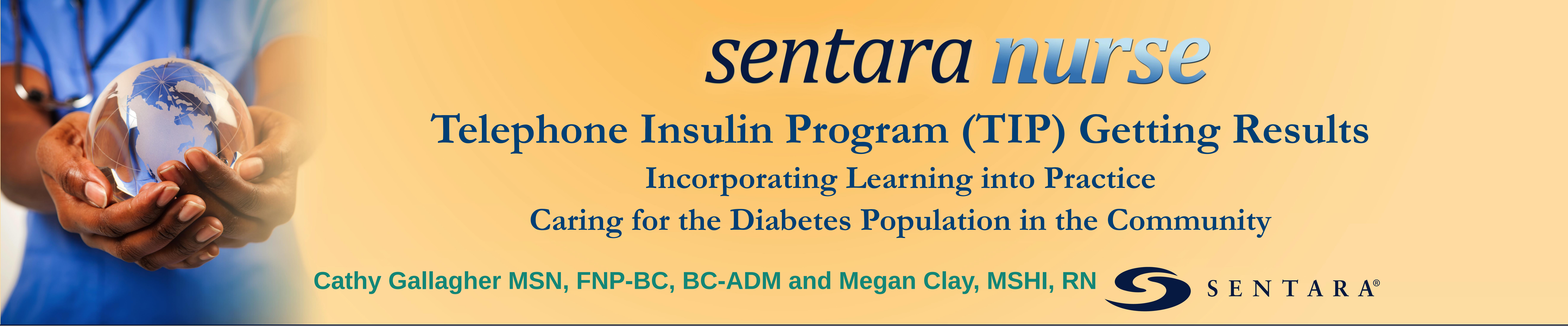




Telephone Insulin Program (TIP) Getting Results

Incorporating Learning into Practice

Caring for the Diabetes Population in the Community

Cathy Gallagher MSN, FNP-BC, BC-ADM and Megan Clay, MSHI, RN



BACKGROUND

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. SNVMC mobile clinics travel to different locations each day of the week in the areas of Woodbridge, Dumfries and Triangle. Most patients seen at these locations walk or take a bus as they do not own a car.

	A1c (%)	Fasting Plasma Glucose mg/dl mmol/l	Oral Glucose Tolerance Test mg/dl mmol/l
Diabetes	6.5 & above	126 & above 7 & above	200 & above 11.1 & above
Pre Diabetes	5.7 to 6.4	100 to 126 5.56 to 7	140 to 199 7.77 to 11
Healthy	Below 5.6	99 & below 5.5	139 & below 7.72 & below



The Hemoglobin A1C (HbA1c), providing information of a person's average levels of blood glucose, over the past three months, is the best reflection of a person's overall diabetes management. An HbA1c level of 6.5 percent or higher indicates a diagnoses of diabetes. Patients with an A1c level greater than 9 are invited to participate in the Telephone Insulin Program (TIP) as well as encouraged to visit the clinic every three months for a general diabetic exam and medication adjustment if needed. The initiative's goal is to maintain the participant's HbA1c between 6.5 and 7.

The Nurse Practitioner's weekly calls to TIP participants uncover numerous health related factors affecting diabetic management. Close monitoring and adjusting the insulin dose have resulted in lower blood glucose and prevention of further complications from long term elevated blood glucose levels.

- Diabetic control becomes less of a priority when the individual perceives diabetes to be less critical when compared to their other illnesses. In addition, there are a multitude of reasons and barriers for elevated blood sugars namely:
- inability to obtain medication
 - lack of understanding regarding how different types of insulin work
 - improper use of self-injection technique
 - inaccurate method for monitoring blood sugar levels
 - errors translating numeric results
 - unhealthy dietary choices and adequate exercise

