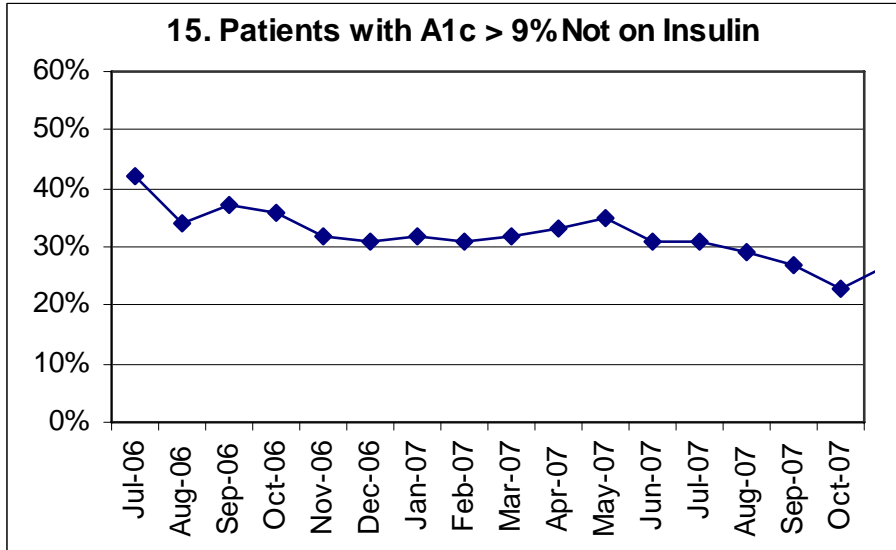


<h1 style="margin: 0;">PDSA worksheet</h1> <h2 style="margin: 0;">plan - do - study - act</h2>	team	Diabetes - Care Assistant
	change	Collect baseline data
	cycle #	1
	title	A1c uncontrolled, not on insulin

BACKGROUND:

Since July 2006, the Enhanced Care Diabetes Program has tracked patients with a hemoglobin A1c over 9% who are not on insulin therapy in order to assess how aggressively we are treating patients with uncontrolled diabetes. Our overall goal for this project is to implement a more consistent approach to initiation of insulin therapy in patients with multiple uncontrolled A1c results.



PLAN:

CURRENT CYCLE: Evaluate accuracy of the database and identify the most common reasons insulin therapy is not initiated in uncontrolled patients.

Specific questions to address:

1. How accurate is the database data on patients with uncontrolled A1c and not on insulin therapy?
2. What are the most common reasons that insulin therapy has not been initiated in uncontrolled patients?
3. What interventions can we make to ensure that patients with repeat uncontrolled A1c values initiate insulin therapy?

Predictions/Hypotheses (What do you think will happen when test is done?)

OVERALL: After our intervention, the number of patients with 2 consecutive A1c values greater than 9% on insulin therapy will increase.

THIS CYCLE: We will identify a high percentage of patients that have not initiated insulin therapy due to a history of non-compliance on oral medications, or loss to follow-up.

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Plan for change or test:

Who: Diabetes patients in the UNC Internal Medicine Clinic

What: Review patient records to ensure that patients with multiple uncontrolled A1c values initiate insulin therapy if indicated.

When: Begin intervention in the next two weeks (by November 21, 2007)

How: Identify the most common reasons why uncontrolled patients are not on insulin therapy. Develop an intervention to target these patients and increase the percentage of uncontrolled patients initiated on insulin therapy.

Where: ACC Internal Medicine Clinic

Plan for data collection:

Who: Angela Thompson, Diabetes CA

What: Review patient records in WebCIS to determine if insulin therapy is indicated, if the PCP or an Enhanced Care provider has discussed initiating insulin therapy, and if insulin has been prescribed. Update the database as needed. Note reasons for not initiating insulin therapy when indicated.

When: October 2007

How: Look up all relevant information in provider notes, medication lists, lab results, etc.

How long: Completed Oct 29, 2007

DO:

A query was run to identify 80 total patients with an A1c greater than 9% and not on insulin. Data was collected and recorded with minimal difficulty. Assessment was time-consuming, as it required review of multiple clinic visit notes and lab results to determine whether insulin had been discussed or initiated previously. Relevant details from clinic visits regarding patient history or provider's reasons for delaying initiation of insulin were noted.

