

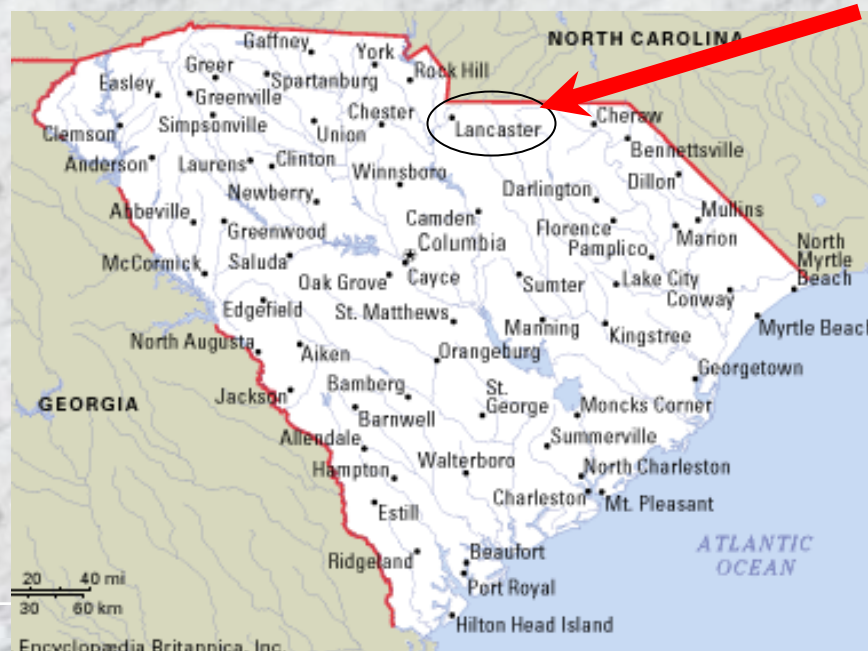
Improving Diabetes Education at Barnett Family Practice

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May 29 - June 20, 2001

Barnett Family Practice Lancaster, South Carolina

- James Holt, MD
- Nursing staff at Barnett Family Practice
- Catawba-Wateree AHEC



Lancaster's Diabetes Situation and The Problem at Hand

- As of 1998, there were 2,818 adults (18 and older) with a diagnosis of Diabetes in Lancaster county (6.4% of population).
- In 1997, due to diabetes, 15 residents of Lancaster county died (underlying cause) and 964 residents were hospitalized **COPC** (118 primary diagnosis and 846 diabetes-related diagnosis).

There were also 227 Emergency Room visits. (81 primary diagnosis and 146 diabetes related) - *SC DHEC, Fall 1999 handout.*

- **PROBLEM:** Patients at Barnett Family Practice still have **COPC** misunderstandings about their diabetes management despite repeated diabetes education sessions.

Aims

- *To improve diabetes education for patients at Barnett Family Practice.*

- **Short Term:**

1. Identify most frequent areas of misunderstanding that patients have concerning their diabetes care.
2. Inform providers (including nursing staff) at Barnett Family Practice where these areas of weakness lie.
3. Offer suggestions on how to strengthen these areas.

- **Long Term:**

1. To create a project format that may be easily followed in the future. This is for continued improvement of diabetes education at Barnett Family Practice.

- The practice supports this aim by the approval of, and willingness to participate in this project.

Measures

■ **Short Term:**

1. Administer survey to diabetic patients (Type I and II) at Barnett which will identify their knowledge of diabetes management from the patient's perspective.
- (Based on ADA guidelines, DCCT recommendations, and Diabetes Initiative of SC handbook)
2. Administer survey to providers at Barnett to identify their expectations of what patients will correctly answer.
3. Compare results of patient survey with the expectation of providers.

■ **Long Term:**

1. Survey diabetic patients again in the future after improvement suggestions have been made (for future students).
2. Compare responses of future survey with current survey to look for signs of improvement.

Possible Changes for Improvement

- Emphasize weak areas while nursing institutes diabetic education.
Driver: Would be simple after weak areas are identified.
Barrier: Not everyone learns during teaching sessions.
- Create reminder cards that patients could carry with them.
Driver: Patients would always have a reminder of what they learned in diabetic education.
Barrier: Idea suggested before, but never instituted.
- Distribute literature on weak areas during diabetic education
Driver: Patients can look over the information at home.
Barrier: Some patients can not read.
- Create simple visual aid for exam rooms.
Driver: Easier than literature to understand.
Patient would not have to keep up with it.
Barrier: Some patients can not read.