PROJECT

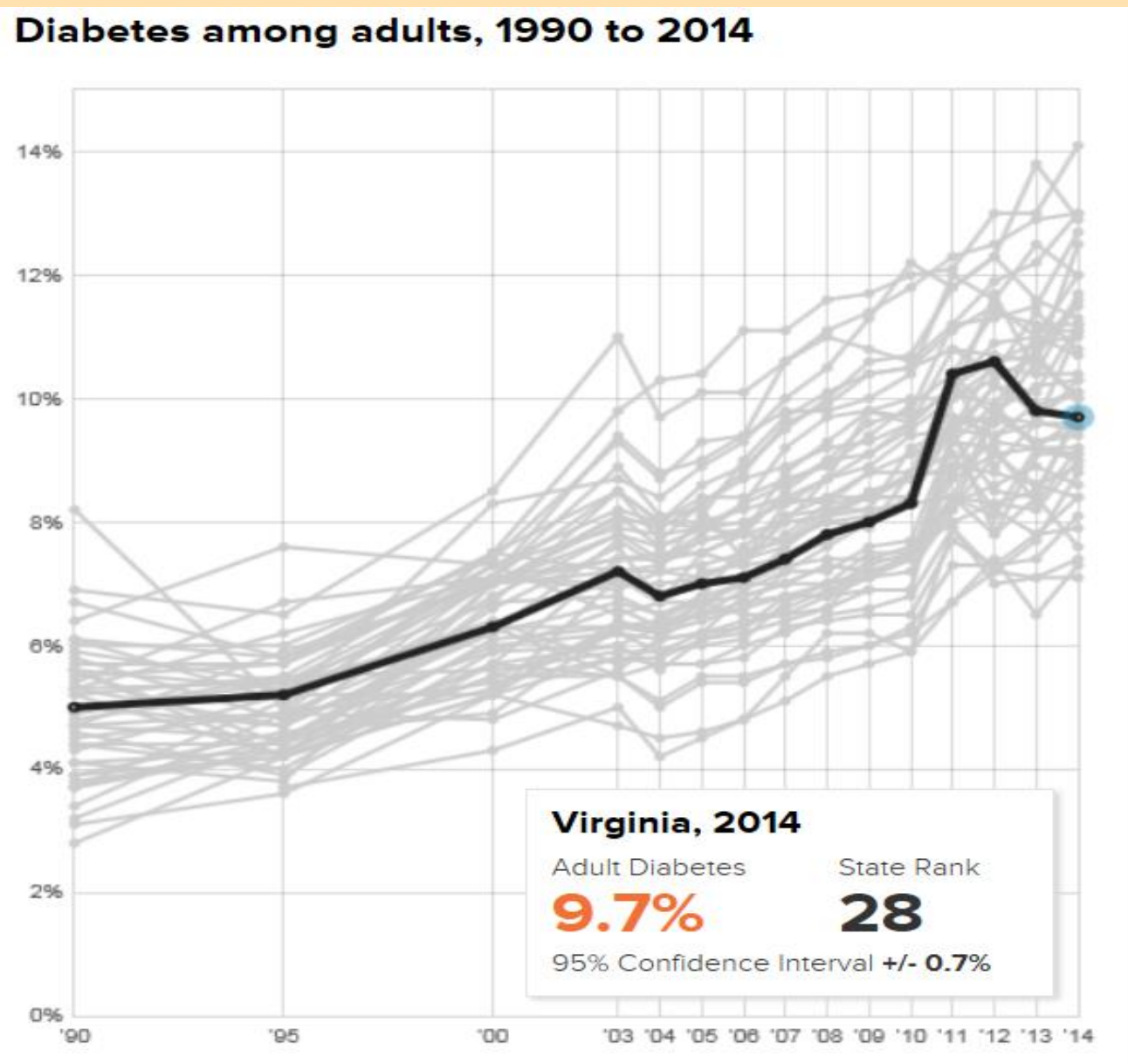
Language barriers and limited income, transportation, education, and health literacy are some of the reasons vulnerable populations encounter difficulty or fail to manage chronic health conditions such as diabetes. This project will explore the impact of the Telephone Insulin Program (TIP) on patient 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

