

## Pharmacy Diabetes Management Program

by Tait D. Waege, RPh and Gwen L. Jaeger, 2020 PharmD Candidate

**H**oly Family Memorial Pharmacy is part of the Holy Family Memorial (HFM) Network, which provides care for Manitowoc County residents. The pharmacy is within the Harbor Town Campus location which also includes family medicine, walk-in, orthopaedics, rheumatology, rehabilitation, chiropractic health clinics as well as a wellness center. HFM uses Cerner's electronic medical record (EMR) software which is available to the pharmacists at HFM Pharmacy for reviewing medical records and messaging providers.

Patients often pick up refills for

basal insulin and deny any questions or concerns. However, when probed or asked open-ended questions, patients at HFM stated that their fasting blood sugars were consistently elevated; however, no dose adjustments or therapy changes were made until their next clinic appointment. Pharmacists also found that patients were nonadherent to their antihyperglycemic medications due to the high costs associated with novel medications. After assessment of patients' elevated A1c values in the EMR and high copays, pharmacists were further convinced that an intervention was necessary to improve patient care.

Including pharmacists in the primary care team is proven to improve patient

outcomes. A 2018 retrospective cohort study evaluated the effect of a pharmacist-managed diabetes program to reduce patient hemoglobin A1c (A1c) values < 8.0%.<sup>1</sup> Patients had their diabetes care managed by a pharmacist or received usual care. Patients in the pharmacist managed program were significantly more likely to achieve an A1c < 8% at 3 months (OR = 2.44, 95% CI = 1.93-3.10, p < 0.0001) and 6 months (OR = 1.32, 95% CI 1.08-1.61, p = 0.001). A 2015 systematic review evaluated the economic impact of pharmacist-managed services.<sup>2</sup> The results showed that pharmacist-managed services resulted in \$8-\$85,000 of medication and medical cost savings per patient per year, in 2014 US dollars. These studies demonstrate the potential of pharmacists impact on clinical outcomes and cost savings.

HFM pharmacists focused on reducing A1c values as the primary outcome following the 2020 American Diabetes Association (ADA) Standards of Care recommendations to assess glycemic management with A1c testing.<sup>3</sup> The ADA encourages that nonpregnant adults achieve an A1c < 7%, with less stringent goals appropriate for older adults or patients with complications.

### Program Overview

Pharmacists met with providers to explain the purpose of the program, received feedback on the process and made recommended changes. A referral form was created for providers to use as shown in Figure 1. Referrals in the Cerner messaging system were accepted as well. Pharmacists at HFM Pharmacy formed a Collaborative Practice Agreement (CPA) with prescribers at Holy Family Memorial to adjust basal insulin doses for patients with type 2 diabetes based on an approved protocol as detailed in Figure 1.

The Pharmacy Diabetes Management Program (DMP) formally started on October 1, 2018 with the goal of assisting patients in achieving their goal average fasting blood glucose. Patients with active

**FIGURE 1. Basal Insulin Pharmacy Collaborative Practice Agreement**

### Diabetes management: Referral for pharmacist medication review

There is no charge for this service.

Patient Name: \_\_\_\_\_

DOB: \_\_\_\_\_

#### What will the pharmacist do?

- Review guidelines for appropriate therapy and insurance coverage
- Review saving options available for medication
- Determine appropriate meter for the patient
- Educate patient on how to properly use the meter
- Create follow-ups to ensure medication effectiveness
- Provide free sharps container and disposal if needed
- Communicate regularly with HFM providers about medication dose adjustments

#### Blood Glucose Goals:

Average fasting blood glucose < \_\_\_\_\_

Monitoring Frequency: Daily    BID    TID    QID

Provider Signature: \_\_\_\_\_

Date: \_\_\_\_\_

basal insulin prescriptions and an A1c > 9% were enrolled in the program at no charge with patient consent. All program participants were offered free sharps containers and disposal of sharps as a program incentive. Patients were excluded from this intervention if already receiving endocrinology specialty follow-up.

