

# Community Primary Care Diabetes Pathway

Maria Hooper<sup>1</sup> and Jennifer Pennock<sup>2</sup>

<sup>1</sup>Allegheny Health Network, Primary Care, Pittsburgh, PA

<sup>2</sup>Allegheny Health Network, Endocrinology, Pittsburgh, PA

Corresponding author: Maria Hooper, maria.wahrenberger@ahn.org

This series is published by the American Diabetes Association in collaboration with the American College of Physicians, Inc., and the National Diabetes Education Program. The American College of Physicians and the American College of Physicians logos are trademarks or registered trademarks of American College of Physicians, Inc., in the United States and shall not be used otherwise by any third party without the prior express written consent of the American College of Physicians, Inc. Likewise, products and materials that are not developed by or in partnership with the National Diabetes Education Program are prohibited from using the National Diabetes Education Program logo.

<https://doi.org/10.2337/cd18-0101>

©2019 by the American Diabetes Association. Readers may use this article as long as the work is properly cited, the use is educational and not for profit, and the work is not altered. See [www.diabetesjournals.org/content/license](http://www.diabetesjournals.org/content/license) for details.

**■ IN BRIEF** “Quality Improvement Success Stories” are published by the American Diabetes Association in collaboration with the American College of Physicians, Inc., and the National Diabetes Education Program. This series is intended to highlight best practices and strategies from programs and clinics that have successfully improved the quality of care for people with diabetes or related conditions. Each article in the series is reviewed and follows a standard format developed by the editors of *Clinical Diabetes*. The following article describes an initiative to provide more intensive diabetes care and support in a primary care setting and thereby improve patients’ glycemic, blood pressure, and lipid control, as well as BMI and psychosocial well-being.

## Describe your practice setting and location.

We are a primary care practice in suburban Pittsburgh, Pa., with four physicians and two physician assistants. We serve a diverse population that draws from both the city and the various surrounding areas.

## Describe the specific quality gap addressed through the initiative.

The goal of the Diabetes Pathway is to provide more intensive diabetes care and support in a primary care setting. A specific focus was to reduce A1C, and patients with an A1C >9% were targeted. We also sought to improve overall care and support for our patients with diabetes through better blood pressure control, statin adherence, BMI improvement, and attention to psychosocial needs related to their chronic disease.

## How did you identify this quality gap? In other words, where did you get your baseline data?

The Allegheny Health Network Diabetes Support Initiative for

Primary Care (AHN DSI) collects and distributes data on diabetes quality measures to primary care practices. The AHN DSI calculates the percentage of patients with an A1C at goal, along with other measures (1). The goal for patients’ A1C is based on the medications used in treatment, as a surrogate for complexity of disease. For example, for patients who are not taking medications for their diabetes (i.e., those who have diet-controlled diabetes), the goal A1C is <7%. For patients who are taking oral medications for their diabetes, the A1C goal is <7.5%. For patients prescribed injectable medications (i.e., a glucagon-like peptide 1 receptor agonist), the goal A1C is <8%, and for those taking insulin, the A1C goal is <9%.

Setting different A1C goals based on the complexity of the disease is a way to “even the playing field” so that doctors with more complicated patients are not penalized for having patients with higher A1C levels. The concept of basing an A1C goal on the type of treatment was described by the Joslin Diabetes Center in Boston, Mass., using its JCAT (Joslin Clinical

**TABLE 1. Average Data for Our Practice From Q4 2016 Through Q3 2017 (Before the Initiative) and for Q3 2018 (After the Initiative)**

	Patients With Diabetes, n (%)	Patients at A1C Goal, n (%)	Patients Taking a Statin, n (%)	Patients at Blood Pressure Goal, n (%)
Q4 2016	172 (100)	120 (70)	94 (55)	136 (79)
Q1 2017	160 (100)	106 (66)	93 (58)	122 (76)
Q2 2017	188 (100)	118 (63)	107 (57)	150 (80)
Q3 2017	155 (100)	120 (77)	96 (62)	110 (71)
Total for year before initiative	675 (100)	464 (69)	390 (58)	518 (77)
Q3 2018 (after initiative)	204 (100)	157 (77)	147 (72)	161 (79)

Analytic Tool) (2). In the JCAT, patients are grouped by complexity of disease based on the number of oral medications they are prescribed and whether they are prescribed insulin.

