Using Health Information Technology to Improve Quality of Care in New York City

Brent Stackhouse, Executive Director
Primary Care Information Project
NYC Department of Health & Mental Hygiene
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Agenda

Primary Care Information Project (PCIP)

PCIP Quality Improvement

PCIP Population Health Analysis

Lessons Learned
2005: Palm Pilots are the wave of the future!

PALM PILOTS!
800+ distributed to improve:
• Disease Management
• Quality of care
• Ongoing education and training
• Emergency Preparedness
• Remote access to the HAN during emergencies

Dear Healthcare Providers,

There's been an explosion of activity involving hand-held technologies in health care. About a third of healthcare providers are carrying PDAs. Hundreds of hospitals and clinics are implementing wireless networks. Many companies are developing health care applications for hand-held devices. Many hardware companies are introducing next-generation PDAs, Tablet PCs, smart phones and more.

Why is the interest in healthcare mobile technologies exploding? Simple. Because in health care, providing easy access to information can save lives.

At eClinician.org, we believe hand-held technologies will be the starting-point to the automation of clinical and financial systems throughout health care.

That's why eClinician team has launched eClinician Newsletter- to keep you updated with the latest news and developments, to answer your questions and concerns and to provide some nice tips for optimum use of hand-held devices.

This Issue Features
Avantgo User Guide
Primary Care Information Project

PCIP, a bureau of NYC DOHMH, was founded by Mayor Bloomberg in 2005

Mission

• Improve the quality of care in medically underserved areas through health information technology (HIT)

Success

• Over **9,055** providers receiving EHR and Meaningful Use assistance
  • 1,118 small practices
  • 75 community health centers
  • 26 hospitals & outpatient clinics
Primary Care Information Project

PCIP Programs Today

NYC DOHMH: PRIMARY CARE INFORMATION PROJECT

- EHR Adoption & Meaningful Use
  - Federal Regional Extension Center
  - Outreach
  - Implementation

- Quality Improvement
  - Practice Consulting Group
  - Clinical Quality Specialists
  - Billing Consulting
  - Training

- Pay for Quality & Research
  - Program Evaluation and Planning

- Public Health Monitoring
  - Public Health Informatics/Development
  - Healthcare Quality Information Network
  - Diabetes Registry
EHR Adoption Technical Assistance

Outreach
- Provider education
- Budgeting
- Vendor selection

Implementation
- Project management
- Workflow redesign
- Staff preparation

Meaningful Use
- Standard documentation
- Customized clinical alerts
- Quality measures
- Privacy & security of patient data
- Health information exchange

Improved Outcomes
- Coordinated, patient-centered care

Go live
Impact of Technical Assistance

Estimated Effect Of The Primary Care Information Project On Quality For Electronic Health Record (EHR)-Sensitive Measures, By Level Of Technical Assistance

## Data Collection and Analytics

<table>
<thead>
<tr>
<th>Data type</th>
<th>Method</th>
<th>Practice level</th>
<th>Provider level</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quality Measures</strong></td>
<td>Monthly transmissions of the PCIP-defined quality measures from eClinicalWorks practices</td>
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<td>X</td>
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<tr>
<td><strong>Utilization measures</strong></td>
<td>Monthly transmissions of PCIP-defined utilization measures from eClinicalWorks practices</td>
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<tr>
<td><strong>Meaningful Use measures</strong></td>
<td>Monthly transmissions of meaningful use metrics from eClinicalWorks practices Meaningful Use Adoption and Quality dashboards</td>
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<tr>
<td><strong>Procedure data</strong></td>
<td>Monthly transmission of aggregate CPT counts</td>
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<tr>
<td><strong>Syndromic Surveillance</strong></td>
<td>Daily transmissions of ILI and GI from eClinicalWorks practices on days the practice operates</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Hub data</strong></td>
<td>Daily transmissions in response to specific queries</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>Salient data</strong></td>
<td>Medicaid claims</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>SHIN-NY (Pending)</strong></td>
<td>Healthcare data from NYC facilities connected to a Regional Health Information Organization (RHIO)</td>
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<td>X</td>
</tr>
</tbody>
</table>
The Hub Query Model of Data Collection

- Send messages
- Pull Data
- 3000 providers
- 3,000,000 patients

- By borough, zip code, gender, age, diagnosis, vital signs, medications, etc
- **NO** patient level data
- We can pull data/ask questions of the EHRs such as:

  “How many patients in each borough have high blood pressure (or asthma, or…) ?”

  “What % of women in the Bronx over the age of 65 with diabetes have controlled blood sugars?”

