

# Using the American Academy of Family Physicians (AAFP) METRIC<sup>®</sup> to Improve Quality of Diabetes Care in a Family Medicine Clinic

SHERRY WEITZEN, MD, PHD, MELANIE BACA, MD, MICHELLE BARDACK, MD  
Department of Family and Community Medicine, University of New Mexico.

## Abstract

**BACKGROUND:** Diabetes is one of the most prevalent chronic diseases in the US and NM, requiring frequent office visits and laboratory tests to monitor and control the progression of disease. (ACO-Narrative Measures-Specs, 2013) Measures of quality patient care management include: Annual HbA1c, urine albumin, cholesterol, blood pressure, aspirin use, flu shot, foot exam, eye exam, smoking status (METRIC).

**PROJECT AIM:** 1) Assess clinic adherence to quality measures for diabetic patients before and after METRIC project. 2) Assess smoking cessation among diabetics after brief intervention

**METHODS:** 1) Review of tool, technical assistance from AAFP including enrollment, username, passwords. 2) Orientation for participants, written instructions, deadlines, and data collection templates. 3) 1st data collection and entry period; 4) intervention–1-800-QUIT-NOW over 8 week time period 5) Post-intervention data collection and entry. 6) Analysis and presentation. Diabetics were identified from EMR query based on the patients' problem list. Data on HbA1, microalbumin, lipids, blood pressure, recent flu vaccine, aspirin therapy, and smoking status were collected from lab results, clinical notes and the condition management summary page for diabetes.

## Results

Sixteen providers participated. The baseline sample included 180 patients while the follow up sample included 151 patients. The proportion of patients with core measures did not change over the 8 week time period. Prevalence of smokers among diabetics in baseline sample was 12%; 78% of smokers were offered the intervention. One of the smokers successfully quit smoking by the end of the study period.

## Discussion

**Positive outcomes:** After the project, providers were more aware of core measures for diabetic patients. Clinic staff learned about smoking cessation options (1-800-QUIT-NOW) available to patients. Our practice was able to take advantage of national professional organization resources. METRIC also permitted comparison to other practices that have entered data into the module.

**Challenges:** Providers found data collection from EMR (Powerchart) time consuming. Problem lists did not accurately reflect whether patients had diabetes or not. Sampling of diabetic patients were not representative of population of clinic patients. Also, patients included in baseline sample may or may not have been the same patients that were included in the follow up sample. Time interval between baseline and follow up may have been too short to appreciate any changes. Intervention (smoking cessation) targeted a condition that had low prevalence in the sample of diabetics.

**Conclusion:** Collecting data on patient diabetes measures improves awareness of comprehensive diabetes care guidelines. There was a high level of interest and participation among providers.

## Aim of Project

The aim of this project was to improve the care to diabetic patients in our clinic using the American Academy of Family Physicians METRIC tool. This tool provides a framework to collect data on core diabetes quality measures, both pre and post intervention, as well as a method to compare individual providers performance to peers, and single practices performance to the averages of multiple practices. In addition, this project was a structured way to get residents involved in a quality improvement project.

## Background of Project

Diabetes is one of the most prevalent chronic diseases in the US. In 2010, 25.8 million people in the US were diabetic, which is 8.3% of the population. The prevalence in New Mexico is similar to the national estimate. (CDC) Diabetes, when poorly controlled, can lead to serious complications including heart disease, stroke, kidney failure, blindness, nerve damage and infection. (National Diabetes Fact Sheet, 2011). In clinical practice, the goal is most often to control blood sugar and try to prevent or slow the progression of these serious complications.

The American Medical Association (AMA), Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the National Committee on Quality Assurance (NCQA) compiled a widely used core measurement set for the management of diabetes in adults in their 2001 Consensus Statement (ref). Over the years, aspirin use and smoking status were added to this list. Currently, The core measurements are the following:

1. Frequency of Hemoglobin A1c (HbA1c) testing (at least every 12 months)
2. HbA1c control (<7%, 7.0-7.9%, 8.0-8.9%, 9.0-9.9%, >=10%)
3. Frequency of microalbumin in urine testing (at least every 12 months)
4. Frequency of lipid panel testing (at least every 12 months)
5. Total Cholesterol, LDL, HDL and Triglyceride control
6. Frequency of blood pressure testing (at least every 12 months)
7. Blood Pressure Control
8. Frequency of eye exam (at least every 12 months)
9. Frequency of foot exam (at least every 12 months)
10. Frequency of flu vaccine (at least every 12 months)
11. Aspirin use
12. Smoking status

The American Academy of Family Physicians (AAFP) offers tools to family medicine physicians and practices to evaluate performance on the above measures (as well as core measures for other chronic conditions) through its METRIC program. Our clinic, the Family Practice Center, opted to use this tool to evaluate our clinic's performance with respect to these measures, and to test a smoking cessation intervention among diagnosed diabetics. The project was a collaboration between attending and resident physicians, and the clinic staff.

## Methods

This project was started in 2012 and was completed and evaluated by May 2013. Led by an attending physician (MB), an overview of the project was presented to the residents and 3 core faculty in the clinic. This overview included the purpose and goals of the project, orientation to the data entry interface on the AAFP website, instruction of data collection from the EMR, and timeline for completion of each stage.

Patients with diabetes who are seen at FPC were identified using the EMR problem list. In order to be included, patients had to have diabetes in their problem list on power chart. Each provider was assigned a non-overlapping list of 10 diabetic patients for which to collect data on core measurements. Providers mined several components of Power Chart to get these data including: clinical notes, condition management, and results review. Data on each patient was collected into a paper data collection tool that was similar to the data entry screen provided by METRIC. Each provider entered his/her own data into METRIC. The data was then compiled by the AAFP and reported to the project leader.

