Can Quality Improvement Initiatives Improve Diabetes Care:

The Partnerships For Health Project

Stewart Harris  MD, MPH, FCFP, FACPM
Canadian Diabetes Association - Chair in Diabetes Management
Ian McWhinney Chair of Family Medicine Studies

October 20, 2011

Diabetes Worldwide Epidemic:
GLOBAL PROPORTION OF PEOPLE WITH DIABETES (20-79 YEARS)

2030
Global Prevalence = 7.9 (439 million)

IDF. Available at: http://www.diabetesatlas.org/content/diabetes-and-impaired-glucose-tolerance
Diabetes - strain on healthcare budgets

Canada:
- Currently cost ~ $12.2 billion
- By 2020 ~ $16.9 billion by 2020

United States
- In 2009 ~ $113 billion
- By 2034 ~ $336 billion

Global in 2025:
7 to 13% of total healthcare budget


- The number of adults with diabetes increased by 113%, while the population grew by only 17%.
- This is a linear increase of a mean 6.2% per year.

CDA Response:

- Clinical Practice Guidelines published every 5 years (most recently in 2008)

- Best and most current evidence-based clinical practice data for healthcare professionals

http://www.diabetes.ca/for-professionals/resources/2008-cpg/

Health Care Policy Response

- Federal Level
  - National Diabetes Strategy
  - Primary care reform

- Provincial Level
  - Ontario Diabetes Strategy
  - Ontario Diabetes Registry

- Primary healthcare teams established to do:
  - Health promotion/disease prevention/chronic diseases management

Role of EMR/Registry
- allow data tracking (surveillance) to inform system change

Improvement Initiatives, Research, Evaluation, Knowledge Translation

Partnerships for Health
A Chronic Disease Prevention and Management Initiative

Quality Improvement & Innovation Partnership
Advancing Improvement in Primary Healthcare in Ontario

ICES Institute for Clinical Evaluative Sciences

http://www.partnershipsforhealth.ca/
http://qiip.ca/
http://www.ices.on.ca/
Partnerships for Health
A Chronic Disease Prevention and Management Initiative

• Partnerships for Health (PFH) quality improvement initiative that aimed to improve the management of diabetes in primary care

• Implemented Jan 2008 to Jan 2011

• Made use of the CDPM framework, IHI-BTS methodology and the Model for Improvement

PFH Intervention

• Educational activities re:
  ▫ Redesigning care processes
  ▫ Applying the CPG in practice
  ▫ Using a team approach (practice/community members)
  ▫ Better use of Technology to establishing a QI mechanism (data tracking) and adhere to CPGs
  ▫ Emphasizing patient self-management

• Supportive activities:
  ▫ teleconferences, onsite coaching, web-based tools, and IT support/training
Participating Teams

- 32 practices participated in 3 waves implemented in phases over 3 years

Participants by profession

- 42% (132) Administrative Staff (internal & external)
- 23% (74) Allied Providers (external)
- 20% (64) Allied Providers (internal)
- 15% (46) Family Physicians

Total participants: (74) (132) (46) (64)
Evaluation

- Centre for Studies in Family Medicine at UWO was contracted to do an external mixed-method comprehensive evaluation of the project

- Examined if implementation & participation in project resulted in:
  - change in the delivery of chronic care (more aligned with the Ontario CDPM framework)
  - improved diabetes clinical process and outcome measures

Evaluation Framework

- Logic model approach to display links between program activities and anticipated outcomes, and to identify indicators for data collection

- Mixed-method, multi-measure, pre-post design
  - Participant observation & document review
  - Provider/admin surveys and individual interviews
  - Chart reviews
  - Patient surveys and focus groups

- Convergence triangulation of all data

(O’Cathain, Murphy, & Nicholl, 2010)
**Samples and Return Rates**

**Chart Review**
- 1660 sample size

**Patient Survey**
- 69% return rate

**Provider/Admin Survey**
- 78% return rate

**Interviews and Focus Groups**
- 93 participant interviews
- 82 patients (15 groups)
Results

- The Intervention – What worked well?
- Team Functioning
- Care Processes
- Clinical Outcomes
- Information Management
- Patient Perspective
- Participant Perspective

The intervention:
What Worked Well & Had the Most Impact?

- Formal offsite learning sessions separated by short action period (3-4 months)
- Networking opportunity within teams and with other participating teams
- Ongoing IT support to establish QI mechanism in both EMR and paper-based practices
The intervention: What Worked Well & Had the Most Impact?