- SNVMC mobile clinic patients
- Insulin-dependent Type 2 diabetic
- HgbA1c greater than 9
- With limited or no financial resources

DURATION

- Duration of Project: August 2013- present



Virginia BRFSS Online Reporting System Diabetes by Demographics Virginia 2016		Weighted Percent (%)
*Virginia	*State Total	9.8
Income	\$15,000 or less	16.4
	\$15,000 to less than \$25,000	14.5
	\$25,000 to less than \$35,000	11.5
	\$35,000 to less than \$50,000	10.8
	\$50,000 or more	6.4

EXPECTED OUTCOMES

- Increased access to healthcare services designed to assist and improve vulnerable population self-care management of their diabetic condition.
- Reduced incidence of long-term effects of uncontrolled diabetes such as diabetic retinopathy, blindness and nephropathy, cardiovascular disease, kidney disease and stroke.
- Increased patient access to supplies and medication to manage self-care.

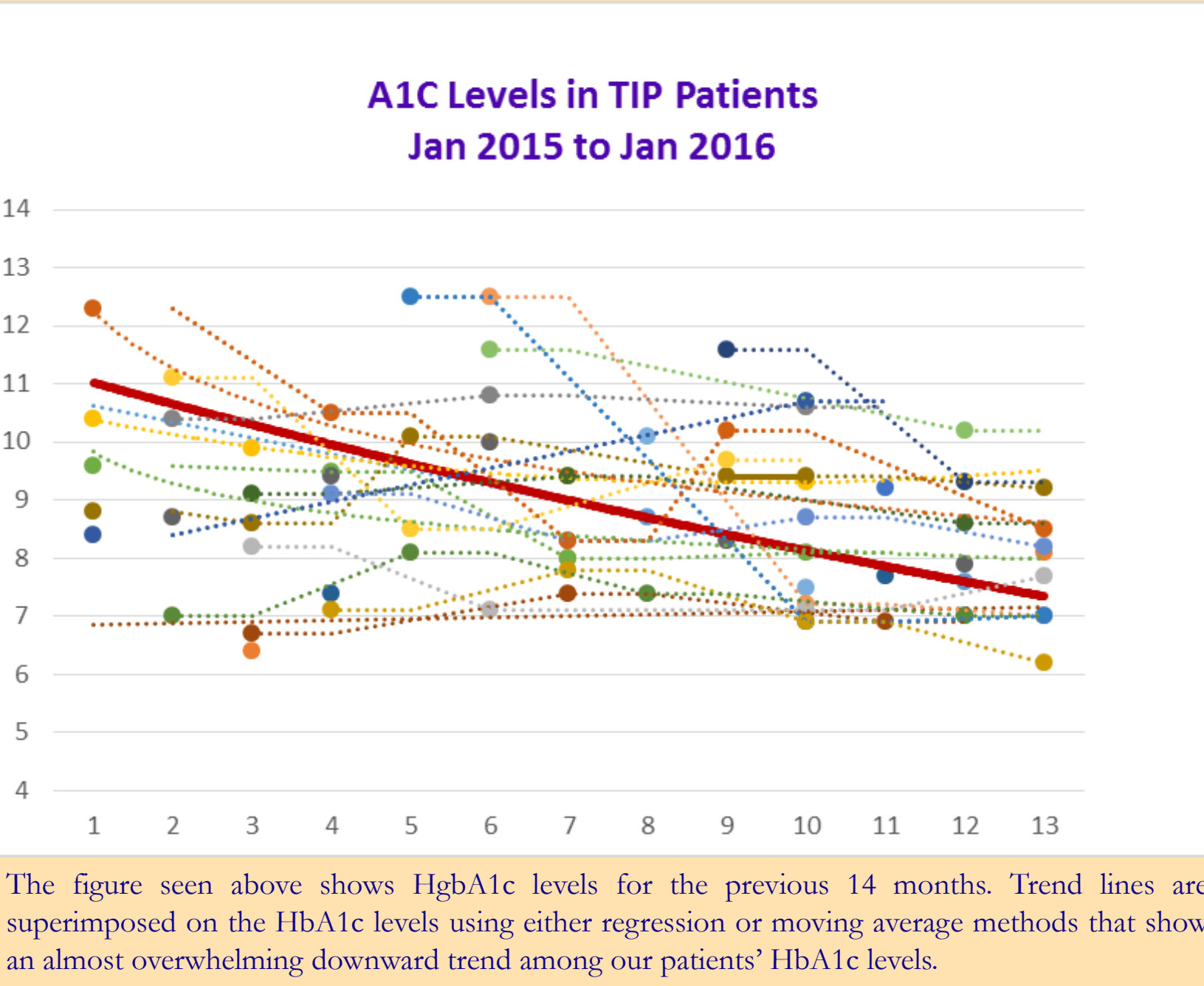
METHODS

- Type 2 insulin-dependent diabetics with HbA1c's greater than 9 are offered the opportunity to participate in the Telephone Insulin Program (TIP).
- The TIP Nurse Practitioner (TIP NP) telephones patients on a weekly basis to collect information and provide guidance in their self-care diabetic management.
- Patients are required to check their blood sugar with a glucometer and record results.
- Patients are asked to check fasting blood sugar as well as a two-hour post-prandial blood sugar after the largest meal eaten. Blood sugar level goals are set by the TIP NP according to the ADA guidelines.
- Patients are interviewed by phone about hyperglycemic or hypoglycemic events, their diets, activity level, test strip quantities, access and correct use of their medications, and how they are feeling about the new adjustment of medication.
- The TIP NP calculates the blood sugar average for the week and adjusts the insulin accordingly.
- The TIP NP evaluates medication quantities and may order more, if needed. Laboratory tests are ordered every three months and mailed to the patient when due. Support and encouragement is an integral component of this initiative.
