Care for Complex Patients with Diabetes: Where is their Medical Home?

Robert E. Ratner, MD
Chief Scientific and Medical Officer
American Diabetes Association
Financial Disclosures

- None
Estimated Prevalence and Costs of Diabetes in the U.S., 2002-2012

- Total costs of Diagnosed diabetes have risen by 41% between 2007 and 2012
- Medical expenditure for people with DM are 2.3 times higher than those without DM
- The primary driver of increased cost is the increasing prevalence of DM
- Despite the introduction of new classes of medications for DM treatment, anti-diabetic agents and supplies only account for 12% of medical expenditure

American Diabetes Association. Diabetes Care 26:917-932, 2003; Diabetes Care 31:596-615, 2008; Diabetes Care 2013, published online March 6, 2013
NCQA Practice Certification

1. Patient access and communication
2. Patient-tracking and registries
3. Care management
4. Patient self-management and support
5. Electronic prescribing
6. Test tracking
7. Referral tracking
8. Performance reporting and improvement
9. Advanced electronic communication
NCQA Update

- 6800 sites and 35,000 providers recognized
- New Standards launch March 24, 2014
  - Greater emphasis on team-based care – must designate roles and responsibilities
  - Integration with behavioral health
  - Sustained Transformation – performance improvement
  - Care management for complex cases

Basic Components of the PCMH

- Coordination and integration of care
- Quality and safety (Decision supports)
- Whole person orientation
- Personal physician
- Physician-directed medical practice
- Enhanced access
- Payment reform – quality based reimbursement

Rittenhouse RD. Health Affairs 27: 246, 2008
PCMH Demonstration Projects in DM

- Community Care of NC – 1998
  - 1200 practices and 3000 practitioners
  - exceeded NCQA quality thresholds
  - estimated annual savings of $161 million for diabetes care

Bojadzievski T and Gabbay RA. Diabetes Care 34:1047, 2011
PCMH Demonstration Projects in DM

- Community Care of NC – 1998
- Geisinger – 2006
  - 25 practices and 110 practitioners
  - 20,000 Medicare patients with diabetes
  - 2.5 – fold improvement in meeting 9 quality indicators

Bojadzievski T and Gabbay RA. Diabetes Care 34:1047, 2011
PCMH Demonstration Projects in DM

- Community Care of NC – 1998
- Geisinger – 2006
- Pennsylvania Chronic Care Initiative – 2008
  - 102 practices and 518 practitioners
  - over 56,000 patients with diabetes
  - Self management goals increased from 20 to 70%

Bojadzievski T and Gabbay RA. Diabetes Care 34:1047, 2011
**PCMH Demonstration Projects in DM**

- Community Care of NC – 1998
- Geisinger – 2006
- Pennsylvania Chronic Care Initiative – 2008
- Rhode Island Chronic Care Initiative – 2008
- Group Health Cooperative – 2007
  - 1 clinic with 9200 patients vs 19 matched control clinics
  - 29% reduction in ED visits
  - 11% reduction in hospitalizations
  - By 21 months, ROI of $1.50 for each $1 spent

Bojadzievski T and Gabbay RA. Diabetes Care 34:1047, 2011
PCMH Demonstration Projects in DM

- Community Care of NC – 1998
- Geisinger – 2006
- Pennsylvania Chronic Care Initiative – 2008
- Rhode Island Chronic Care Initiative Initiative – 2008
- Group Health Cooperative – 2007
- Health Partners – 2002
  - 50 clinics and 600 practitioners
  - 24% reduction in hospitalizations
  - 8% lower out-patient costs

Bojadzievski T and Gabbay RA. Diabetes Care 34:1047, 2011
PCMH Demonstration Projects in DM

- Community Care of NC – 1998
- Geisinger – 2006
- Pennsylvania Chronic Care Initiative – 2008
- Rhode Island Chronic Care Initiative Initiative – 2008
- Group Health Cooperative – 2007
- Health Partners – 2002
- Colorado PCMH Pilot – 2009
  - 17 practices