PDSA Cycle - **PLAN**

- By talking with nurses about diabetic education at Barnett, it became apparent that some patients do not understand their diabetes management.
- In discussing the project with Dr. Holt, he agreed that it is important to strengthen diabetic education in the practice.
- Weak areas in diabetic education must be identified before they can be strengthened.
- **Construct a survey that incorporates basic principles in diabetes management, is general enough to encompass all patients, and simple enough to be understood by patients of varying education levels. (Basically, *what patients should know!*)**
- Inquire providers about patient expectations on these basic principles.

COPC

PDSA Cycle - **DO**

- I created the patient and provider surveys as planned.
- Patient survey was approved by Dr. Holt for use.
- A packet containing patient surveys was placed at each nursing station (6 stations).
- The nursing staff distributed and collected surveys to diabetic patients as they were taken to an exam room.
- For patients who could not read, surveys were read to them by nurses.
- Surveys were collected for six days, at the end of each day.
- I distributed and collected provider surveys.

PDSA Cycle - STUDY (Patient Survey)

1. How often should you check your blood sugar? (*At least once per day*) - 30/39

2. Which food group will increase your blood sugar the fastest?
(Carbohydrates) - 23/39

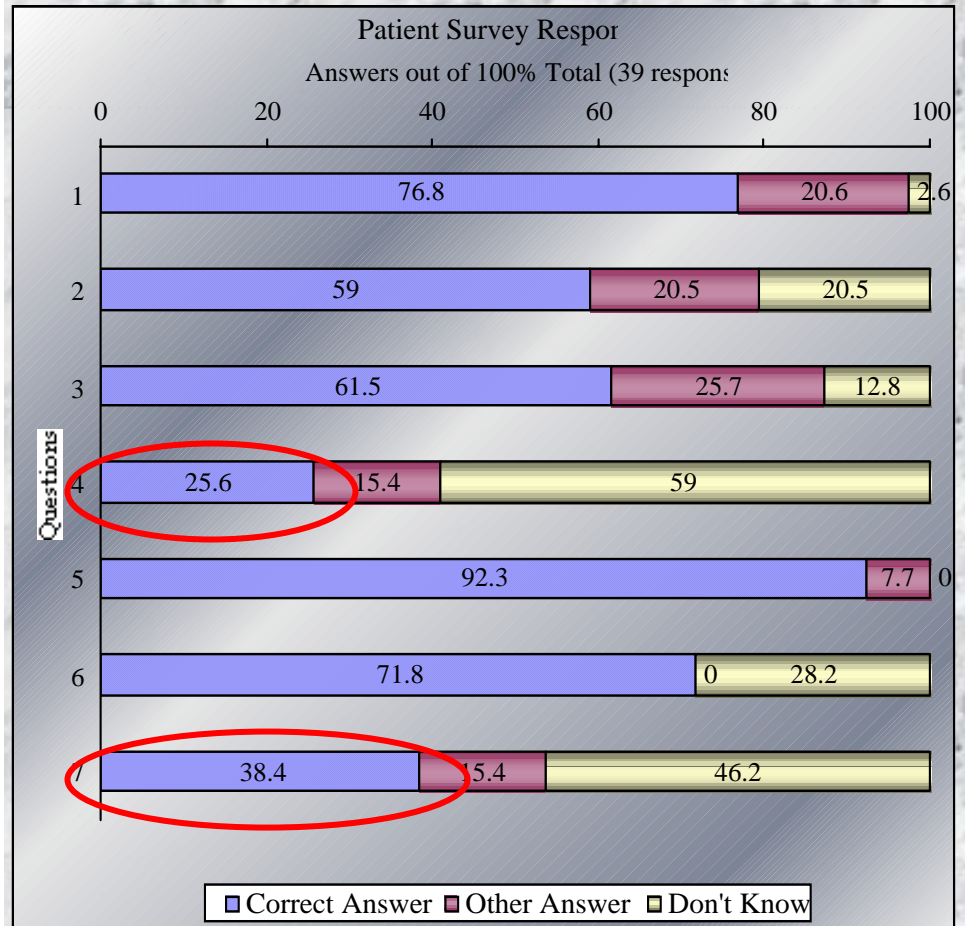
3. How often should you inspect your feet?
(*At least once per day*) - 24/39

