Background: During the COVID-19 pandemic, the use of telemedicine (virtual synchronous visits via phone or video format) to deliver health care increased significantly. Objective: Explore endocrine provider experience and perspective on the use of telemedicine visits, compared to face-to-face encounters, to manage patients with type 2 diabetes (T2DM). Methods: A survey was designed based on published literature and further refined based on stakeholder feedback through individual interviewing and pilot testing with Endocrinology providers. Survey domains included self-reported demographics, clinical time spent conducting telemedicine visit, perceived benefits and utility and barriers to incorporating telemedicine into practice. The anonymous uncompensated survey was completed via REDCap by Endocrinology providers at a leading academic medical center in the USA. Results were analyzed using descriptive statistics. Significance was tested using two tailed Mann-Whitney U Tests (α = 0.5). Results: Forty-five surveys were electronically distributed. The response rate was 58% (N=26) with 85% being physicians and 15% nurse practitioners. Majority (85%) of the respondents identified as female and 42% had been practicing for >10 years. Since March 2020, 69% of providers reported spending more than 25% of their clinical time on telemedicine visits. Respondents under the age of 40 and those with less than 10 years of experience spent significantly less time on video visits compared to providers over the age of 40 (p = 0.036 and providers with more than 10 years of experience (p = 0.049). When comparing face-to-face visits to telephone visits for established patients, 58% of providers felt telephone based virtual visits were not as effective, whereas 4% felt video based virtual visits were not as effective. When comparing face-to-face visits for new patients to telephone visits, 92% of providers felt telephone based virtual visits were not as effective, whereas 39% felt video based virtual visits were not as effective. Most (92%) of respondents felt telemedicine increased patient access to care though there was a difference in the perceived quality of care delivered based on visit modality, with video visits preferred over telephone. Although the loss of physical exam opportunities was concerning to most respondents (92%), the level of concern was lower with video visits. The most frequently reported barriers to incorporating telemedicine were changes to clinic workflow (73%), low reimbursement (62%), and patient complexity (50%). All respondents plan to continue to offer telemedicine visits once the pandemic is over. Conclusion: Telemedicine is an increasingly used tool for the management of T2DM. The type of visit and level of familiarity with the patient were cited as important factors for matching patient to mode of delivery. Understanding provider perspectives on facilitators, barriers, and benefits of telemedicine is useful for developing best practices and hybrid models of delivery of T2DM care. Presentation: No date and time listed