- The TIP NP reviews patient issues, such as “what is a carbohydrate”, the role of activity in lowering blood sugar, how insulin works, and why patients should follow guidelines regarding when and how to take insulin.



RESULTS

- Decline in HbA1c level of current cohort: 26/30 or 86%, with average decline in HbA1c level of current cohort with improved HbA1c: 22%. Average decline in HbA1c level of first year's cohort with improved HbA1c: 16%
- With downward trend of HbA1c levels, participants continue to sustain healthy behaviors through collaborative relationships between health care providers, their teams, and the patients and their families.



TIP is a promising community-based program designed to serve a vulnerable population. Diabetes management requires access to services, personal awareness and understanding, meaningful education, emotional support and encouragement, and the personal desire and self-confidence to make informed decisions about care. As TIP participants experience success with lower HbA1c levels, they are able to embrace and sustain healthy behaviors with the support of their families and health care providers.

TESTIMONIAL

A patient with previous diabetic education and endocrinologist consultation at the University of Virginia enrolled in the TIP Program in November 2014 due to a consistently elevated HbA1C level of 10.4 related to his severe insulin resistance and lenient medical management.

The TIP Nurse Practitioner (NP) telephoned the participant on a weekly basis to collect information and offer meticulous guidance This close supervision and attention to detail paid off and decreased the patient's HbA1c to 9.6 by March 2015. This participant started on a highly concentrated form of insulin and has further reduced his HbA1c to 8.2! This would not have been possible “if he had not been enrolled in and followed by the TIP Program”.

CONTACT INFORMATION

Megan Clay, MSHI, RN Director Partnership Development
Sentara Northern Virginia Medical Center
MMCLAY@sentara.com
Cathy Gallagher MSN, FNP-BC, BC-ADM, Mobile Clinic
Sentara Northern Virginia Medical Center
CAGALLAG@sentara.com

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