

# Pharmacists as Diabetes Educators and Diabetes Disease Managers

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**DIABETES IS A COMPLEX CONDITION** that requires patients to perform many self-care activities. Prescribers must manage diabetes patients with nine different categories of diabetes medications, nine combination oral medications, four different categories of insulin and three combination insulin products available on the US market. The prices of these medications and diabetes supplies costs the average person with diabetes approximately \$2,900 to \$3,100 per year in direct pharmacy costs services in Rhode Island, not including any medical services or medications for diabetes complications.<sup>1</sup> In addition to prescribing and managing medications, providers are responsible for the patient's overall quality measures such as hemoglobin A1C monitoring, foot screenings, cholesterol measurements, and ensuring their patients obtain their yearly dilated eye exam. Endocrinologists, diabetes education centers, and pharmacists are available throughout the state of Rhode Island and nationally to assist patients and primary care providers.

Currently, pharmacists completing their Doctor of Pharmacy degree and/or residency programs are highly trained providers with the necessary skills to co-manage and educate patients on a wide variety of diabetes issues. Pharmacists are successfully involved in many aspects of diabetes care such as outpatient clinics, community pharmacies, pharmacist-led group medical appointments at the Veterans Affairs Medical Center, patient-centered medical homes, surgical units, home telehealth monitoring, and diabetes education.<sup>2-5</sup> Locally, many pharmacists have obtained the **Rhode Island Certified Diabetes Outpatient Educator (CDOE)** certification as well as the nationally recognized **Certified Diabetes Educator (CDE)** certification.

## **CERTIFIED DIABETES OUTPATIENT EDUCATOR PHARMACIST VS. CERTIFIED DIABETES EDUCATOR PHARMACIST**

Nationally, the **National Certification Board of Diabetes Educators (NCBDE)** has been certifying diabetes educators since 1986. As of July 2011,

there is one CDE pharmacist in Rhode Island out of 51 total CDEs (2% of the CDE professionals) and 26 CDE pharmacists in Massachusetts out of 499 total CDEs (5.2% of the CDE professionals). **Certified Diabetes Educators (CDEs)** may be clinical psychologists, nurses, dietitians, pharmacists, occupational therapist, optometrists, physical therapists, physicians, or social workers. These practitioners must have two years of diabetes education experience prior to the CDE exam. In addition, they must be employed performing 1,000 hours of **diabetes self management education (DSME)** including educational interventions, personalized follow up plans, and documentation of these interactions. Four hundred of the 1,000 hours must be accrued within the year prior to application for the exam. This would mean that the practitioner must be employed eight hours per week performing DSME with patients. Most community pharmacists would be precluded from obtaining these hours due to their other generalized practice responsibilities. For example, a community pharmacist may speak to a patient for five to ten minutes regarding their diabetes medications and glucose monitoring, establish individual goals, and document the intervention. These types of interventions would need to be more than 20% of a 40-hour-work week of a community pharmacist. While this could happen, it is probably a rare occurrence. The time can be counted towards the 400 hours if the patient has set goals for follow up and the pharmacist has scheduled time to follow up with the patient on these issues. As of 2007, **American Diabetes Association (ADA)** recognized sites as single-discipline or multidiscipline sites and may employ one discipline to supply all of the education or a combination of any of the approved providers. This was a change from the past, in which, each ADA recognized site had to have a nurse and a dietitian with no mention of a pharmacist as part of the healthcare team. Now, each discipline could set up its own ADA recognized site, if desired. The ADA

recognized site allows diabetes education billing to Medicare-eligible enrollees, for individual and group education.

**Certified Diabetes Outpatient Educators (CDOE)** organization was established in Rhode Island in 1980.<sup>6</sup> It was created to help certify nurses, dietitians and pharmacists as diabetes educators. The CDOE organization provides continuing education to their educators as well as assistance in procedures such as billing for services and obtaining provider status for third party payers. The CDOE does not include an hourly requirement to test for competency. Rather, the CDOE requirement includes successful completion of five-weekly all-day workshops, a CDOE competency exam, teaching one session of the respective discipline, and/or 12 hours of volunteer diabetes education. In order to become a CDOE certified site, the practice must employ a nurse, dietitian, and a pharmacist.