Patients were initially contacted weekly to review their fasting blood sugars and their basal insulin was adjusted based upon the pre-approved protocol in Table 1. Prescribing providers were informed of any interactions and recommendations that were made for therapy changes via messaging in the Cerner EMR software. When goal average fasting blood glucose levels were reached, patient follow-up intervals were lengthened based upon the pharmacist's clinical judgement.

Patients were instructed on appropriate blood glucose monitoring technique and interpretation of results. They were also provided with education regarding diet and exercise with referral to certified diabetic educators, if needed. Through utilization of the CPA, pharmacists also wrote prescriptions for diabetic supplies.

The original intent of the program was to adjust basal insulin doses; however, the program has expanded as time progressed.

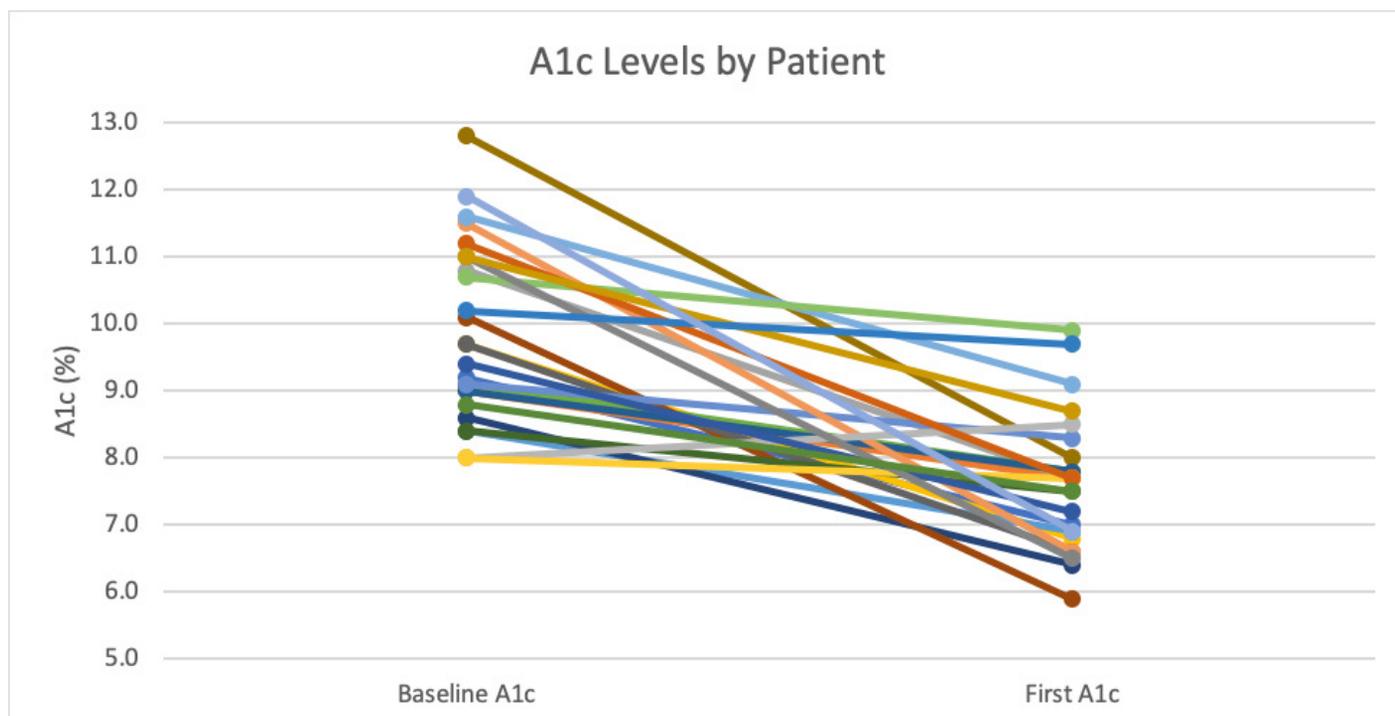
**TABLE 1. Basal Insulin Dosing Algorithm**