In addition, using our electronic health record system, we identified all of our patients with the diagnosis of diabetes and specifically looked at those with an A1C  $\geq 9\%$ . We also included patients with a new diagnosis of diabetes and those who providers identified as needing more education and support, regardless of their A1C.

#### **Summarize the initial data for your practice (before the improvement initiative).**

We initiated this quality improvement (QI) project in November 2017. We looked at our practice's average data from the AHN DSI diabetes quality measures throughout the year before the initiative. Data from the fourth quarter (Q4) of 2016 to the third quarter (Q3) of 2017 showed that 69% of the patients in our practice had an A1C at goal, as described above. In addition, during this time period, only 58% of our patients with diabetes were on a statin medication, and 77% had a blood pressure  $<140/90$  mmHg (Table 1).

The initial data for identified patients who agreed to enroll in our Diabetes Pathway were as follows. Fifty-eight patients completed the Pathway (i.e., attended an initial visit and a 12-week follow-up appointment). Their mean age was 61 years (range 34–92). These patients were primarily Caucasian (53 of 58, or

91%), and the rest were black or African American (5 of 58, or 9%). All of the patients had some type of health insurance; 28 had Medicare, 3 had Medicaid, and 27 had commercial insurance. All patients were English speaking. Mean A1C was 8.0% overall and 10.0% for the subset of patients who started with an A1C  $>9.0\%$ . Mean blood pressure was 135/80 mmHg, mean BMI was 36.1 kg/m<sup>2</sup>, and 75% were on statins.

#### **What was the timeframe from initiation of your QI initiative to its completion?**

We started the Diabetes Pathway QI initiative in November 2017. Patients were enrolled in the Pathway on a rolling basis. Each patient continued in the Diabetes Pathway for 3 months. We evaluated the data of patients at the start and end of their Pathway enrollment. Patients who were determined to need further follow-up were offered continued support.

#### **Describe your core QI team.**

#### **Who served as project leader, and why was this person selected? Who else served on the team?**

The project was led with a team approach. The team from our practice included the primary care practice lead physician who also serves as primary care consultant for the AHN DSI, a physician assistant, a practice nurse who specializes in diabetes care, a clinical pharmacist, and a behavioral health specialist. The other three physicians in the practice also participated with their patients. In addition, an en-

docrinologist who leads the AHN DSI provided direction and leadership. A dietitian/certified diabetes educator was provided to our practice 1 day/week to participate in our team care.

#### **Describe the structural changes you made to your practice through this initiative.**

We designated Friday afternoons for our Diabetes Pathway sessions. Each of the four physicians added four extra clinical hours per month to see their patients with the Pathway team. The physicians essentially volunteered those hours, although they did receive the revenue value units for the patients seen during those hours. The diabetes nurse specialist has been part of our primary care group for years. The pharmacist and behavioral health specialist are new to our practice as part of the health network's Primary Care Transformation Initiative. The salary of the dietitian/certified diabetes educator, who also works with other primary care practices in the network, was paid by the AHN DSI.

The diabetes nurse specialist called each patient in advance to determine specific needs and explain the program. Before the afternoon visits, the team huddled to discuss each patient and develop a planned approach to care. On the day of the visit, patients met individually with their physician, the dietitian, the clinical pharmacist, the behavioral health specialist, and the nurse.

Throughout the next 3 months, patients received phone calls every 1–2 weeks by one of the team members, based on their specific needs.

At the end of 12 weeks, repeat A1C tests were performed, and patients attended a follow-up visit with the physician assistant and all of the other nonphysician team members. At that visit, the patient either “graduated” back to regular primary care or was determined to need further intensive follow-up.

