



# Improving Dietary Recommendations for Patients With Type 2 Diabetes and Obesity in an Endocrinology Clinic

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“Quality Improvement Success Stories” are published by the American Diabetes Association in collaboration with the American College of Physicians 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 a project designed to improve the degree and quality of support for lifestyle change provided to patients with type 2 diabetes and obesity in the outpatient endocrinology clinic of a rural academic medical center.

## Describe your practice setting and location.

Dartmouth-Hitchcock Medical Center is a rural academic medical center located in Lebanon, NH, that provides primary and specialty care. The outpatient endocrinology team includes six endocrinologists, two advanced nurse practitioners, one dietitian and six endocrinology fellows who care for patients with general endocrine diseases, including diabetes.

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

Our ongoing quality improvement (QI) project focuses on improving support for lifestyle change (exercise and dietary counseling) provided to patients with type 2 diabetes and obesity. Guidelines published by the American Diabetes Association (ADA) recommend that, at their initial visit with a clinic, patients should be assessed for previous visits with a dietitian, as well as diabetes self-management skills (1). We chose to focus our efforts on this initial intake visit because this is when a patient-provider relationship is established, a care plan is developed, and resources are offered based on evidence-based guidelines.

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

Assessment of dietary counseling at the initial visit was identified as a gap in care after a self-reported survey showed that, in the previous 6 months, 50% of our providers reported assessing patients' history of dietitian visits only “sometimes” or “rarely.” Understanding patients' current knowledge and resources is key to determining their future needs with regard to dietary counseling or referral.

We confirmed this gap in the quality of care through a retrospective review of the records of patients who had obesity ( $BMI \geq 30 \text{ kg/m}^2$ ) who were seen for an initial visit (as opposed to follow-up visit) for type 2 diabetes. Collected data included whether providers documented whether patients had ever seen a dietitian in the past (yes or no) or made a referral to a dietitian (yes or no).

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

Before the QI initiative started, retrospective chart review showed that, at initial visits with patients ( $n = 151$ , mean BMI  $38 \text{ kg/m}^2$ , mean age 56.8 years), providers

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## QUALITY IMPROVEMENT SUCCESS STORIES

documented history of previous visits with a dietitian 15.9% of the time and made a referral to a dietitian 7.2% of the time (Supplementary Figures S1 and S2). It was also clear from providers' unstructured interviews that the opportunity for direct counseling was limited and that a team approach or referral was needed to support patients' lifestyle change efforts.

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

This ongoing QI project began in January 2019. Our analysis includes data through 1 December 2019.

### **Describe your core QI team. Who served as project leader, and why was this person selected? Who else served on the team?**

Our project leader is both a Dartmouth-Hitchcock Leadership Preventive Medicine Resident (DHLPMR) and an endocrinology fellow. DHLPMR is a 2-year program that trains clinicians from multiple specialties in QI methodology; residents complete a practicum as part of the program. The leader had dedicated time for QI as part of his training, knows the workflow of the endocrinology section, and has resources, including QI and clinical mentorship, and support for QI statistical analysis.

The team also includes a pediatrician and obesity medicine specialist at the Dartmouth-Hitchcock Weight & Wellness Center, who serves as the DHLPMR faculty coach; a staff endocrinologist with expertise in obesity medicine, who serves as the project advisor; the endocrinology section registered dietitian; and two additional endocrinology fellows. The QI project was waived by the Dartmouth-Hitchcock institutional review board and overseen by department leadership.

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

The proposed QI project was presented to the endocrinology providers at grand rounds (attended by the majority) in February 2019 (indicated by a red arrow on Supplementary Figure S1), and feedback was obtained and incorporated to ensure the engagement of all stakeholders. This presentation focused, as an initial intervention, on a review of current guideline recommendations (from ADA and the American Association of Clinical Endocrinologists/American College of Endocrinology) (1,2), evidence supporting the benefits of weight loss and lifestyle change in this patient population (e.g., a reduction in A1C), and the relevance of obtaining a complete and accurate baseline

lifestyle assessment, including history of previous visits to a dietitian (1) to guide patient care and provide appropriate resources and counseling. Furthermore, we described the population of interest, project aims, a data collection and analysis plan, proposed measures (i.e., outcome, process, and balance measures), and baseline data demonstrating the current quality gap. As a balancing measure, we elicited informal feedback from our dietitian regarding inappropriate referrals.

Starting in August 2019, a monthly QI report was sent by e-mail to all providers (indicated by a purple arrow on Supplementary Figure S1), which included the following sections: 1) improvements implemented to date, 2) updates and ongoing initiatives, and 3) updated proportion charts (P-charts) showing changes in key metrics in relation to improvement efforts. Every Thursday, the section holds a case conference at which we discuss on an as-needed basis the data sent out in the monthly e-mail message (e.g., interpretation of the P-charts).

