Evaluation Results of the NH Citizens Health Initiative Multi-Stakeholder Medical Home Pilot

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Overview

* Background
* Methods
* Results
* Discussion
The Challenge

* High health care costs
  * Rising spending, high prices, and fee-for-service (FFS) payment (Goroll & Schoenbaum, 2012; H. D. Miller, 2009).

* Fragmented delivery system
  * Silos in care delivery, duplication, lack of coordination and collaboration, and inefficiencies (Aaron & Ginsburg, 2009).

* Higher costs not associated with superior quality (Aaron & Ginsburg, 2009).

* Increasing burden on primary care system.
What is the Medical Home?

* Origins in pediatrics for children with special healthcare needs.
* More recently, adopted in adult settings and family practice with the Joint Principles of the Patient-Centered Medical Home (2007):
  * Personal physician, physician directed medical practice, whole person orientation, care is coordinated and/or integrated, quality and safety, enhanced access, and payment.
* NCQA Recognition.
Some positive trends for certain measures, particularly in integrated settings with clearly defined interventions.

- Improved composite quality (preventive and chronic care) (Reid et al., 2009; 2010).
- Decreased use of emergency services (Reid, et al., 2010).
- Decreased hospital admissions (Gilfillan et al., 2010; Reid et al., 2010).
- Decreased readmissions (Gilfillan et al., 2010).
- Higher specialty care use (Christensen, et al., 2013; Reid, et al., 2010).
* Settings
  * Integrated settings such as military health system (Christensen et al., 2013), Geisinger Health System (Gilfillan et al., 2010) Group Health Cooperative (Reid et al., 2010), and Veterans Health System (Klein, 2011).
  * Clearly specified and targeted interventions (Christensen et al., 2013; Gilfillan, et al., 2010; Reid et al., 2010).

* Methods
  * Only one pilot site with several comparison sites (Christensen, et al., 2013; Reid, et al., 2010).
  * No comparison sites (Bielaszka-DuVernay, 2011; Klein, 2011).
  * Review of 21 articles related to medical home suggested most of the studies were cross-sectional in nature, with only one-third including non-medical home sites for comparison in their analyses (Hoff, et al., 2012).
Studies on the process of practice redesign emphasize areas such as:

- The importance of stakeholder and leadership buy-in (Meyer, 2010; Soliemo, et al., 2013).
- The roles of adaptive reserve, mental models, and culture and their impact on facilitating or impeding change (Cronholm, et al., 2013; Hudak, et al., 2013; Nutting, et al., 2009).
- The variation in implemented features, questionable generalizability of experiences, and barriers associated with changes in HIT (Bitton, et al., 2012).
This Pilot

* NH Citizens Health Initiative Multi-Stakeholder Medical Home Pilot.
* Nine practices.
  * FQHC, hospital-owned, independent, health system, NP-owned.
  * At least Level 1 NCQA recognition—all achieved Level 3.
* Average $4 per member per month (PMPM) payment from four commercial payers.
* Payment July 2009 through December 2011.
METHODS
Research Questions

1) How do health care organizations implement the medical home model?
2) Does the medical home improve utilization, costs, and quality?
3) Do pilot sites with higher levels of medical homeness exhibit better utilization, costs, and quality?
4) Do pilot sites with higher levels of relational coordination exhibit better utilization, costs, and quality?
5) Do pilot sites with certain organizational characteristics exhibit better utilization, costs, and quality?
Site visits completed at each of the nine pilot sites in November and December 2011. Conducted interviews, gathered organizational documents.

83 participants interviewed in total, including 79 participants at sites, three payers, and one convenor of the pilot.

Interviews transcribed and subsequently coded using QSR NVivo qualitative analysis software.

Individual site reports provided to sites for review and comment.
Each site completed the adult Medical Home Index around time of site visit.

Measure of “medical homeness” created by the Center for Medical Home Improvement.

Self assessment across four levels in six domains:
  * organizational capacity
  * chronic condition management
  * care coordination
  * community outreach
  * data management and quality
  * quality improvement/change

Final site-level score out of 200 points.
Primary Data Collection: Survey of Relational Coordination

* Seven dimensions of communication and relationships:
  * Frequent, timely, accurate, and problem-solving communication.
  * Relationships of shared goals, shared knowledge, and mutual respect (Gittell, 2010).
  * Focal work process of interest: the delivery of primary care to patients in your practice.
Secondary Data Sources

