

# An Evaluation of Communication Methods for Community Outreach in Patients with Diabetes

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## Background

Uncontrolled type II diabetes mellitus is a leading cause of death due to associated complications. Management involves checking HbA1c levels routinely. This study evaluated the interventional efficacy of text messages and telephone calls to improve patient follow-up with primary care providers among Tucson El Rio patients that have not had a measured HbA1c within the last 6 months.

## Objectives

The primary objective of this study is to evaluate the efficacy of two communication modalities in getting patients to schedule appointments.

## Methods

The efficacy of two methods of patient communication (texting and phone calls) were compared between two randomized cohorts to determine best practices for patient retention and scheduling appointments.

- Participants were El Rio patients who had a previous type II diabetes mellitus diagnosis, a previous HbA1c of over 9%, and had not received care within the El Rio Health system over the last six months.
- Participants received an initial text message and were then randomly placed into two cohorts to receive either a text message or phone call in order to schedule an appointment.
- Communication through phone and text messages were normalized between experimenters. Data collected were nominal and included whether a patient met different milestones in the appointment scheduling process. Chi-squared analysis was performed.

## Results

From a total population of 416 patients with an HbA1c above 9.0% and who had not seen an El Rio Health Provider in the last 6 months, there were a total of 156 patients who were contacted. Patient responses were categorized as either primarily voice-based or text-based. Patients who responded to the initial message were categorized as a positive response.

Total Response Rate = 21.8% (34)  
Voice-Communication Response Rate = 20.5% (16)  
Text-Based Communication Response Rate = 23.1% (18)

Patients given an appointment for diabetic follow-up = 6.4% (10)  
Patients given an appointment who were contacted with voice = 37.5% (6)  
Patients given an appointment who were contacted with text = 22.2% (4)

Patients that were lost to follow-up or were found to be no longer a part of the El Rio Health network was 16.0% (25) of the total study population. Patients in the study who opted out of all forms of communication comprised 7.9% (11) of the total study population.

The initial response rates for voice and text-based communications were found to be similar. The study found that appointments were made at a larger rate among patients who were contacted via voice-based communication.