STUDY:

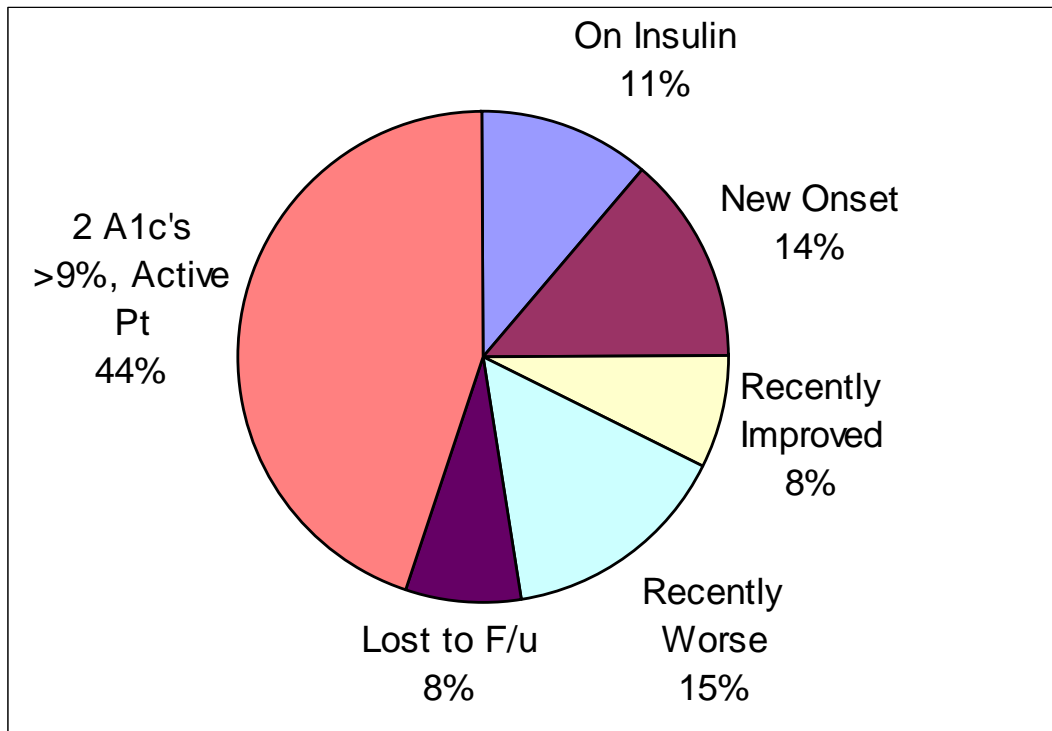
After chart reviews of all 80 patients identified, these patients were placed into 6 mutually exclusive categories: On insulin, New Onset, Recently Improved, Recently Worse, Lost to follow-up, and a target intervention group.

- **11% On insulin** are patients who are currently prescribed insulin. In these cases their database registry was not properly updated.
- **14% New onset** are those patients with an A1c greater than 9% at the time of diagnosis, with no A1c results since initiation of oral medication and lifestyle interventions.

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- **8% Recently improved** patients are those who had an A1c over 9% in the past but whose most recent A1c is less than 9%, indicating improved control on oral medications alone.
- **15% Recently worse** patients are those whose most recent A1c is above 9% but who had been previously controlled on oral medications alone.
- **8%** Patients were considered **lost to follow-up** if they had not been seen in clinic by either their PCP or an Enhanced Care provider within the past year.
- **44% Patients with two consecutive A1c values above 9% with a clinic visit in the past year** and not yet on insulin therapy are the group targeted for intervention in this cycle.

