Improving Diabetes Outcomes through Web-Based Registry and Interactive Education

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Background
- The New York Diabetes Coalition (NYDC), founded in 1999, is a partnership of health plans, medical societies, health departments, community-based organizations, quality improvement agencies, Health care providers, and diabetes care vendors.
- NYDC brings together health care professionals and other stake holders to adopt, endorse, and distribute a guideline for the management of adult diabetes.
- In New York State, 8.9% of the adults population (1.3 million) has diabetes.
- Chronic Care Model with emphasis on electronic decision support system (i.e. Registry) is shown to improve health outcomes of patients with diabetes.

Objectives & Hypothesis

OBJECTIVES
1. To support guideline adoption by primary care practices
2. To promote use of an electronic diabetes registry
3. To develop an interactive educational module on using the registry and improving patient communication

HYPOTHESIS
The use of a prompting registry would achieve measurable and clinically meaningful improvement in the proportion of patients at goal for diabetes health metrics.

Research Design & Methods
- The NYDC exploratory project recruited seven small to mid-sized primary care practices.
- The patient cohort included those with two or more visits with a diagnosis of diabetes spanning a 12 month period.
- Health measure status (at goal, above goal, not recorded) for HbA1C, LDL and blood pressure and average HbA1C values for each patients were determined each quarter.
- Data were explored using descriptive methods, and then analyzed using random effects regression to assess change over time.

Results
After controlling for variability between sites:
- Patients were 1.4 times more likely to have HbA1C < 9.
- Patients were almost twice (OR = 1.8) as likely to have LDL <100.
- Patients were 1.3 times more likely to have BP < 140/90.
- These improvements in compliance were statistically significant.
- Average A1C also improved over time, though this did not reach statistical significance.

Table 1. Odds Ratios for time effects from compliance regression models

<table>
<thead>
<tr>
<th>Measure</th>
<th>OR</th>
<th>95% CI (OR)</th>
<th>P- Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HbA1C &lt; 9</td>
<td>1.43</td>
<td>1.05-1.31</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>LDL &lt;100</td>
<td>1.83</td>
<td>1.63-2.07</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>BP &lt; 130/80</td>
<td>0.93</td>
<td>0.89-0.98</td>
<td>0.003</td>
</tr>
<tr>
<td>BP &lt;140/90</td>
<td>1.31</td>
<td>1.25-1.37</td>
<td>&lt; .001</td>
</tr>
</tbody>
</table>

Conclusion
1. The project demonstrated utilizing a Web-based registry and interactive education improved patient outcomes
2. The project demonstrated feasibility of collecting aggregate data from unrelated, independent practices.
3. This project supports a growing consensus of the value and practicality of registry-based patient care.