## **PHARMACISTS AS DIABETES EDUCATORS AND DISEASE MANAGERS**

Understanding the importance of their medications, how they work, and what to expect from taking them is crucial to the patient's medication adherence. Adherence rates of studies, with adherence rates higher than the average adherence rate due to study related follow up, are approximately 71% ± 17% (range 34-97%).<sup>7</sup> Low adherence rates of all medications is often due to patient fear of adverse effects, not knowing why they were prescribed certain medications or dosages, high medication burden, cost of the medication, and not understanding the progression of the condition, such as type 2 diabetes. Pharmacists are utilized in many outpatient diabetes centers, such as Endocrine Treatment Centers, Inc. in Providence where I inform patients about their medications, explain side effects and expectations from the medications, and improve knowledge of the progression of their condition and the necessity of multiple medications or insulin as part of a multidisciplinary team of a nurse

practitioner, nurse, dietitian, physician, and pharmacist. In addition, I can educate the patient on other information such as exercise, monitoring, coping, managing sick days, nutrition, utilizing diabetes technology, problem solving, eating healthy, problem solving and goal setting. Frequently, if the patient understands why they were prescribed the medication and can see the results on their blood sugar readings or improve their quality of life by reducing hyperglycemia symptoms, then they become more successful with adherence with their medications and they become a reliable part of their treatment plan.

Commonly, non-dispensing pharmacists located within a medical practice, diabetes education, or at the **Veterans Administration Medical Center (VAMC)** are not expected to maintain the same patient load as primary care providers. Therefore, pharmacists have more time to discuss and counsel patients on their medications and review patient medications for appropriateness, pharmacokinetic and pharmacodynamics interactions as well as research the pharmacoeconomic impact of a medication choice for a patient. Nationally, many pharmacists at VAMC have a scope of practice that includes limited prescribing privileges. My colleagues and I are involved in many research-based pharmacist-led programs at the Providence VAMC, including a cardiac risk reduction clinic for patients with diabetes and cardiac risk factors, pharmacist-led group medical visits, pharmacist-led metabolic clinics, and pharmacist-led telehealth. These clinics have data to support their benefit.<sup>5,8-12</sup> For patients in these pharmacist clinics, we have shown that at six months, significant improvements were achieved for exercise, foot care, and goal attainment of hemoglobin A1C, LDL cholesterol and blood pressure, versus those in the control group who did not have pharmacist-led group medical visits.<sup>11</sup> In addition, we have shown that although coexisting mental health conditions attenuate treatment of diabetes, our pharmacist-led cardiovascular risk reduction clinics improve their United Kingdom Prospective Diabetes Study risk change and when discharged from the program (after achieving clinic goals), they have similar rates of decline for maintenance of systolic blood pressure

and hemoglobin A1C readings as compared to patients without mental health conditions.<sup>4,12</sup>

After patients meet with pharmacists to discuss their medications and diabetes, the time spent at follow up visits with their primary care provider and specialist can be used for specific questions and higher-level questioning for the provider. For physicians and primary care providers, the medication prescribing process can be burdensome. Pharmacists with CDE and CDOE credentials can work collaboratively with prescribers to improve the medication process and contribute to high quality disease state management for patients with diabetes who require complex medication regimens. Pharmacists can also help select lower cost alternatives for patients who are on fixed incomes and for those who want to save money on co-pays and other medication expenses. Pharmacists are familiar with third party formularies and can let patients know when lower-tiered medications may be available.

## CONCLUSION

Pharmacists who are certified as diabetes educators or disease managers can be a great resource for primary care providers and other allied health professionals. Locally and nationally, pharmacists have been an integral part of the diabetes management team. Since the prevalence of diabetes is expected to continue to rise over the next few decades, we need to utilize pharmacists. All patients should have the opportunity to sit down with a pharmacist at a physician practice or medical facility and learn about their medications and their condition.

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## Disclosure of Financial Interests

The author and/or their spouse/significant other have no financial interests to disclose.

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