**Describe the most important changes you made to your process of care delivery.**

The most important change to our process was instituting the team approach and close follow-up. Being able to provide support with regard to dietary issues, behavioral health, and medication management and counseling, along with frequent patient phone calls for blood glucose management and encouragement, all within the primary care office where patients felt comfortable, not only facilitated better care for patients, but also provided enormous help for the physicians. The physicians’ role in these visits was similar to that in a standard visit and included intensifying treatment when needed, addressing other medical issues, and screening for diabetes complications. The pharmacist set A1C goals, provided insulin and glucose meter training, reviewed medication instructions, and assessed the need for a statin and immunizations. The dietitian reviewed current dietary patterns and provided dietary education. The behavioral health specialist assessed barriers to diabetes management and provided motivational support. The nurse specialist helped to plan and coordinate visits and follow-up.

**If you used the “Plan, Do, Study, Act” (PDSA) change model, provide details for one example in the following sections:**

- **Plan.** We had a structured schedule for each patient with each team member during the Pathway afternoon visits. Patients saw the physician first, then the dietitian, then the clinical pharmacist,

and finally the behavior health specialist.

- **Do.** We did this for 2 weeks.
- **Study.** We realized that the flow of the afternoon was not going well because each patient had different needs.
- **Act.** We determined during our huddle which team members would be most needed by each patient and adjusted our schedule and to allow for best use of time and resources while still having each patient see each team member. For example, some patients needed more time with the dietitian, whereas others required more psychosocial support from the behavioral health specialist.

**Summarize your final outcome data (at the end of the improvement initiative) and how it compared to your baseline data.**

The data from the AHN DSI for all patients with diabetes (aged 18–75 years) seen in our practice improved. Comparing our baseline data to the most current data available after the intervention (Q3 2018), the percentage of patients with A1C at goal before the intervention was 69% and after was 77%. The percentage of patients with diabetes who are taking a statin increased from 58% at baseline to 72% currently. Also, the percentage of patients with a blood pressure <140/90 mmHg increased from 77% at baseline to 79% currently (Table 1).

If we look at the 58 patients who completed the Pathway by attending the initial visit and the 3-month follow-up appointment, we see more dramatic results. At the end of 3 months, overall mean A1C dropped from 8.0 to 7.6%. For the subset of 13 patients with an initial A1C >9%, the mean A1C dropped from 10.0 to 8.0%. The mean blood pressure of the 58 patients as measured at the office on the first visit was 135/80 mmHg, and the mean blood pressure at the 3-month visit was 130/77 mmHg. In addition, the average BMI of these 58

patients dropped from 36.1 to 35.5 kg/m<sup>2</sup>, and the percentage of patients who were prescribed statins increased from 75 to 81%.

**What are your next steps?**

We plan to continue our Pathway afternoons and are planning to expand the initiative to also address prediabetes and obesity. We are considering instituting “exit criteria” to determine which patients can complete the 12-week Pathway and which need continued intensive follow-up, taking into consideration our original measures (A1C, blood pressure, statin use, BMI, and distress [as measured by the Diabetes Distress Scale]) and also patient engagement. We are also considering how to expand the initiative to the rest of the health network. So far, our practice is one of three in our network that have enrolled patients in this Diabetes Pathway. The other two practices had similarly impressive outcomes. The main barrier to implementing the Pathway in other practices is the salary of the pharmacist, behavioral health specialist, and dietitian. The network’s Primary Care Transformation Initiative is working to implement care teams in more of the primary care practices in the network. Once these teams are in place, then they can begin to use the Pathway, as well.

**What lessons did you learn through your QI process that you would like to share with others?**

A team approach using nonphysician resources with active participation of all members is crucial to success. Thoughtful input from each discipline and the ability to listen to and appreciate each perspective greatly enhanced the success of the program and the overall benefit to the patients. Structuring the initial and follow-up visits by focusing on patient-specific needs allowed for better care and better use of resources. Expanding care beyond the traditional office visit with a physician, while maintaining the primary care physician-patient

relationship, improved physician satisfaction and was generally very well accepted by patients.

---

## References

1. Pennock J, Klein B, Stevens M, Kraemer E. Development of the Diabetes Clinical Quality Reporting Tool to assess diabetes measures across primary care practices in a health network [abstract]. To be presented at the American Diabetes Association's 79th Scientific Sessions in San Francisco, Calif., 7–11 June 2019 (abstract no. A-6285)
2. Mitri J, Gabbay RA. Measuring the quality of diabetes care. *Am J Manag Care* 2016;22:SP147–SP148