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

We recognized that obtaining an accurate history of previous visits with a dietitian was a key element of patient intake, which prompted further discussion of the role of dietary counseling to support lifestyle change, as well as referral to additional resources. We modified a standardized outpatient office note template (mostly used by fellows) to include assessment of previous dietitian visits when evaluating patients with type 2 diabetes. We encouraged the providers who did not use this template to include this element in their custom templates.

Fellows piloted the template and provided feedback (indicated by a light blue arrow on Supplementary Figure S1). As in the baseline period, we continued to track, on a biweekly basis, the proportion of visits in which the provider documented whether the patient had seen a dietitian in the past or made a referral to a dietitian. In July 2019, these quality metrics were reported back to the endocrinology clinic providers, and additional feedback was incorporated. Most of the feedback was related to indicating which of the proposed measures for future reporting would be most meaningful to them.

### **Summarize your final outcome data (at the end of the improvement initiative) and how they compared with your baseline data.**

By 10 months after initiation of the QI effort, providers on average had documented patients' history of previous

visits with a dietitian 71.4% of the time, compared with 15.9% at baseline (Supplementary Figure S1) and had made referrals to a dietitian 34.2% of the time compared with 7.2% of the time at baseline (Supplementary Figure S2) during initial consult visits for patients with type 2 diabetes and obesity ( $n = 178$ ). An increase in the documentation rate of previous visits with a dietitian preceded the increase in referrals by 2 months. Furthermore, in a repeat survey conducted in December 2019, 20% of providers (compared with 50% at baseline) reported that, in the prior 6 months, they had assessed for previous dietitian visits only “sometimes” or “rarely.”

There are multiple plausible explanations for the increase in documentation of past dietitian visits and referrals to a dietitian. Including history of prior dietitian visits in the office note template could have had an impact on documentation practices and may have facilitated discussions with the patients regarding the benefits of seeing a dietitian. Ongoing educational and awareness activities may have led to greater awareness among providers of the importance of multidisciplinary care and of the important role dietary counseling plays in the management of patients with type 2 diabetes and obesity. Staffing and workflow changes could also have influenced the perceived value of and access to dietitian care. Although we had a dietitian during the baseline period, she left at the beginning of December 2018 (indicated by a purple arrow on Supplementary Figure S2), and a new dietitian did not join the department until the end of July 2019 (indicated by an orange arrow on Supplementary Figure S2). In the time between when the first dietitian left and the second one started working in the department, providers could still refer patients to an internal medicine dietitian. In addition, an advanced practice registered nurse who was trained by staff physicians started seeing patients with diabetes at the end of June 2019 (indicated by a yellow arrow on Supplementary Figure S2).

Our process and outcome data may have some limitations. During the baseline period, providers could have been asking about prior dietitian visits but not documenting this consistently in the patient chart. Hence, our initial focus was on better documentation to have accurate data from which to assess changes in practice and prompt next steps in care, such as provider counseling or referral to a dietitian. In addition, providers may refer patients to a dietitian at follow-up visits instead of at their initial visit. Although follow-up referrals may happen, such visits often occur ~3–6 months after the initial one and represent a missed opportunity. By using the initial template and placing a referral order, it is easy to assess on

subsequent visits whether a dietitian referral was offered or placed during the initial visit.

By focusing both on improving both care processes and documentation, we were able to show improvement in key quality process measures that have the potential to positively affect health outcomes for our patients with type 2 diabetes and obesity.

### **What are your next steps?**

We will explore other available resources and support for our patients. To improve data collection, we have considered implementing pre-visit questionnaires and involving medical assistants and nurses in the process. We will consider standardizing the processes of referral to the dietitian (e.g., such that patients referred to endocrinology for type 2 diabetes are offered a meeting with the dietitian when scheduling or that all are scheduled to meet a dietitian as part of our routine clinic process).

We will also work to ensure that a menu of other resources, such as referral to our Weight & Wellness Center, are offered to patients. The Weight & Wellness Center is a multidisciplinary clinic that provides care for patients with obesity, addresses related conditions, and promotes healthy lifestyles. For example, we can ask providers questions such as, “When should a patient be referred to a dietitian versus receiving more comprehensive and multidisciplinary options such as Dartmouth-Hitchcock’s Weight & Wellness Center?” Having providers and dietitians jointly answer questions such as these might generate agreement and help in the cocreation of clinical pathways.

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

Building a case for your QI project by highlighting its rationale and getting early feedback from providers who work daily in the microsystem to get buy-in is important. In our case, some of our initial interventions were aimed at creating awareness and engaging staff and providers in collaboration, and later at feeding back successes and taking next steps. A large part of our success has come from sharing the quality metrics with our providers throughout the QI project.

Although the ADA guidelines are generally followed, quality metrics are not shared with all of the providers. This project raises the possibility of starting other QI projects within the department and tracking other important diabetes metrics such as attaining A1C goals,

## QUALITY IMPROVEMENT SUCCESS STORIES

achieving blood pressure control, and performing screenings for nephropathy and retinopathy.

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