claims

- Medicare claims data in a flat file format
  - 2010, 2011 base years then 2012 and beyond, monthly refresh with quarterly reports
- Always “old news”
- Provides an adequate sample to identify practice patterns and high cost patients (see above)
- Patient identifiable information available at the practice level
- No commercial payer data available in this project
Data Considerations-Quality and Service

- Quality data extracted from the EMR
- Practice provided with chronic illness POC registry and outreach capability
- Metrics followed:
  - 12 Clinical quality metrics
  - 10 Practice process measures
  - 3 patient experience measures
    - Access-Third next available appointment
    - Access-Extended office hours
    - Patient satisfaction surveys
Patient Experience of Care

- Only real outcome measure regarding service
- Multiple methods in play
  - CAHPS, Press-Ganey, PEAT, home grown
  - No common questions
- Expensive to conduct properly
- Has not been useful to drive change
- Very little change over time in results…
  - 85% positive responses

“Would you refer family or friends to this practice (clinician)?”
Cost of Care Data

- From Medicare Claims at the **NPI level**
  - Total cost of care on a PMPM basis
  - ER visits per 1000 per year
  - Bed days per 1000 per year
  - Milliman “**well managed benchmark**” used for comparison along with community and project averages

- Patient level data available to practices
- Cave Grouper method used to determine **efficiency** of specialty care
  - Help PCPs determine “high value referral”
“Motivational Data”

- Report out data that sparks the competitive spirit among clinicians
- Must have good face validity
- Professionalism—must be clinically relevant
- Within locus of control for clinicians
- Focus on a small number of process and workflow changes at a time
- Work/life balance

The “WAC” Measure- Work After Clinic
The Triple Aim Measure

- Aggregate score for service, cost and quality
- Approximates the value equation
- Weighted contribution for each component
- Enables comparisons within and across markets
- Allows trending over time for improvement work

<table>
<thead>
<tr>
<th>Total Cost of Care PMPM</th>
<th>Quality</th>
<th>Pt Experience</th>
<th>Staff Satisfaction</th>
<th>TA Score</th>
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<tbody>
<tr>
<td>825.00</td>
<td>75%</td>
<td>75%</td>
<td>75%</td>
<td>= 51</td>
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<td>815.00</td>
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<td>= 56</td>
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<tr>
<td>805.00</td>
<td>85%</td>
<td>80%</td>
<td>80%</td>
<td>= 68</td>
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<tr>
<td>800.00</td>
<td>75%</td>
<td>85%</td>
<td>85%</td>
<td>= 68</td>
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<tr>
<td>775.00</td>
<td>90%</td>
<td>80%</td>
<td>85%</td>
<td>= 79</td>
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</tbody>
</table>

1/PMPM X 100K
Preliminary Results

- One-Half national average PMPM cost at the outset
- Project Practices held spending to 0.2% increase in PMPM with 4.1% predicted increase by CMS between 2012 and 2013
- Practices decreased their inpatient PMPM expenditures by $25 between 2012 and 2013, saving $18.6 Million
- Professional services payments up by $9 PMPM
- Patient experience of care remained the same
- Same day appointment availability up 40%
- Extended office hour availability up 60%
# Patient Profile

## Panel 1

### Demographic Information

<table>
<thead>
<tr>
<th>Clinical Class Code</th>
<th>Clinical Class Code 2</th>
<th>Clinical Class Code 3</th>
<th>Clinical Class Code 4</th>
<th>Clinical Class Code 5</th>
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<tbody>
<tr>
<td>Active cancer</td>
<td>Severe heart failure/transplant/rheumatic heart disease</td>
<td>CAD without diabetes</td>
<td>Diabetes without CAD</td>
<td>Hypertension (Includes stroke &amp; peripheral vascular disease)</td>
</tr>
</tbody>
</table>