4. What is the goal level for the Hemoglobin A1c (HgbA1c) blood test?
(*Less than 7%*) - 10/39

5. How often should your eyes be examined by your doctor/eye doctor?
(*Once a year*) - 36/39

6. How low should your total cholesterol be? (*Less than 200*) - 28/39

7. Tingling, numbness, burning pains, and decreased feeling in your feet is most likely a sign of? (*Nerve damage due to high blood sugar*) - 15/39



*39 responses. Questions are : **1.** Generalized for Type I and II diabetics, **2.** Created to apply to the majority of patients, **3.** Directed towards patient, not physician, responsibility.

PDSA Cycle - **STUDY** (Provider Survey)

1. How often should you check your blood sugar? Expectation Range: 25%-75%

2. Which food group will increase your blood sugar the fastest? Expectation Range: 20%-50%

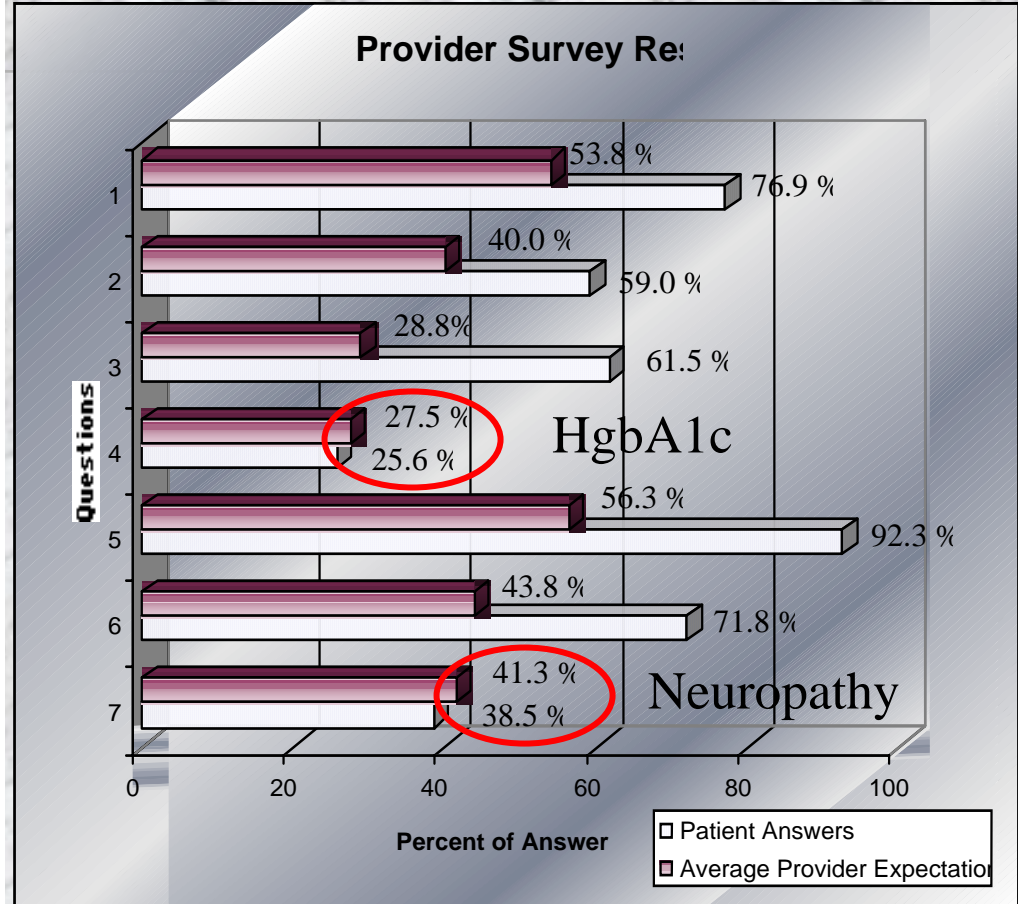
3. How often should you inspect your feet? Expectation Range: 10%-50%