* Pilot-site-only quality data reported for the purpose of the pilot.
<table>
<thead>
<tr>
<th>Category</th>
<th>Measure</th>
<th>Source Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Utilization</strong></td>
<td>Total acute hospital admissions</td>
<td>HEDIS 2012: Inpatient Utilization – General Hospital/Acute Care</td>
</tr>
<tr>
<td><strong>Utilization</strong></td>
<td>Ambulatory care sensitive hospital admissions</td>
<td>AHRQ Prevention Quality Indicators (PQI)</td>
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<tr>
<td><strong>Utilization</strong></td>
<td>Readmissions within 30 days</td>
<td>HEDIS 2012: Plan All-Cause Readmissions (PCR)</td>
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<tr>
<td><strong>Utilization</strong></td>
<td>Total emergency department visits</td>
<td>HEDIS 2012: Ambulatory Care ED Visits</td>
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<tr>
<td><strong>Utilization</strong></td>
<td>Ambulatory care sensitive emergency department visits</td>
<td>NYU ED Algorithm (non-emergent, primary care treatable, and emergent – ED care needed – preventable/avoidable)</td>
</tr>
<tr>
<td><strong>Utilization</strong></td>
<td>Primary care visits</td>
<td>As specified in Rosenthal et al., (2010).</td>
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<tr>
<td><strong>Utilization</strong></td>
<td>Specialty care visits</td>
<td>As specified in Rosenthal et al., (2010).</td>
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<tr>
<td><strong>Utilization</strong></td>
<td>Outpatient visits overall</td>
<td>HEDIS 2012: Ambulatory Care Outpatient Visits</td>
</tr>
<tr>
<td><strong>Costs</strong></td>
<td>Total costs, including outpatient, inpatient, and emergency department.</td>
<td>As defined above.</td>
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<tr>
<td><strong>Costs</strong></td>
<td>Total costs for higher utilizer population</td>
<td>Population based on individuals with two or more chronic conditions identified through the ACG risk adjustment software.</td>
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<tr>
<td>Measure Category</td>
<td>Measure</td>
<td>Source Specification</td>
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<tr>
<td>Effectiveness of Care: Prevention and Screening</td>
<td>Breast Cancer Screening, one or more mammograms in measurement year or year prior</td>
<td>HEDIS 2012: Breast Cancer Screening</td>
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<tr>
<td>Effectiveness of Care: Diabetes</td>
<td>Hemoglobin A1c (HbA1c) testing, performed during measurement year</td>
<td>HEDIS 2012: Comprehensive Diabetes Care, (HbA1c) testing</td>
</tr>
<tr>
<td>Effectiveness of Care: Diabetes</td>
<td>Eye exam (retinal), performed during measurement year or no evidence of retinopathy in year prior</td>
<td>HEDIS 2012: Comprehensive Diabetes Care, Eye Exams</td>
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<tr>
<td>Effectiveness of Care: Diabetes</td>
<td>LDL-C screening, performed during measurement year</td>
<td>HEDIS 2012: Comprehensive Diabetes Care, LDL-C Screening</td>
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<tr>
<td>Effectiveness of Care: Diabetes</td>
<td>Medical attention for nephropathy, screening test for evidence of nephropathy</td>
<td>HEDIS 2012: Comprehensive Diabetes Care, Medical Attention for Nephropathy</td>
</tr>
<tr>
<td>Effectiveness of Care: Cardiovascular Conditions</td>
<td>LDL-C screening, in measurement year or year prior</td>
<td>HEDIS 2012: Cholesterol Management for Patients With Cardiovascular Conditions</td>
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Analysis Approach

* Difference-in-differences analyses with propensity-score matched comparison group.
* Risk adjusted for utilization and cost.
* Pre-post analysis with random effect for site for medical homeness, relational coordination, and presence of care coordinator.
RESULTS
I'm one of those believers in that you're not are or you aren't - you're somewhere in the spectrum and we're not all the way there yet. I don't think any practice ever is. We've moved along that spectrum.

– Family Physician

The Nature of the Medical Home Model

Team-Based Care
Care Coordination
Registries
Evidence-Based Care
Electronic Health Records
Quality Improvement
Open Access
Transparency
Definitions and implementation of team-based care varied.
Where teams existed, members of the team varied.
Role maximization.
Continuity of care.
Required change in culture.
Different roles provided service.

Different types of services coordinated.

Reimbursement challenges.

Sometimes funded by pilot PMPM payments.
Registries

* Several steps for managing registries:
  * Identify specific populations, conditions, and data points to track.
  * Pull data from the Electronic Health Record.
  * Review data for a given provider panel.
  * Act on data (e.g., outreach to patients).
* Significant variation with respect to populations and conditions tracked, and how data was organized, disseminated, and acted upon.
The nature of the medical home model varied significantly across these nine pilot sites with respect to where the practice started at the outset, what features were implemented, and how those features were operationalized in practice.

Some commonalities: EHR at outset, continuous quality improvement activities, and increased emphasis on population health and access.

Across all practices, there was no single medical home model.
Dedicate staff time and resources to the change process.

Frame transformation as a spectrum; aim to move the practice along that spectrum.

Focus on targeted areas for improvement.

Transformation includes technical changes and cultural changes.

Buy-in from all levels (e.g., leadership, providers, support staff) is needed.

The NCQA Recognition process is a tool, not an endpoint.

Experimentation and pilot teams enable testing of new ways of delivering care.
Utilization, Costs, and Quality

- ED Visits
- Ambulatory Care Sensitive ED
- Acute Inpatient Admissions
- ACS Hospital Admissions
- Readmissions
- Primary Care
- Specialty Care
- Total Costs
- Quality
Medical Home vs. Non-Medical Home

* There were no statistically significant difference-in-differences estimators for any of the utilization, cost, or quality variables in the expected direction.

* Medical home attributed patients showed higher specialty care utilization relative to non medical home attributed patients in the post-period relative to the pre-period. This was true across the full population and the subpopulation with two or more chronic conditions.
Just the Pilot Sites

Medical Homeness
Relational Coordination
Care Coordinator
* Higher medical homeness, as measured through the Medical Home Index (Full and Organizational Factor), was associated with:
  * Lower ED visit rates
  * Lower ED ambulatory care sensitive visit rates
  * Lower readmission rates
  * Higher hospital admissions
  * Better performance on several diabetes quality measures.
* Having a care coordinator was associated with better performance on some quality measures, specifically diabetes process and composite measures.
Limitations

* Only commercial data analyzed here.
* Pilot program indicates self selection.
* Attribution choices are imperfect.
* Short time frame.
* Small sample for medical homeness data.
Take Aways

* Lack of findings for medical home here.
  * Variation in implementation.
  * Possibility of medical home features in comparison sites.
  * Commercial population.

* Nature of the Intervention
  * Spectrum-based understandings.
  * Variation.
  * Need to link features of model to outcomes of interest.
  * Relationship with specialty care.
Acknowledgments

* NH Citizens Health Initiative, University of New Hampshire, and pilot sites.
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Thank you!

Questions?

Comments!

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