<i>Dosing algorithm for Basal insulin: Goal Fasting Blood Glucose (FBG) = 130 mg/dL</i>	
FBG < 70 mg/dL	Subtract 4 units/day
FBG 70-90 mg/dL	Subtract 2 units/day
FBG 90-130 mg/dL	No change
FBG 130-180 mg/dL	Increase 2 units/day
FBG 180-220 mg/dL	Increase 4 units/day
FBG > 220 mg/dL	Contact provider

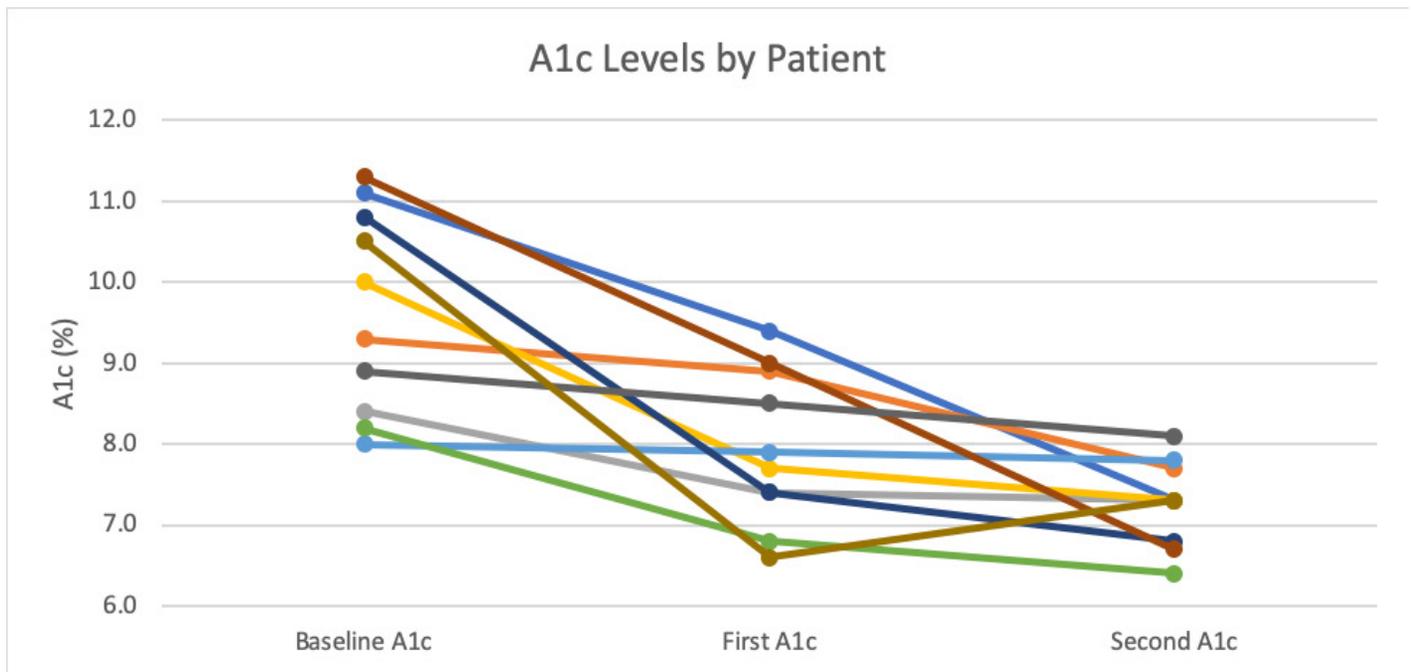
Recommendations are often made to providers to add or subtract drug therapy following review of current drug regimens, insurance coverage and shared decision-making with patients. Due to the cost of diabetic medications, an extensive review is done to find each patient the most cost-effective drug regimen. HFM takes advantage of manufacturer copay savings cards to help minimize patient's out-of-pocket expense, often resulting in a \$0 copay. Pharmacists also help patients in the Medicare Part D Donut Hole through enrollment in manufacturer assistance programs to reduce costs.

