A Clinical Pharmacist in Telehealth Team Care for Rural Patients with Diabetes

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The prevalence of diabetes in eastern North Carolina is higher than the state average (12.8% vs. 10.3%) [1]. The American Diabetes Association and the chronic care model recommend using a team-based approach to optimize care for patients with diabetes [2, 3]. However, primary care clinics in rural areas often do not have the patient demand or resources to have interprofessional teams on site. Telemedicine can bring interprofessional team-based care to patients in rural health care practices by utilizing remote electronic communication.

From 2013-2016, a diabetes telemedicine program funded by the Health Resources & Services Administration and Kate B. Reynolds Charitable Trust was offered in 13 sites in eastern North Carolina, including federally funded Community Health Clinics. A telemedicine team offered interdisciplinary care in the primary care provider's (PCP's) office without the patient needing to travel. The interdisciplinary team included a clinical pharmacist, dietician, behavioral therapist, and physician specializing in diabetes. The PCP referred the patient to 1 or more disciplines depending on the patient's needs. The program targeted underserved rural adults with uncontrolled type 2 diabetes. Patients were frequently challenged by comorbid distress, depression, behavioral/lifestyle challenges, finances, and limited local care. More than 70% of patients had incomes at or below 200% of the federal poverty level.

The interdisciplinary team included 3 part-time pharmacists. At each patient's first appointment the pharmacist took a medication history. Then he/she assessed adherence, knowledge of medications for diabetes, and injection technique. The pharmacist reviewed the patients' blood glucose logs to identify trends and provide feedback to the patients, and then helped them understand how taking their medications affects their individual glucose results.

After the assessment, the pharmacist provided education to fill in the gaps in each patient's understanding. Topics could include general diabetes education, self-management, and counseling on their specific medications. If patients had difficulty taking their medication or checking blood glucose as recommended, the pharmacist identified barriers and offered individualized strategies to improve adherence. The pharmacist recommended changes in prescription medications to the PCP. The most common recommendations were selection of a new medication and changes to the dose of insulin.

As part of the interdisciplinary team, the pharmacist checked on patient progress following lifestyle recommendations made by other members of the team. These recommendations were documented and members from other disciplines were alerted if there were concerns. In addition, the pharmacist identified problems that should be addressed by nutrition or behavioral medicine and suggested a referral from the PCP when needed.

Appointments for members of the interdisciplinary team were scheduled with the patient's PCP or another telehealth provider if possible. This made attending the

appointments easier for patients who had transportation issues. Appointments were made 2 or 3 at a time, though some patients had decreased attention and interest by their third appointment. Team members from 2 disciplines would sometimes see a patient together at the same visit. This was particularly helpful for patients on basal bolus insulin, who could meet with the pharmacist and dietician at the same time to discuss coordination of diet and insulin. During joint appointments each discipline member wrote a separate clinic note.

Over 2.5 years, the team completed 1,215 visits with 365 unique patients. The average patient completed 3-4 appointments with the interdisciplinary team. Patients had a statistically significant reduction in weight, A1c, and LDL within 12 months. Over half (52.4%) of patients indicated depressive symptoms on the PHQ-8 with 67% reporting a decrease in symptoms on retest. At baseline, 47.6% of patients reported at least mild anxiety with 61.5% reporting a decrease in symptoms on retest. Most (92%) of telehealth patients were "very satisfied" with their care and 83% agreed that telemedicine made it easier to get care.

To determine how this program compares to face-to-face care, a group of 190 rural patients receiving telemedicine were compared to 262 patients seen face-to-face at an academic center. The change in HbA1c from baseline to 6 months showed a non-inferior mean reduction of 0.8 in the face-to-face and 0.9 telehealth groups ($p = 0.65$). These findings indicate that improvement in glycemic control for the telemedicine patients was similar to that of patients at an academic medical center. This is consistent with a meta-analysis that showed telemedicine compared favorably to face-to-face care for patients with diabetes [4].

The interdisciplinary telemedicine diabetes team was both well received by patients and effective at improving patient outcomes comparable to an academic medical center. The pharmacist was an integral part of the team by assessing patient needs, providing education, and developing strategies to improve adherence. NCMJ

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