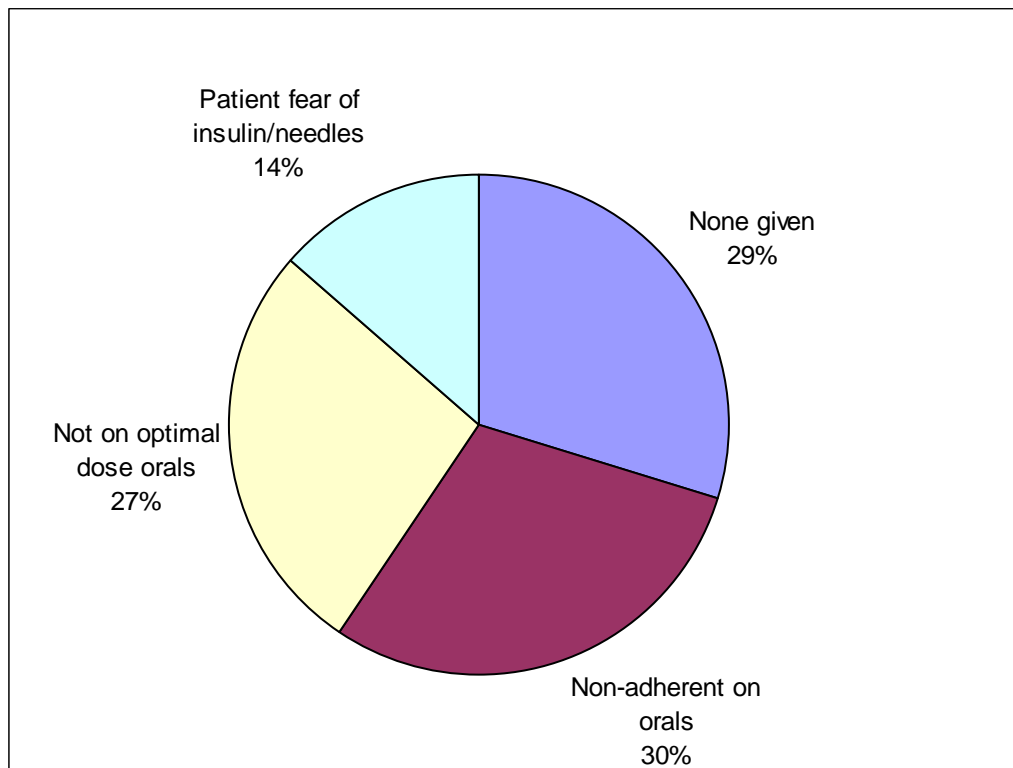
Figure 1: Results of Chart Review – Patient categories (n=80)



Of those 36 patients in the target group, the following reasons were documented for not initiating insulin: No reason, nonadherence on oral medications, not on optimal dose of oral medications, patient's fear of insulin or needles. See figure 2.

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Figure 2: Reasons for Delay of Insulin Therapy – Patient Categories (n=36)



Only 5 out of 36 patients (14%) were not currently on insulin due to the patient’s own fear or reluctance to start insulin therapy. This suggests that the remaining 86% of patients in this group would benefit from more aggressive intervention by providers.

ACT:

1. Based on assessment of the initial patient population, it is clear that data collection through **chart reviews is a valuable practice**. Less than 50% of the patients initially identified in the database meet the criteria established for intervention. Though it is a time-consuming process, it is worthwhile in order to narrow down the patient population and limit intervention to those who will benefit most.
2. Further interventions will **target patients with 2 consecutive A1cs and are active patients (seen in clinic in past year)**. This eliminates patients who are not good targets for intervention (ex. new diagnoses).

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What changes are needed for the next cycle?

1. We need to create and implement an intervention that will increase initiation of insulin therapy in those patients that are consistently uncontrolled. We will notify each patient's PCP that he or she has 2 consecutive uncontrolled A1c values and that we plan to intervene. A letter signed by the PCP notifying the patient of their 2 most recent A1c values and the possible health risks of uncontrolled blood sugar will be mailed to the patient. If the patient has no upcoming visits, we will attempt to contact that patient to schedule a visit with Carrie Palmer, ANP or Robb Malone, PharmD. If the patient has an upcoming visit scheduled, we will remind them of this appointment, and a care assistant will see them on that day.
2. Based on the findings of the initial intervention, this **chart review process should be repeated periodically** in order to ensure that uncontrolled patients are identified and targeted.