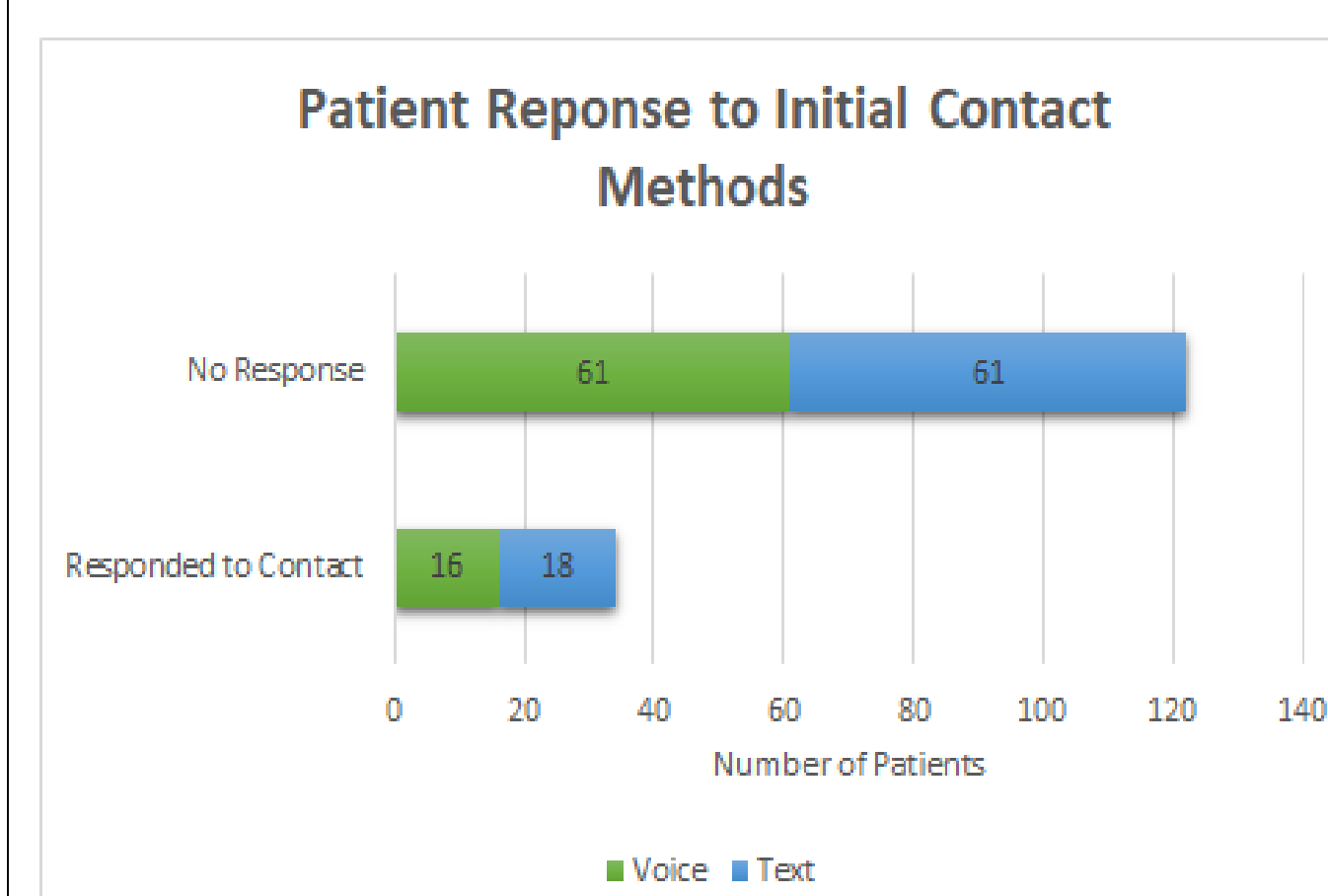


Figure 1. Number of patients who responded to voice vs text message. Chi-squared value was 49.67 with a p-value <0.0001.

