COVID-19 was declared a pandemic on 03/11/2020 by the WHO and the State of Minnesota issued a stay-at-home mandate on 03/27/2020. While individuals with diabetes mellitus (DM) and severe obesity were identified as more likely to be infected and at higher risk of complications from COVID-19, access to outpatient clinics was limited during this time, with a shift towards telemedicine. In June 2020, the WHO reported that in 49% of 155 surveyed countries, diabetes treatment was disrupted. However, the impact on diabetes care in the US was poorly characterized, particularly among underserved groups. **Aim:** To study the impact of the pandemic and telemedicine on medical treatment of patients with DM at Hennepin County Medical Center (HCMC), a teaching hospital in Minneapolis, Minnesota serving a diverse inner-city population. **Methods:** Retrospective cohort study design with 710 participants. We compared A1C and weight changes before and after the pandemic. The study group (n=344) included patients, 18 years of age or older, with DM Type 1 or Type 2 who presented for an HCMC diabetes clinic visit between 12/2019-02/2020 and a follow up visit between 6/2020 -10/2020. The control group (n=366) included patients with DM who presented for an HCMC diabetes clinic visit between 12/2018 - 02/2019 and a follow up visit between 6/2019 -10/2019. **Results:** There was a significantly lower A1C reduction in the cases as compared to the control group (-0.34 [CI -0.59, -0.09] p value 0.007), adjusted for inpatient admission, continuous glucose monitor use, diabetes type 1, insurance status, insulin use, GLP-1 agonist use, smoking status and hypertension. Weight reduction during the pandemic was lower as compared to the control but did not achieve statistical significance (-0.96 [CI -3.02, 1.09] p value 0.36). Telemedicine use among the study group resulted in an insignificant A1c reduction of -0.24 (p value 0.23). There was statistically significant weight gain of 0.42 among the group who used telemedicine, while nonusers had weight loss of -3.24 (p value 0.04). Telemedicine users had higher insulin utilization (92.6% vs 83.3%, p value 0.017) and lower self-pay and Medicaid enrollment (1.7% vs 5.9% and 33.8% vs 40.6% respectively, p value 0.011) as compared to nonusers. **Conclusion:** The COVID-19 pandemic led to a significant deterioration of glycemic control but had no effect on weight. Telemedicine use led to A1c reduction but did not reach statistical significance potentially due to the small sample size and short duration of follow up. Significant weight gain was observed in telemedicine users influenced by greater insulin use and insurance coverage as compared to weight loss amongst nonusers which may be attributed to socioeconomic barriers such as food scarcity among those without the means to access telemedicine. **Presentation:** Sunday, June 12, 2022 12:30 p.m. - 2:30 p.m.