Patients on non-insulin antihyperglycemic agents are also referred and added to the DMP, though they do not fit the traditional workflow. These patients are enrolled in the Medication Synchronization program which helps reduce trips to the pharmacy and improves adherence. Pharmacists also call these patients monthly or quarterly to review fasting blood sugars, ensuring patients continue to have an appropriate medication regimen. During these calls, pharmacists provide disease state education and discuss lifestyle interventions, to empower patients in self-management.

**FIGURE 2. Reduction Between Baseline and First A1c Draw**



**FIGURE 3. A1c Reduction for Patients with at Least Two A1c Draws**



## Results

One year after starting the program, 73 patients were enrolled in the DMP. Twenty-five patients had an A1c drawn since starting the program resulting in a mean A1c reduction of 2.2% (sd 1.53%). Figure 2 demonstrates the A1c reduction from baseline to the first A1c taken as a member of the program, average follow up time 3.44 months (sd1.36 months).

Figure 3 details 10 patients with at least two A1c levels drawn since starting the program, showing an average A1c reduction of 2.4% (sd 1.42%) with an average follow up time of 8.40 months (sd 1.96 months). The data for patients with at least two A1c draws is not included in Figure 2.

To date, 7 patients have been removed from the program; 2 graduated with a better understanding and self-management, 3 moved out of state or changed to an out of network physician and 2 were unable to be contacted.

## Conclusions

While there is no charge from the program, HFM Pharmacy benefits from an increased prescription volume and improving outcomes for the health system. Many patients enrolled in DMP had significant out-of-pocket expenses and

were using high tier medications and/or not taking advantage of copay savings programs. It has been professionally rewarding to help patients control costs while helping get them to goal. Many enrolled patients have developed a strong bond with the pharmacy staff and have provided positive reviews of the program.

A survey was sent out to patients to seek feedback on the program. The average satisfaction was 4.6 out of 5, with 5 being very satisfied. Patient comments included:

- “Everyone has been very helpful. Being a new diabetic has been a tough adjustment, but it was easy with the help I received.”
- “The pharmacists are very respectful and knowledgeable. Thank you.”

One patient was especially excited with the impact of DMP on her A1c which decreased from 11.6% at baseline to 7.7%. She thanked the staff for helping her improve her numbers, but pharmacists reinforced that DMP gave her the tools and she did the work. The patient further explained that the accountability of knowing she will receive a call to monitor her numbers helps keep her on track.

Feedback from HFM providers is also positive. Dean Pollnow, MD, Chief Medical Officer at HFM explains, “This program has been a wonderful addition

for our patients and our clinicians. The success of the program is dependent on a pharmacist being able to work with the patients on getting the right medications and ensuring compliance. The clinicians welcome the pharmacists’ expertise regarding the correct medications and the costs associated with those medications.”

There are currently 84 patients enrolled in DMP and this number continues to grow. The pharmacy has been evaluating workflow efficiency in order to continue assisting patients. Increasing professional staff has also been discussed as DMP continues to expand.

The success of the program has encouraged pharmacists to create a smoking cessation program to coach patients who fill a new medication for smoking cessation. In this program pharmacists work with patients to establish a quit date and treatment goals, monitor side effects and provide other necessary tools for a successful quit attempt. Pharmacists are also in the process of working with stakeholders to develop a COPD management program to reduce the risk of hospital admissions related to COPD exacerbations.

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Tait Waeger is a clinical pharmacist at Holy Family Memorial Pharmacy in Manitowoc, WI.