4. What is the goal level for the Hemoglobin A1c (HgbA1c) blood test? Expectation Range: 20%-40%

5. How often should your eyes be examined by your doctor/eye doctor? Expectation Range: 30%-80%

6. How low should your total cholesterol be? Expectation Range: 10%-75%

7. Tingling, numbness, burning pains, and decreased feeling in your feet is most likely a sign of? Expectation Range: 25%-50%



* 4 responses out of 6 distributed (9 providers total).
 Expectation ranges on left. Bar Graph compares *Percentage of Patients answering correctly* (Speckled-lower bar) with *Provider Expectation (Average) of Patients answering correctly* (Purple-upper bar)

PDSA Cycle - STUDY (Results) **COPC**

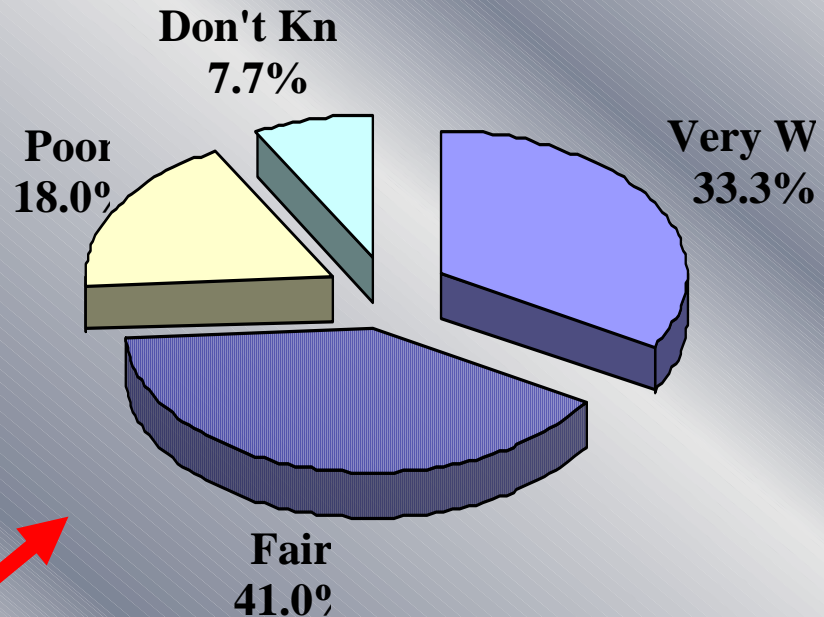
☞ The two areas identified as weakest by the patient survey were **Hemoglobin A1c testing** and **Diabetic Neuropathy**.

☞ The two areas with greatest difference between patient response and provider expectation were **Eye examination (Dilated)** and **Foot Inspection (Patient involvement)**.

☞ The two areas with least difference between patient response and provider expectation were **Hemoglobin A1c testing** and **Diabetic Neuropathy**.

Patients were also asked about their understanding of diabetes management. These results are seen here.

How well do you understand you (high blood sugars) and its treatment?



*39 responses. The above question was included only in the patient survey. Not included in provider survey.

PDSA Cycle - ACT

- Providers were presented with results of patient/provider surveys, identifying weak areas in diabetic education at Barnett Family Practice.
- Providers were presented with exam room visual aids for both *HgbA1c testing* and *Diabetic Neuropathy*.

Project Wrap-Up

- *Problem:* Weak areas in diabetic education at Barnett Family Practice.
- *Intervention:* Patient survey to identify weakness. Provider survey to examine expectations.
- *Who was involved:* Diabetic patients at Barnett (target audience from community), nursing staff, providers.
- *Data Collection:* Patient survey collected by nursing. Provider survey collected by myself.
- *Data Analysis:* Patient survey- (% correct and % other answer, also % of response as “Don’t Know”)
Provider survey - (expectation range and mean).
- *Results:* Weakest areas revolve around Diabetic Neuropathy and HgbA1c testing.
- *Further Action/Intervention:* Survey results to providers, visual aids for exam rooms.

Lessons Learned

- An adequate study of diabetes education improvement requires time to allow improvement suggestions to work, followed by reassessment.
- Creating a generalized survey that people can understand is easier said than done.
- Selection bias can be instituted into the survey.
- In order to get responses from provider surveys, you must watch them fill it out.
- Cooperation with a survey will deteriorate as days go by.