sentara nurse

Incorporating Learning into Practice
Telephone Insulin Program (TIP) Getting Results

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BACKGROUND

Insulin is a difficult and expensive medication to acquire and purchase for individuals with limited financial and personal resources.

Sentara Northern Virginia Medical Center's (SNVMC) community outreach program, The Family Health Connection, provides high quality accessible health care to people who do not have health insurance, are unemployed or underemployed, and are at or below 200% of the poverty level. The mobile clinics go to different locations each day of the week in the areas of Woodbridge, Dumfries and Triangle. Many patients walk or take a bus to a site as they do not own a car.

Type 2 Diabetics, on insulin with elevated glycosylated hemoglobin (HgbA1c) should come to the clinic every three months for a general diabetic exam and insulin adjustment if needed. However, because these patients have many other ailments that they perceive as more important and because of time constraints, in-depth discussion regarding diabetes is sometimes forfeited.

HgbA1c is a key indicator in the control of diabetes because it is an average of blood sugars over the prior 3 months.. Patients must qualify annually to participate in the Patient Assistance Program (PAP). Medications obtained through PAP, including the initial insulin shipment, may take up to two months to arrive, with refills taking 2-4 weeks. Many times patients will delay requesting a refill or delay in filling out the application, resulting in the patient being without insulin for an indefinite period of time and hence losing control of their diabetes.

PROBLEM

Language barriers and limited income, transportation, education, and health knowledge, are some of the reasons vulnerable populations encounter difficulty or fail to manage chronic health conditions such as diabetes. This project explores the impact of the Telephone Insulin Program (TIP) on patient compliance and outcomes of at-risk populations living in the local communities of Woodbridge, Dumfries and Triangle and served by SNVMC's mobile health clinics.

TARGET POPULATION

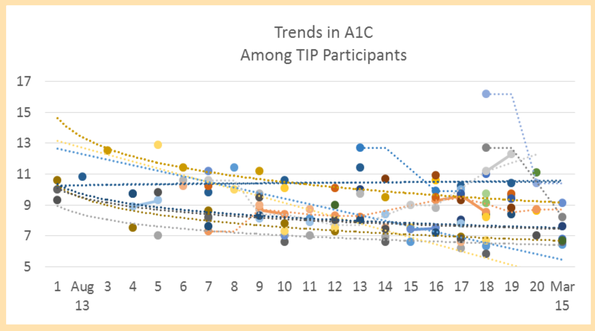
- Mobile health clinic Type 2 diabetic patients with HgbA1c greater than nine and using insulin
- Sample: Total: 45; Currently: 30
- Time: August 2013- ongoing

EXPECTED OUTCOMES

- Increased access to healthcare services designed to assist and improve vulnerable population self-care management of their diabetic conditions.
- Prevent long-term effects of uncontrolled diabetes such as diabetic retinopathy and nephropathy, and
- Ensure patients have sufficient medication, especially insulin.

IMPLEMENTATION

- Type 2 diabetic patients with HgbA1c's greater than nine and are on insulin therapy are offered the opportunity to participate in the Telephone Insulin Program (TIP).
- The TIP Nurse Practitioner (NP) telephones patients on a weekly basis to collect information and give the patients guidance on their diabetic
- Patients are required to check their blood sugars with their glucometers and write down their numbers and be available during a specific time frame. Patients are questioned about any hyperglycemic or hypoglycemic events, their diets, activity level, test strip quantities, if they have and are using their medications, and how they are feeling about the new adjustment of medication.
- The TIP NP will then calculate the average of their blood sugars for the week and adjust the insulin accordingly. Patients are first asked to check fasting blood sugars. Many times a two-hour post-prandial blood sugar is requested after the largest meal eaten. Blood sugar level goals are set by the TIP NP according to the ADA guidelines. The NP reviews with the patient issues, such as "what is a carbohydrate", how activity can lower blood sugar, how insulin works and why the patient should follow guidelines regarding when and how to take insulin.
- The NP evaluates medication quantities and may order more, if needed. Laboratory tests, which are done every 3 months, are ordered and mailed to the patient if they are due. Support and encouragement are a large part of the conversation.



The figure seen above shows HgbA1c levels from August 2013 through March 2015. Trend lines are superimposed on the HgbA1c levels using either regression or moving average methods. These lines show an almost overwhelming downward trend among our patients' HgbA1c levels since the beginning of the program.

RESULTS

The TIP program was started with six patients in August 2013. As the program evolves, increased patient referral have been made to the program. The TIP program has had up to 45 patients participate. Fifteen have dropped out due to reasons including obtaining insurance, death unrelated to diabetes and lack of participation.

At present, there are 30 people actively participating in the program with the following significant results:

- Decline in HgbA1c level of current cohort: 26/30 or 86%
- Average decline in HgbA1c level of current cohort with improved HgbA1c: 22%
- Average decline in HgbA1c level of first year's cohort with improved HgbA1c: 16%

CONCLUSION

TIP is a promising community-based program designed for a vulnerable population. Diabetes management requires access to services, awareness, education, and support, and the personal desire and self-confidence to make informed decisions about care. As HbgA1c levels of many participants continue the downward trend seen since the inception of the program, participants have sustained healthy behaviors through collaborative relationships that have grown out of a new health partnership between health care providers, their teams, and patients and their families.

TESTIMONIAL

One new TIP participant has been an insulin dependent type 2 diabetic for many, many years. He is the patient that comes to his appointments every 3 months, checks his blood sugars, and gets and uses his insulin on a regular basis. He's been to diabetic education and has seen the endocrinologist at the University of Virginia and he has never been able to get his HgbA1c less than 10.4 because of his severe insulin resistance. This patient joined the TIP program in November 2014 and with active aggressive treatment with his insulin, his A1c has dropped to 9.6. His total daily dose of insulin is over 500 units a day and his blood sugars, although not yet at the ADA guideline goal, are significantly better. He will also be starting on a different type of insulin, which is very concentrated, and be using a lower volume of insulin thereby increasing insulin sensitivity i.e. more effective. Through this program the NP has been able to help bring down blood sugars, identify the severity of insulin resistance, actively seek and obtain new and more effective insulin and monitor progress on a weekly basis.

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