  “What % of New Yorkers by zip code are obese?”
Operationalizing Data

Assessment

Over **9,055** providers receiving EHR and Meaningful Use assistance

- Data analysis for program evaluation
- Feedback to providers
- Pay for Performance programs
- Public Health monitoring
- Data-driven resource allocation
- Shared w/ internal DOH PH Partners

Assurance

PCIP Uses of Data

<table>
<thead>
<tr>
<th>Quality measures</th>
<th>Utilization data</th>
<th>Meaningful Use</th>
<th>Population Health data</th>
<th>Syndromic surveillance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Public Health monitoring shared w/ external DOH PH Partners</td>
</tr>
</tbody>
</table>

Policy Development

- We help providers adopt and implement EHRs
- Practices send health care quality data to us directly from their EHR
- We analyze that data
- We develop and implement programs to improve health care quality for NYC
Feeding Data Back to Providers

- Quality-of-care measurement
  - 10 EHR Use Measures
    - What % are eprescribing
  - 10 Quality-of-care measures
    - Diabetes control
    - Blood pressure control
    - Smoking status
    - Mammography
  - Recommendations
  - Flu-like illness
Impact of Provider Dashboards

- Introduction of dashboards led to overall improvement across measures displayed on the dashboard.
- Providers that reach out to PCIP for help improve their performance more quickly.
- Improvement across all quality measures was observed for low and higher performing practices.
- In 2012, PCIP developed special edition dashboards focused on Immunization (sent to 639 providers) and Sexual Health (sent to 897 providers), delivered Take Care New York dashboards to an average of 750 providers per month, and developed a Meaningful Use-focused dashboard, which is currently being piloted with 145 providers.

On The Dashboard

- Smoking Status
- Quit Intervention
- BP Control
- Cholesterol Screening
- HbA1c Testing
- HIV Screening
- Breast Cancer Screening
- Sexual History

= at/above benchmark/average at time of first DB
Influencing Policy (BMI Analysis)
Using Health IT for Public Health Alerts (Metronidazole Recall)

Distributed patient specific alert accessible via CDSS right pane.
Overall Progress - Delivery of Clinical Preventive Services Across 56 Practices

- A1c Screening*: 46.3% (Pre EHR Upgrade) vs. 62.4% (Post EHR Upgrade)
- Body Mass Index recorded*: 45.9% (Pre) vs. 55.0% (Post)
- Blood Pressure Control*: 45.6% (Pre) vs. 53.2% (Post)
- Aspirin Therapy*: 27.8% (Pre) vs. 32.3% (Post)
- Smoking Status recorded*: 20.5% (Pre) vs. 24.0% (Post)
- Breast Cancer Screening*: 31.3% (Pre) vs. 31.0% (Post)
- Influenza Vaccination*: 31.3% (Pre) vs. 30.4% (Post)
- Cholesterol Control: 76.6% (Pre) vs. 77.9% (Post)
- Smoking Cessation Intervention: 76.6% (Pre) vs. 77.9% (Post)

*p<.05
Overall Progress in PCIP – 2 year trend

<table>
<thead>
<tr>
<th>Time</th>
<th>Antithrombotic therapy</th>
<th>Blood pressure control</th>
<th>Hemoglobin A1c Testing</th>
<th>Smoking Cessation Intervention</th>
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</thead>
<tbody>
<tr>
<td>Oct 2009 (T1)</td>
<td>58.4</td>
<td>55.3</td>
<td>46.4</td>
<td>29.3</td>
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<tr>
<td>Oct 2010 (T2)</td>
<td>66.7</td>
<td>58.5</td>
<td>50.6</td>
<td>34.5</td>
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<tr>
<td>Oct 2011 (T3)</td>
<td>74.8</td>
<td>64.1</td>
<td>57.7</td>
<td>46.2</td>
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<td>Difference between T1 and T2</td>
<td>8.3*</td>
<td>3.1</td>
<td>4.2</td>
<td>5.2</td>
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<tr>
<td>Difference between T2 and T3</td>
<td>8.1*</td>
<td>5.5*</td>
<td>7.1*</td>
<td>11.7*</td>
</tr>
<tr>
<td>Difference between T1 and T3</td>
<td>16.4**</td>
<td>8.8*</td>
<td>11.3*</td>
<td>16.9**</td>
</tr>
</tbody>
</table>

*: p<0.05; **: p<0.001
Lessons Learned and Policy Obstacles

- Being first has advantages but also requires a lot of work, and lessons learned the hard way
  - EHR vendor collaboration easy but provider interest was limited
  - Locally hosted servers require regular maintenance and result in data transmission issues, but are preferable when broadband access is limited
  - Tablets better for patient engagement
  - Lab Company buy-in essential for small practice integration and compendium updating

- Obstacles
  - Health information exchange functionality in systems not standardized federally
  - Payers not incentivized to subsidize adoption although main beneficiary
  - Diversity of payer population reduces interest in supporting practices directly
  - Quality Measures are a moving target
    - HEDIS/QARR, PQRS, Meaningful Use
Learning Collaboration

- Large practice learning collaborative
- NYC REACH Resource Library
- Regional Extension Center Health Information Technology Resource Center (HITRC)
- [www.HealthITxChange.org](http://www.HealthITxChange.org)