Asheville Project improves patient outcomes, cuts medical costs

A study published in March found that patients with diabetes mellitus participating in a long-term pharmaceutical care services program lowered their hemoglobin A\textsubscript{1c} level, used fewer sick days, and helped their employer spend less on insurance and prescription claims.\(^1\)

The report was part of a four-article series examining patients with diabetes mellitus who participated in the Asheville Project, a disease management program in which two large North Carolina self-insured employers—the City of Asheville and Mission–St. Joseph’s Health System—offer employees, dependents, and retirees the added health care benefit of monitoring services provided by community pharmacies.

The long-term study is unique, according to the authors, because it is the first to assess for up to five years the clinical and economic outcomes of pharmaceutical care services provided by community pharmacies to patients with diabetes mellitus.

Earlier short-term studies showed promising results—patients with diabetes mellitus participating in educational intervention programs significantly reduced their hemoglobin A\textsubscript{1c} level. But a meta-analysis of those studies found that the improvements in glycemic control tended to decline within three months after intervention ceased.

The important conclusion of the long-term study, said coauthor Carole W. Cranor, a pharmacoeconomist with PPD Development Inc. of Morrisville, North Carolina, and a graduate student at the University of North Carolina at Chapel Hill at the time of the study, is that patients’ improvement in hemoglobin A\textsubscript{1c} level persisted over time.

At every six-month interval, researchers noted, more than 50% of patients had a lower hemoglobin A\textsubscript{1c} level than when they first enrolled in the program. Also, at all six-month follow-ups, there were patients whose hemoglobin A\textsubscript{1c} value had initially been high but was, at the time of retest, optimal.

Optimal hemoglobin A\textsubscript{1c} was defined as a value of <7%, the target range set by the American Diabetes Association.

Low- and high-density-lipoprotein cholesterol concentrations also improved, researchers reported, but not substantially (table).

City of Asheville employees began enrolling in the program in March 1997, and employees of Mission–St. Joseph’s Health System began enrolling two years later. No age or other eligibility restrictions were imposed on patients, according to the report.

A total of 194 patients with diabetes mellitus had made at least one visit for pharmaceutical care services since the launch of the program.

Copayments for diabetes-specific medications and supplies were waived for patients participating in the program. Patients were also given a blood glucose meter for home use.

Participating pharmacists from 12 community pharmacies completed a certificate program in diabetes sponsored by Mission–St. Joseph’s Diabetes Education Center and the North Carolina pharmacy schools at the University of North Carolina at Chapel Hill and Campbell University at Buies Creek.

The training program was based on guidelines from the American Diabetes Association, but pharmacists in the program were not required to become certified diabetes educators.

Findings from the Asheville Project, researchers noted, “refute the idea that pharmacists must be certified diabetes educators to help patients with diabetes improve clinical outcomes.”

Patient care. Patients had the opportunity to meet with a pharmacist each month at no charge to be taught about diabetes mellitus, have their condition monitored, and undergo a physical assessment of their feet, skin, weight, and blood pressure.

“One of the wonderful things” about the program, Cranor said, is that a pharmacist is easily available for patients to visit to discuss concerns. Blood glucose levels need continuous monitoring, she said, and pharmacists can help patients make decisions about diet, exercise, and medications.

Pharmacists referred patients to physicians as needed, researchers noted.

Many pharmacists in the program faxed summaries of patient visits to the patients’ physicians and established collaborative-type working relationships with those physicians, Cranor noted.

“That is a significant event, especially for community pharmacists,” she said.

Pharmacists were paid on a fee-for-service basis patterned after a federal claims model, Cranor said.

Employer savings. Researchers found that the employers’ mean insurance costs per patient per year decreased by $2704, $3609, $3908, $5480, and

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<thead>
<tr>
<th>Follow-Up Visit (No. Patients)</th>
<th>Median Change from Baseline</th>
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<tbody>
<tr>
<td></td>
<td>LDL-C (mg/dL)</td>
</tr>
<tr>
<td>1 (122–136)</td>
<td>–2.5</td>
</tr>
<tr>
<td>2 (70–81)</td>
<td>–4.5</td>
</tr>
<tr>
<td>3 (43–55)</td>
<td>–7</td>
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<tr>
<td>4 (29–39)</td>
<td>–5</td>
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<tr>
<td>5 (19–26)</td>
<td>–5</td>
</tr>
<tr>
<td>6 (10–16)</td>
<td>–0.5</td>
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<tr>
<td>7 (9–11)</td>
<td>–18</td>
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*Adapted from reference 1. Follow-up visits occurred about every six months. LDL-C = low-density-lipoprotein cholesterol, HDL-C = high-density-lipoprotein cholesterol, Hgb = hemoglobin.
$6502 in the first through fifth follow-up years, respectively.

But during the same years, the mean total prescription costs increased by $656, $1487, $1932, $1942, and $2188 per patient per year.

However, Cranor noted, the total mean direct medical costs per patient per year decreased between $1622 and $3356.

The City of Asheville estimated it gained $18,000 per year in employees' productivity.

Researchers were unable to make a similar estimate for Mission–St. Joseph's, Cranor said, because the health system did not differentiate sick leave from vacation leave.

**Caveats.** Cranor acknowledged that the design of the study had limitations. Pharmacists were not required to document the exact number of minutes spent with a patient, even though reimbursement was partially tied to the length of a patient visit, she said.

In retrospect, Cranor said, she would have required the pharmacists to provide more detailed information about patient visits.

Insurance data for some patients was incomplete, she added.

The study also did not include a control group that would have added validity to the results.

“One of the main challenges of doing this kind of research is to try to address as many of those things as possible that you can't control either in the analysis or in your description when you follow up.”

But, Cranor said, randomized control trials are not “real life.”


— Donna Young