Bojadzievski T and Gabbay RA. Diabetes Care 34:1047, 2011
PCMH Demonstration Projects in DM

- Community Care of NC – 1998
- Geisinger – 2006
- Pennsylvania Chronic Care Initiative – 2008
- Rhode Island Chronic Care Initiative Initiative – 2008
- Group Health Cooperative – 2007
- Health Partners – 2002
- Colorado PCMH Pilot – 2009
- PCMH National Demo Pilot – 2006
- 36 practices

Bojadzievski T and Gabbay RA. Diabetes Care 34:1047, 2011
PCMH Demonstration Projects in DM

- Southeastern Pennsylvania Chronic Care Initiative – 2007 through 2011
  - 32 practices with > 64,000 patients compared to 29 control practices with almost 56,000 patients
  - 7% and 6% prevalence of diabetes, respectively
  - 5% more A1c testing – but more abnormal results
  - 11% greater monitoring for diabetic nephropathy

Friedberg MW, et al. JAMA 311:815, 2014
# Health Care Delivery Associations With Quality Care

<table>
<thead>
<tr>
<th>Change in quality (2010 vs 2008), by study group</th>
<th>Multivariate Model</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCMH vs paper health records</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>
</tr>
<tr>
<td>EHR vs paper health records</td>
<td>1.01 (0.97-1.05)</td>
<td>0.68</td>
</tr>
</tbody>
</table>

# Delivery System Impact on Performance Measures in Diabetes

<table>
<thead>
<tr>
<th></th>
<th>PCMH n (%)</th>
<th>Paper n (%)</th>
<th>EHR n (%)</th>
<th>PCMH vs Paper</th>
<th>PCMH vs EHR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A1c Testing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>3048(80)</td>
<td>5079(73)</td>
<td>2377(76)</td>
<td>P&lt;0.001</td>
<td>P&lt;0.001</td>
</tr>
<tr>
<td>2009</td>
<td>3111(83)</td>
<td>5075(74)</td>
<td>2430(78)</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>2010</td>
<td>2840(82)</td>
<td>3903(69)</td>
<td>1863(72)</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>LDL Testing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>3026(79)</td>
<td>5108(74)</td>
<td>2336(74)</td>
<td>P&lt;0.001</td>
<td>P&lt;0.001</td>
</tr>
<tr>
<td>2009</td>
<td>2948(79)</td>
<td>5057(74)</td>
<td>2361(76)</td>
<td>&lt;0.001</td>
<td>0.002</td>
</tr>
<tr>
<td>2010</td>
<td>2635(76)</td>
<td>3882(68)</td>
<td>1824(71)</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
# Delivery System Impact on Performance Measures in Diabetes

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<tr>
<th></th>
<th>PCMH n (%)</th>
<th>Paper n (%)</th>
<th>EHR n (%)</th>
<th>PCMH vs Paper</th>
<th>PCMH vs EHR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye Exams</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2008</td>
<td>1605(42)</td>
<td>2870(41)</td>
<td>1257(40)</td>
<td>P=0.59</td>
<td>P=0.115</td>
</tr>
<tr>
<td>2009</td>
<td>1575(42)</td>
<td>2697(39)</td>
<td>1183(38)</td>
<td>0.005</td>
<td>&lt;0.001</td>
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<tr>
<td>2010</td>
<td>1552(45)</td>
<td>2247(39)</td>
<td>986(38)</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
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<tr>
<td><strong>Nephropathy Screening</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>2588(68)</td>
<td>3980(57)</td>
<td>1896(60)</td>
<td>P&lt; 0.001</td>
<td>P&lt;0.001</td>
</tr>
<tr>
<td>2009</td>
<td>2495(67)</td>
<td>3854(56)</td>
<td>1829(50)</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>2010</td>
<td>2255(65)</td>
<td>2845(50)</td>
<td>1383(54)</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
# FQHC Transition to PCMH