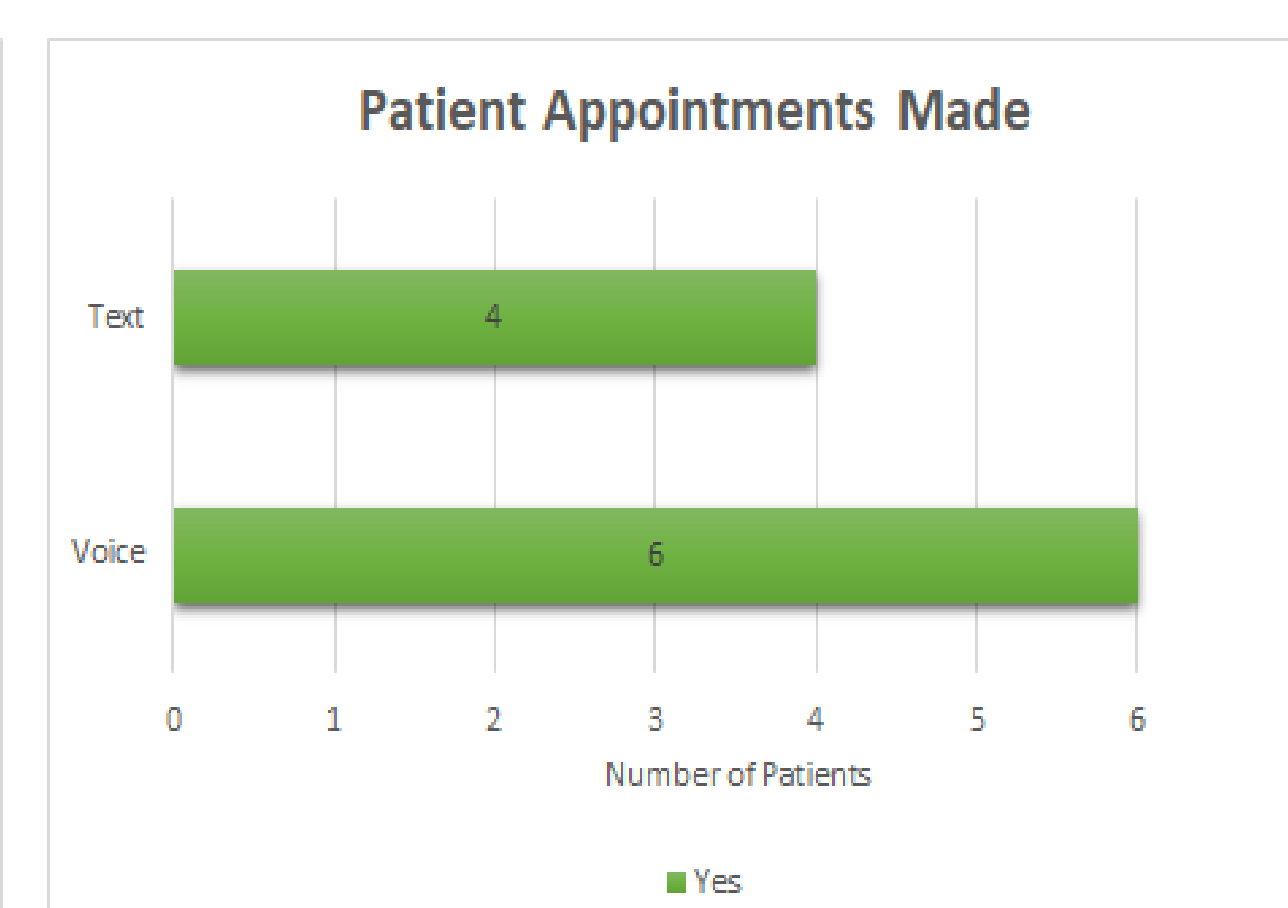


Figure 2. Number of patient appointments scheduled between voice vs text message. Chi-squared value was 118.56 with a p-value <0.0001.

## Discussion

The number of patients who responded to initial text messages over phone calls, and the appointments that were made via phone calls over text messages were both statistically significant. Our results suggest that text messages are an effective initial route of communication with patients, while phone call follow-ups ensure a higher rate of appointments.

Various limitations included the following:

- Low initial participation and loss of responders between initial contact and appointment making decreased the generalizability of our study to the greater El Rio population.
- Limited study time frame imposed shorter response windows on patients and possibly decreased overall response rates. These constraints diminished our ability to effectively confirm patients' understanding of our communication methods.
- Variation in Spanish language ability among experimenters was also a potential limiting factor, in particular when patients asked questions that required off-script communication.
- The use of multiple experimenters allowed for obvious variability and potential experimenter bias.

## Conclusions

The study demonstrated that combined use of text messaging and phone calls could lead to higher rates of scheduled appointments. Future studies could address whether appointments made with this method of contact are kept. There can be also be an additional feature placed in NextGen where staff can indicate that patients are no longer being followed at El Rio.

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## References

Bureau of Tobacco and Chronic Disease Division of Public Health Prevention Services, Contraeras OA, Sandoval-Rosario M. Diabetes in Arizona: The 2018 Burden Report. Phoenix, AZ: Bureau of Tobacco and Chronic Disease; 2018.  
Complications. Living with Diabetes. <http://www.diabetes.org/living-with-diabetes/complications/>. Accessed October 1, 2018  
Diabetes. Mayo Clinic. <https://www.mayoclinic.org/diseases-conditions/diabetes/symptoms-causes/svc-20371444>. Updated August 8, 2018. Accessed October 4, 2018.