Smoking cessation, using 1-800-QUITNOW, was chosen as an intervention. This program offered nicotine replacement as well as one-on-one support for smoking cessation to participants free of charge. After initial baseline data was collected, providers were informed and educated about the intervention. Providers and their medical assistants (MA) and nurses offered the program to diabetic smokers seen in clinic over an 8-week period. Patients were given

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the information card, educated about the program, and in some instances, the MA or provider called and enrolled the patient into the program during the office visit.

After the 8 week intervention period, each participating provider was given another list of diabetic patients similarly identified using the Power Chart problem list. These patients were not necessarily the same patients included in the baseline sample. Fifteen of the original 16 participants collected core measurement data from Power Chart, and entered these data into METRIC. Baseline measures were compared to follow up, including proportion of smokers, as number of smokers who quit smoking during the study period.

## Results

Sixteen providers in one clinic initially participated in the project; 13 resident physicians, and 3 core faculty. One resident provider did not complete the follow up portion of the study. Data were collected at 2 time periods: baseline and 8 weeks later. At each time period, providers collected and entered data for 10 or more patients. At baseline, 180 patients were included in the analysis; follow up analysis included 151 patients. The differences may reflect the loss of one provider participant in the project as well as fewer patients entered by each provider at follow up.

The baseline and follow up data are displayed in Table 1. One hundred percent of patients had blood pressures documented both at baseline and follow up. In general there was very little change or slight decrease in the proportion of patients with HbA1c, lipid panels, urine microalbumin, foot, or eye exams documented. There was a small increase in the percent of diabetic patients receiving flu vaccinations and aspirin therapy in follow up period compared to baseline.

Among the sample, 12% were current smokers at the beginning of the study. Over the 8-week intervention period, 78% received smoking cessation counseling, as described above. At end of intervention, 1 person quit smoking. However,

among the patients included in the follow up sample, a greater proportion of them were smokers compared to the baseline sample.

## Discussion

AAFP provides tools for family medicine practices to conduct relatively simple quality improvement projects. Our practice used the METRIC to evaluate how well comprehensive diabetes measures were being done in our patient sample, and to implement an intervention to help diabetic smokers quit.

Overall, the providers stated that participating in the project made them more aware of the core diabetes measurements and were more likely to order tests, review results, do foot exams, and refer patients to ophthalmology. Participation also improved provider knowledge about smoking cessation options beyond nicotine replacement. The project also allowed providers and staff to work together collaboratively which improved communication even beyond the end of the study period. The practice also had the opportunity to compare its performance with the national average, although these data are not reported here. Finally, this was a cohesive and structured way for residents to get experience doing quality improvement projects.

There are several limitations of this project. Identification of diabetic patients in our clinic may not have been accurate due to incomplete or incorrect patient problem lists in Power Chart. The same patients were not necessarily included in both the baseline and follow up samples, make pre and post-intervention comparisons difficult. Data collection was cumbersome due to not having one location in Power Chart where all of the information is stored.

In terms of our intervention, we addressed an issue, smoking, that had relatively low prevalence in our population of interest. Only 12% of the baseline sample of diabetes were smokers. In addition, the time period for the intervention may not have been adequate enough to appreciate potential change in patients' behavior.

## Conclusions:

Practice based quality improvement projects such as ours can help providers become more aware of the important core measurements in diabetes management, and ultimately provide better quality of care for that population of patients. Providers and staff expressed high levels of satisfaction around participation in the project. FPC will continue to explore ways to improve quality of diabetes care, as well use METRIC as a platform for projects related to other medical conditions.

## References

Centers for Disease Control and Prevention. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, 2011.

Coordinated performance measurement for the management of adult diabetes: A consensus statement from the American Medical Association, the Joint Commission on Accreditation of Healthcare Organizations, and the National Committee for Quality Assurance. April 2001.

METRIC for practice groups: Improve performance as a team. [www.aafp.org/cme/cme-topic/all/metric/groups.html](http://www.aafp.org/cme/cme-topic/all/metric/groups.html).

METRIC module: Diabetes: An MC-FP part IV solution. [www.aafp.org/cme/cme-topic/all/metric-diabetes.html](http://www.aafp.org/cme/cme-topic/all/metric-diabetes.html).

**Table 1: Core Measurements at Baseline and follow up**

| Measure                                      | Baseline N=180<br>N(%) | Follow up N=151<br>N(%) |
|--|------------------------|-------------------------|
| HbA1c Exam in past 12 months                 | 168 (98)               | 147 (97)                |
| A1c at treatment goal (<7.0%) <sup>(1)</sup> | 60 (35)                | 52 (35)                 |
| A1c Distribution <sup>(1)</sup>              |                        |                         |
| <6%  | 9 (5)                  | 9 (6)                   |
| 6.0-6.9%                                     | 51 (30)                | 43 (29)                 |
| 7.0-7.9%                                     | 52 (31)                | 44 (30)                 |
| 8.0-8.9%                                     | 23 (14)                | 22 (15)                 |
| 9.0-9.9%                                     | 10 (6)                 | 4 (3)                   |
| >=10%  | 23 (14)                | 23 (15)                 |
| Microalbumin in past 12 months               | 124 (60)               | 107 (71)                |
| Lipid panel in past 12 months                | 164 (91)               | 128(87)                 |
| Blood pressure in past 12 months             | 180 (100)              | 151 (100)               |
| Eye exam in past 12 months                   | (62)                   | (63)                    |
| Foot exam in past 12 months                  | (61)                   | (61)                    |
| Flu vaccine in past 12 months                | (61)                   | (69)                    |
| Aspirin use                                  | (53)                   | (60)                    |
| Current smoker                               | (12)                   | (21)                    |

(1) percentage calculated out of those tested for HbA1c