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Assessing the Impact of Telemedicine on Diabetic Patients at an Underserved Urban Clinic

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PUBLISHED ABSTRACT

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ABSTRACT

Background/Introduction: The COVID 19 pandemic has highlighted the racial and ethnic disparities that plague our healthcare system. These studies also highlight that in people with poorly controlled chronic health conditions such as hypertension, diabetes and obesity, the severity of the COVID 19 infection is greater. With this study, we focus on the impact of the pandemic on an existing chronic condition, diabetes. The pandemic resulted in redeployment of our resident providers to the inpatient setting, resulting in disruption of the patient-physician relationship at Ryan Adair. The patients and the providers had to quickly adapt to a telehealth platform which was a novel challenge to both. We sought to define the use and impact of telemedicine for a low-income, urban population during the COVID-19 pandemic.

Objectives: To examine the use of tele visits among an urban, racially diverse, low-income population during the COVID-19 pandemic.

To assess the impact of tele visits on chronic disease outcomes for this population.

Methods: This project is conducted at Ryan Adair Health Center, a Federally Qualified Health Center (FQHC) located in the Central Harlem neighborhood of Manhattan that serves as a primary care training site for our Internal Medicine residents. To understand the impact of telehealth access, we focused on a single cohort that included all diabetic patients seen by resident providers within 3 months prior to the pandemic surge. We examined data for these patients over three discrete time periods: "pre-pandemic" (12/15/2019–3/15/2020), "pandemic surge" (3/16/2020–5/31/2020) and "post-surge" (6/1/2020–8/15/2020). This data will be tracked every three months to understand use and impact over the course of the pandemic.

The variables measured included HbA1c and the number and type of visits. We compared pre-pandemic HbA1c values with post-surge values. We stratified tele visits into telephone versus tele video visits. A non-interventional retrospective chart review study design was used.

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Diabetes; telehealth; outpatient; underserved urban population; COVID-19

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Results: Among our pre-pandemic cohort of diabetic patients (n = 225), 35.1% (n = 79) engaged in tele visits during the pandemic surge, 6.66% engaged in onsite visits, and 56% had no engagement (***Figure 1***). For patients who engaged in tele visits during the surge, the average HbA1c improved by 0.172%. For patients without tele visits during the surge, the average HbA1c worsened by 0.42%. Among the subgroup of high -risk diabetics during the pre-pandemic period (HbA1c >9), those with improved HbA1c had more tele visits during both the surge and the post-surge periods compared to those whose HbA1c worsened (improvement of 1.73 vs. worsening of 1.9%) (***Figure 2***). Among those who accessed tele visits during the surge period, 79.74% were phone-only (n = 63), 7.59% (n = 6) were tele video-only while 12.6% (n = 10) were both (***Figure 3***).

Conclusion: Our data suggest that telemedicine access improved average HbA1c outcomes among a low-income urban diabetic population. During the surge, HbA1c decreased or remained unchanged with telemedicine encounters, while patients without engagement in tele visits showed worsening HbA1c levels. A surprising result was that 79% of tele visits were conducted via phone-only, suggesting a benefit for use of this modality toward improving diabetes control for our population. Most patients in our cohort had no engagement in care during the surge period, highlighting the need to explore barriers to telehealth access. The true impact of HbA1c reduction through tele visits may represent an underestimation, since resident providers were redeployed to the inpatient setting during the surge, thus patients were seen by providers unknown to them. Exploration of data over the coming months will help elucidate the impact of provider continuity during tele visits on HbA1c outcome.

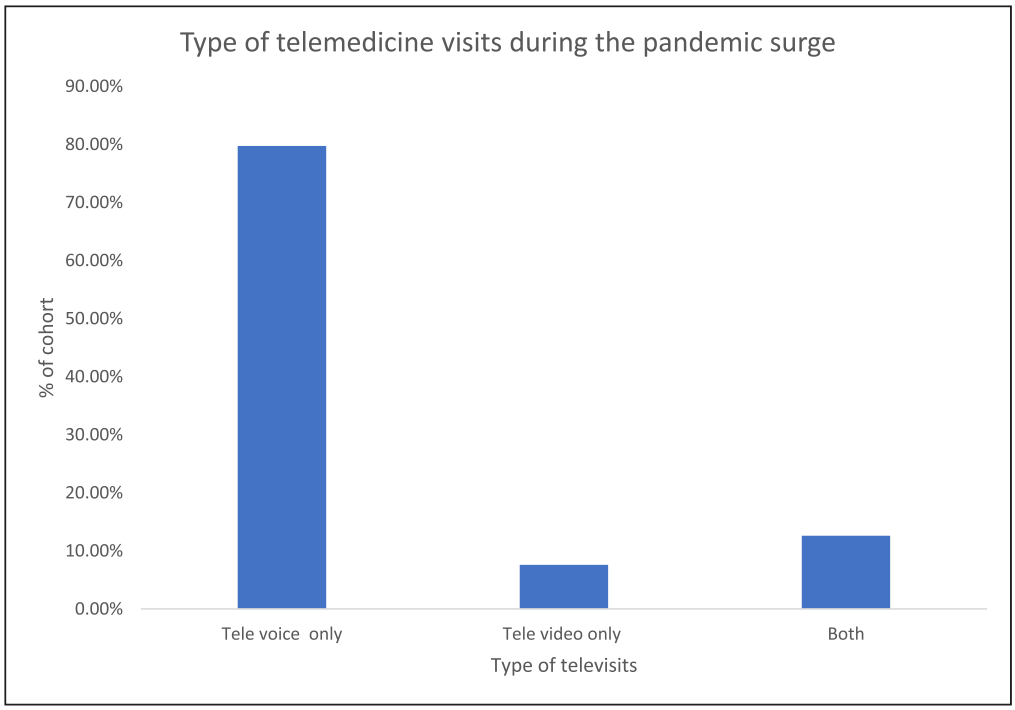

Figure 1 Visit Type among the diabetic cohort during pandemic surge.