## Table 1. Annual Use of PCMH Services by Patients With Diabetes

<table>
<thead>
<tr>
<th>Group and Year</th>
<th>Patients, No.</th>
<th>Outreach Services&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Diabetes Education Services&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Psychosocial Care Services&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Primary Care Services&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Received, %</td>
<td>Mean (SD), No.&lt;sup&gt;e&lt;/sup&gt;</td>
<td>Received, %</td>
<td>Mean (SD), No.&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td>HbA&lt;sub&gt;1c&lt;/sub&gt; ≤9%&lt;sup&gt;f&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>398</td>
<td>59.0</td>
<td>2.1 (3.2)</td>
<td>0.0</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2004</td>
<td>696</td>
<td>74.4</td>
<td>3.2 (4.4)</td>
<td>0.0</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2005</td>
<td>914</td>
<td>78.2</td>
<td>3.2 (3.9)</td>
<td>0.0</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2006</td>
<td>1,031</td>
<td>81.5</td>
<td>3.2 (3.9)</td>
<td>0.0</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2007</td>
<td>1,085</td>
<td>70.8</td>
<td>3.0 (3.3)</td>
<td>0.0</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2008</td>
<td>1,251</td>
<td>86.4</td>
<td>3.4 (3.3)</td>
<td>4.1</td>
<td>0.1 (0.4)</td>
</tr>
<tr>
<td>2009</td>
<td>1,512</td>
<td>82.6</td>
<td>3.4 (3.6)</td>
<td>21.1</td>
<td>0.5 (1.4)</td>
</tr>
<tr>
<td>2010</td>
<td>1,731</td>
<td>90.1</td>
<td>4.2 (4.1)</td>
<td>19.4</td>
<td>0.5 (1.2)</td>
</tr>
<tr>
<td>2011</td>
<td>2,057</td>
<td>95.3</td>
<td>5.9 (5.6)</td>
<td>53.3</td>
<td>1.3 (2.2)</td>
</tr>
<tr>
<td>HbA&lt;sub&gt;1c&lt;/sub&gt; &gt;9%&lt;sup&gt;f&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>161</td>
<td>60.2</td>
<td>1.8 (2.7)</td>
<td>0.0</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2004</td>
<td>234</td>
<td>73.9</td>
<td>2.4 (3.2)</td>
<td>0.0</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2005</td>
<td>307</td>
<td>78.2</td>
<td>2.6 (3.0)</td>
<td>0.0</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2006</td>
<td>321</td>
<td>72.3</td>
<td>2.5 (2.8)</td>
<td>0.0</td>
<td>0.0 (0.0)</td>
</tr>
<tr>
<td>2007</td>
<td>295</td>
<td>87.8</td>
<td>3.2 (3.3)</td>
<td>6.2</td>
<td>0.1 (0.4)</td>
</tr>
<tr>
<td>2008</td>
<td>369</td>
<td>93.8</td>
<td>4.0 (3.4)</td>
<td>6.2</td>
<td>0.1 (0.4)</td>
</tr>
<tr>
<td>2009</td>
<td>425</td>
<td>96.0</td>
<td>6.3 (5.2)</td>
<td>40.2</td>
<td>0.9 (1.8)</td>
</tr>
<tr>
<td>2010</td>
<td>447</td>
<td>95.3</td>
<td>6.1 (4.6)</td>
<td>39.6</td>
<td>1.0 (1.7)</td>
</tr>
<tr>
<td>2011</td>
<td>551</td>
<td>98.5</td>
<td>8.7 (7.3)</td>
<td>77.8</td>
<td>2.6 (3.3)</td>
</tr>
</tbody>
</table>

Figure 1. Mean HbA₁c values for patients seen throughout the 9-year practice transformation to a PCMH.

- HbA₁c ≤ 9% (n = 395)
- HbA₁c > 9% (n = 150)
- All (N = 545)

CDE = certified diabetes educator; EHR = electronic health record; HbA₁c = glycated hemoglobin.