### Current Conditions

- **Active cancer**: Severe heart failure/transplant/rheumatic heart disease
- **Clinical Class Code**: CAD without diabetes
- **Clinical Class Code 2**: Diabetes without CAD
- **Clinical Class Code 3**: Hypertension (Includes stroke & peripheral vascular disease)

### Clinical Setting Utilization

<table>
<thead>
<tr>
<th>Clinical Setting</th>
<th>Clinical Setting Category</th>
<th>Medicare Paid $</th>
<th>Cases</th>
<th>Days</th>
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<tr>
<td>IP</td>
<td>Medical</td>
<td>$65,972</td>
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<td>40</td>
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<tr>
<td>IP</td>
<td>SNF</td>
<td>$7,810</td>
<td>3</td>
<td>20</td>
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<tr>
<td>IP</td>
<td>Surgery</td>
<td>$38,679</td>
<td>1</td>
<td>11</td>
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<tr>
<td>IP</td>
<td>Total</td>
<td>$82,460</td>
<td>12</td>
<td>71</td>
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<tr>
<td>OP</td>
<td>Clinic</td>
<td>$260</td>
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<tr>
<td>OP</td>
<td>Emergency Room</td>
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<td>OP</td>
<td>Pathology/Lab</td>
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<td>OP</td>
<td>Prescription Drugs</td>
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<td>OP</td>
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<tr>
<td>OP</td>
<td>Total</td>
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<tr>
<td>PROF</td>
<td>Ambulance</td>
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<td>PROF</td>
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<td>PROF</td>
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<td>14</td>
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<td>PROF</td>
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### Patient Selector Table

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<tr>
<th>Patient</th>
<th>Medicare Paid $</th>
<th>Cases</th>
<th>Norm Med Pros Total</th>
<th>Risk Avg</th>
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<tr>
<td><strong>nmnmmnFmSm0St</strong></td>
<td>$140,643</td>
<td>284</td>
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<tr>
<td><strong>nmnmmnFmSm0St</strong></td>
<td>$69,083</td>
<td>136</td>
<td>4.6427</td>
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<tr>
<td><strong>nmnmmn0SM253S</strong></td>
<td>$63,457</td>
<td>135</td>
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<td><strong>nmnmmn0SM253S</strong></td>
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<td>$28,745</td>
<td>34</td>
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## ER Visits

### Patient Selector

<table>
<thead>
<tr>
<th>Patient</th>
<th>Cases</th>
<th>Medicare Paid $</th>
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<tbody>
<tr>
<td>24</td>
<td>$29,794</td>
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### Servicing ER

<table>
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<th>Provider Service</th>
<th>Cases</th>
<th>Medicare Paid $</th>
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<tr>
<td>8</td>
<td>$12,219</td>
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<tr>
<td>6</td>
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<td>4</td>
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<tr>
<td>2</td>
<td>$2,685</td>
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</table>

### Timeline View

<table>
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<tr>
<th>Incurred Date</th>
<th>Diag 1 (Prncpl)</th>
<th>Provider Service</th>
<th>Medicare Paid $</th>
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<tbody>
<tr>
<td>5/10/2013</td>
<td>ANXIETY STATE, UNSPECIFIED</td>
<td></td>
<td>$988</td>
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<tr>
<td>6/13/2013</td>
<td>MANIC-DEPRESSIVE PSYCHOSIS, UNSPECIFIED</td>
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<td>$568</td>
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<tr>
<td>6/22/2013</td>
<td>HYPOXEMIA</td>
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<td>$1,915</td>
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<tr>
<td>7/9/2013</td>
<td>OTHER CHEST PAIN</td>
<td></td>
<td>$442</td>
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<td>7/16/2013</td>
<td>MANIC-DEPRESSIVE PSYCHOSIS, UNSPECIFIED</td>
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<td>$817</td>
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<tr>
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<td>UNBILICAL HERNA WITH OBSTRUCTION</td>
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<td>8/13/2013</td>
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<td>OTHER ACUTE POSTOPERATIVE PAIN</td>
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Questions

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