• Practice coaching:
  ◦ Ongoing hands-on support and motivation
  ◦ Sharing of trials and errors of other teams

• Monthly teleconferences:
  ◦ Expert speaker presentations positive, especially for those who could not attend education sessions

• Web-based tools:
  ◦ Facilitated project activities & communication
  ◦ Access to right technologies challenging for some

Team Functioning

P4H resulted in...

• Better understanding & use of skills

• Enhanced communication & coordination

• Partnerships with community providers influenced by:
  ◦ Team composition
  ◦ Location of team members
  ◦ Staffing resources
  ◦ Size of practice
  ◦ Access to charting system
  ◦ QI focus

Harris et al, 2011

Team composition
Location of team members
Staffing resources
Size of practice
Access to charting system
QI focus
Care Processes

- Better patient flow (i.e. reduced duplication)
- Improved patient monitoring & care planning
- Enriched patient-centeredness
- Significant improvement in the documentation system and practice resulting in better adherence to CPG including intensification of treatment

% patients with documented self-management (SM) goals, counselling on SM and health behaviours, and documented smokers

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Post (12 months)</th>
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<tbody>
<tr>
<td>SM Goals</td>
<td>11.9</td>
<td>34.8</td>
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<tr>
<td>Counselling on SM and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Behaviours</td>
<td>58.2</td>
<td>71.8</td>
</tr>
<tr>
<td>Smokers</td>
<td>26.4</td>
<td>18.3</td>
</tr>
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</table>

Significant change
Clinical Process & Outcomes

- In general, results showed a significant increase in both clinical process measures and clinical outcomes measures
  - Improved monitoring
  - Improved number of patients at meeting target
  - Improved HbA1C, LDL, BP values
  - Intensification of treatment

Clinical Processes - monitoring

% patient with documented HbA1c test, LDL, ACR test, and BP

- Significant change
  - HbA1c test
  - LDL
  - ACR test
  - BP
Clinical Processes - monitoring

% patient with documented foot exam, eye exam, and depression screen

Baseline  Post (12 months)

Significant change

Foot exam  Eye exam  Depression screen

Clinical Outcomes - patients at target

% patients at target HbA1c, LDL, and BP

Baseline  Post (12 months)

Significant change

HbA1c ≤ 7  LDL ≤ 2.0  BP ≤ 130/80
Clinical Outcomes - HbA1c values

**Mean HbA1c (%)**

- Baseline
- Post (12 months)

![HbA1c Graph](image)

Clinical Outcomes LDL values

**Mean LDL (mmol/L)**

- Baseline
- Post (12 months)

![LDL Graph](image)
Clinical Outcomes - BP values

Mean BP (mmHg)

- Baseline Systolic
- Post Systolic

Harris et al, 2011

Systolic Diastolic
Entire Sample

Systolic Diastolic
Patients Above Target

Significant change

Clinical Outcomes

% of patients at post with intensification of treatment

- Waves 1 & 2 (12 months)

Glycemic
Hypertension
Lipid
**Information Management**

- Improved understanding of data & technology
- Better access to patient data
- Data quality limited by:
  - System capacity
  - Accurate/standardized data entry
- **EMR enhanced**
  - Coordination of care, communication & sharing of patient information, work performance & productivity, & quality decision making

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**Patients-level Data**

- Results we mixed and individualised
- Some increased knowledge of
  - diabetes
  - self-management strategies
- Better participation in
  - self-management
  - treatment plan
- Significant improvement in Enablement*
- No significant improvement in
  - Quality of life**
  - Depression***
  - Empowerment****
- Overall improved patient satisfaction

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* Patient Enablement Instrument of 8 item mean score on Likert scale of 1 to 5 (Howie, J. et al., 1998)
** EQ-5D Quality of life visual analog scale of 0 to 100 (The EuroQol Group, 1990)
*** PHQ-9 Depression scale summary score on Likert scale of 0 to 3 (Lowe, B., et. al., 2004)
****Diabetes Empowerment Scale SF of 9 item summary score on Likert scale of 0 to 3 (Anderson, R. et. al., 2003)
Spread & Sustainability

- Spread via
  - sharing data & staff
  - organizing education sessions
  - applying new approach to other diseases

- Lack of comfort & skills in educating coworkers for a change in mindsets/buy-in

- Confident to sustain structured visits & data collection but not monthly meetings, PDSA, etc.