Table 4. Key Factors Supporting Higher-Performing Practices

<table>
<thead>
<tr>
<th>Key Factor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health information technology</td>
<td>Early adoption of EHRs (4 of 5 higher-performing practices had EHRs in place ≥2 years before PCMH implementation)</td>
</tr>
<tr>
<td>Administrative leadership</td>
<td>Highly engaged practice administrators who championed the PCMH transformation</td>
</tr>
<tr>
<td>Clinician leadership</td>
<td>Regular clinician meetings to discuss performance, agree on clinical guidelines, and establish standards of care</td>
</tr>
<tr>
<td>Shared vision and buy-in</td>
<td>Careful articulation and reinforcement of how the medical home will help patients and the practice and the need for changes</td>
</tr>
<tr>
<td>Staff development</td>
<td>Team orientation and early development of medical assistant role</td>
</tr>
<tr>
<td>Focus on improvement</td>
<td>Meetings revolve around PCMH and clinical quality improvement</td>
</tr>
<tr>
<td>Shared decision making</td>
<td>Feedback from practice consistently sought on changes before, during, and after implementation</td>
</tr>
<tr>
<td>Accountability</td>
<td>Clear roles and responsibilities and accountability to these roles and responsibilities</td>
</tr>
<tr>
<td>Finances</td>
<td>Stable billing and administrative systems</td>
</tr>
<tr>
<td>Financial autonomy</td>
<td>Direct receipt of and ability to invest PCMH financial incentives</td>
</tr>
<tr>
<td>Benchmarking</td>
<td>Monthly clinician-specific benchmarking to identify best practices and breakdowns in PCMH processes</td>
</tr>
<tr>
<td>Reporting and documentation</td>
<td>Careful attention to data reporting and documentation of PCMH changes</td>
</tr>
<tr>
<td>Inclusivity</td>
<td>Collective problem solving and open communication</td>
</tr>
<tr>
<td>Staff stability</td>
<td>Minimal staff turnover</td>
</tr>
</tbody>
</table>
Racial Comparisons in a PCMH

**Figure 1**—Adjusted ORs for diabetes processes and intermediate outcomes of care. Adjusted ORs for black patients represent the likelihood of receiving a process of care or achieving an intermediate outcome of diabetes care compared with non-Hispanic white patients. Black patients were less likely to receive A1C testing and influenza vaccination and were less likely to have an LDL <100 mg/dL and BP <140/90 mmHg. Model covariates include age, sex, marital status, education, insurance type, social support, mental and physical health composite scores, BMI, total number of diabetes complications, modified Charlson comorbidity index, and treatment intensity and clinical care continuity.
Pioneer ACOs

- 32 ACOs with > 669,000 Medicare beneficiaries
- 25/32 had reduced risk-adjusted readmission rates compared to benchmark plans
- 68% of people with diabetes reached BP targets compared to 55% in benchmark plans
- 57% with diabetes reached LDL-c targets compared to 48% in benchmark plans

Pioneer ACOs
Financial Outcomes

- Only 2 programs lost money (total $4 million)
- 2012 Medicare spend increased 0.3% compared to 0.8% in benchmark plans
- Pioneer Plans had gross savings of $76 million
- 13/32 plans saved $87.6 million ($33 million to the Medicare Trust Fund)

Medicare Shared Savings Program

- 114 programs plus 123 joining as of 1/2014
- 360 Medicare ACOs in 47 states and DC
- 54/114 spent less than budget benchmarks
- 29/114 qualified for shared savings
  - $126 million to plans
  - $128 million to Medicare Trust Fund

http://www.brookings.edu/blogs/up-front/posts/2014/02/07-results-medicare-shared-savings-program-kocot-mostashari
Engineering a Better Health Care System
A report from the President’s Council of Advisors on Science and Technology

• Accelerate alignment of payment systems with the desired outcomes
• Increase access to relevant health data and analytics
• Provide technical assistance in systems engineering approaches
• Involve communities in improving health care delivery
• Share lessons learned

Cassel CK and Saunders RS. JAMA published online July 14, 2014
Summary

- Health care delivery systems must insure the infrastructure to provide this level of care to patients with diabetes.
- Preliminary data suggests that PCMH/ACOs can provide high quality care for people with diabetes at decreased cost.