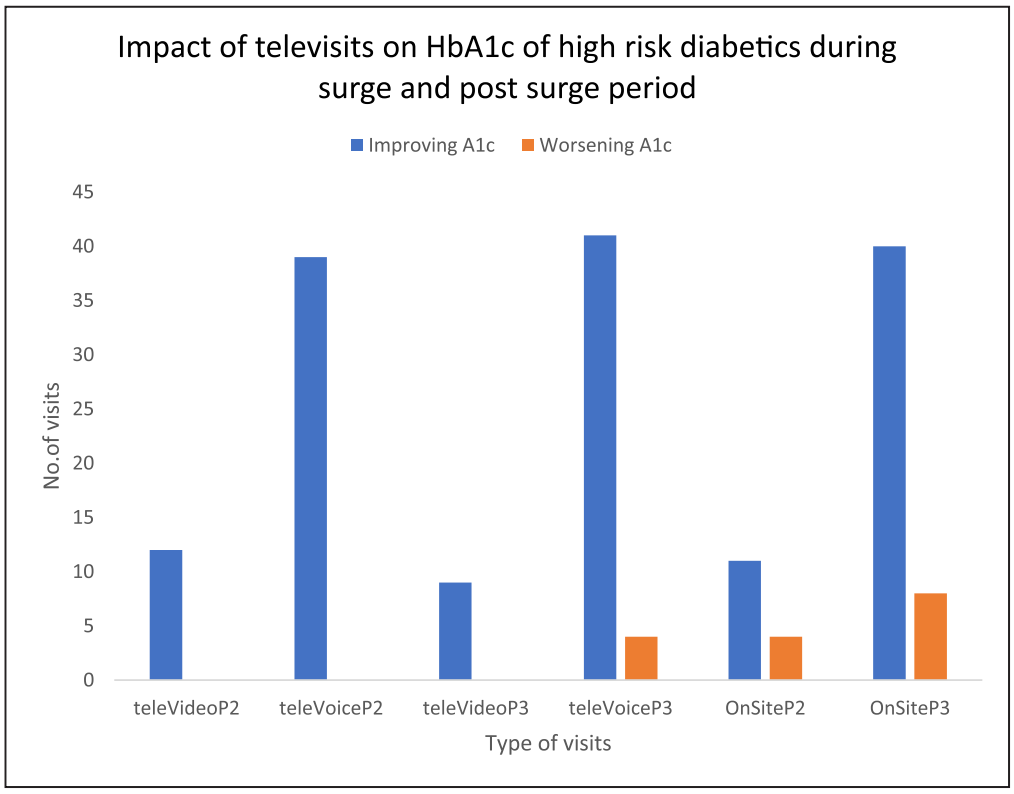

Figure 2 Impact of tele visits on HbA1c among high risk diabetics during the pandemic surge.

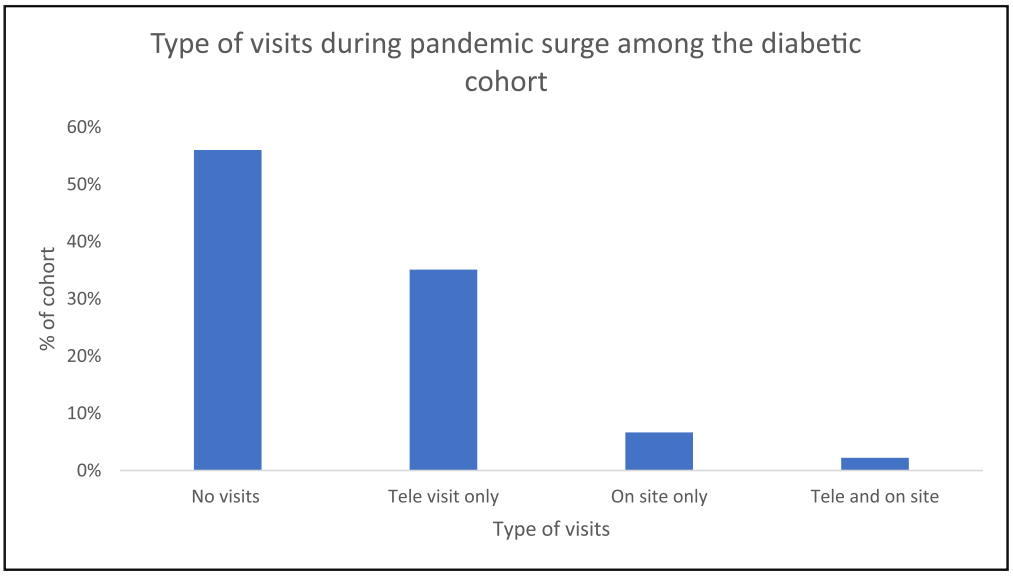

Figure 3 Type of telemedicine visits during pandemic surge.

COMPETING INTERESTS

The authors have no competing interests to declare.

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