Providers’ Perspective re: Key Lessons Learned

- Recognized need QI mechanism as an ongoing activity which fuels improvement efforts

- More open-minded re: opportunities to improve

- Increase sense of empowerment to facilitate and implement change in the practice

- Better appreciation of the importance of team composition and leadership
Providers’ Perspective re: Key Lessons Learned

• Knowledge and adherence to CPG
  ▫ Increased awareness of and application in practice

• System change takes time & effort
  ▫ External supports
  ▫ Program planning and evaluation
  ▫ Data tracking is a critical element to understanding effectiveness
  ▫ Benefits occur over time
  ▫ Always will be room for improvement

Take Away Message from the Providers’ Perspective

• Sense of accomplishments
  ▫ improved knowledge and care processes
  ▫ made a difference in their patients lives

• Recognized the power of data

• For better care must:
  ▫ Monitor and meet targets
  ▫ Be patient-centered
  ▫ Identify and motivate “lost” patients
Summary

Evaluation results...

• Endorse primary care providers taking part in initiatives like PFH to improve chronic disease care delivery, team functioning/interactions, and diabetes-related clinical processes and outcomes

• Provide evidence of the importance of education programs and ongoing support to assist providers to change practices to contribute to primary care reform

• Support development of QI mechanism and better utilization of IT systems to improve care

Policy Implications

• Team approach can make a difference when provided with the external supports such as education, time, external support, subsidies, etc...
  ◦ Need to go beyond funding models
  ◦ Example need to coordinate incentive programs (ie. OHIP billing bonuses)
Policy Implications

• Sustainability of P4H outcomes is possible because of the intrinsic change in mindset related to QI and care delivery
  ◦ Difference between system level change and local change
  ◦ Importance of the flexibility within the intervention to tailor practice change to the needs of the patient population using specific set of resources (skills of team members, available community resources, etc)

Policy Implications

• The evaluation of other QI initiatives will provide more insights into policy implications related to improving healthcare delivery in Ontario

• For example QIIP and the evaluation results of their Learning collaborative program should reveal some valuable information...
Questions and Discussion

**QIIP**

- Quality Improvement & Innovation Partnership (QIIP) aimed at improving healthcare delivery in Ontario starting with:
  - diabetes care
  - colorectal cancer screening
  - access to primary care

- Meant to assist the 150 newly created Family Health Teams (FHT) shift focus from the traditional reactive model to a proactive planned approach to reduce strain on Ontario’s healthcare system by:
  - building inter-professional care teams
  - improving partnerships with community healthcare providers
  - initiating quality improvement programs in practice
  - improving prevention, interventions, care management, and office practice designs

- In 2008, QIIP launched the first of three waves of Learning Collaboratives to accelerate practice change
# Evaluation Objectives and Methodology

<table>
<thead>
<tr>
<th>Evaluation Objectives</th>
<th>Evaluation Methodology</th>
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<tbody>
<tr>
<td>1 To describe the QIIP Learning Collaborative initiative with a logic model</td>
<td>Logic Model production using Consensus Facilitator guided development</td>
</tr>
</tbody>
</table>
| 2 To describe and evaluate the intended and actual implementation of the QIIP Learning Collaboratives | • Review of LC program documentation  
• Key Informant Interviews |
| 3 To document the QIIP Learning Collaborative participation experience | • Key Informant Interviews  
• Survey (4 members from all QI teams) |
| 4 To document the application of Learning Collaborative teachings to other clinical situations | • Key Informant Interviews  
• Survey  
• Health administrative data analysis |
| 5 To measure the clinical changes over time | • Retrospective chart audit of diabetes management and colorectal screening actions pre, during, and post Learning Collaborative  
• Health administrative data analysis |
| 6 To assess the relationship between team and practice characteristics with the evaluation clinical outcomes | • Retrospective chart audit of diabetes management and colorectal screening actions  
• Survey (Team functioning; demographics) |
| 7 To compare diabetes, colorectal screening, and access outcomes of the QI teams to control practices | • Cluster, matched sample control, pre-post  
• Health administrative data analysis |
| 8 To compare the QIIP evaluation results to the Partnerships for Health results. | Parallel mixed methods analysis/review |

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## QIIP

- What we already know from P4H is that QIIP team reported not realising the full potential of QI until provided with ongoing/onsite IT support

- What we already know from P4H is that offsite education session and time for team building are critical features of the intervention

- This and additional P4H data re: web-based program has implications related to the possible effectiveness of QIIP learning communities