Virtual Care Visits During the COVID-19 Pandemic: A New Direction in Medicine

By: Samer Al-Hadidi, Luis Castro, Monica Cenkowski, Christopher Dutka, Stephanie Grossi, Kirsten Kettler, Stewart Nadurak, Robin Penwarden, Quinn Roberson-Stovel, Sara Schur

Interlake Eastern Regional Health Authority
Beausejour, Gimli, Oakbank, Pinawa, Pine Falls, Selkirk, Teulon

Home for the Summer 2020

Supervisor: Dr. Ian Alexander

Introduction:

During the COVID-19 pandemic, many physicians in Manitoba have decided to offer virtual care visits as an alternative to in-person visits. Virtual care visits are provider-patient interactions that occur over telephone, or video applications, such as Zoom, FaceTime, or Skype. The goal with virtual care visits is to maintain quality, accessible patient care, while helping to stop the spread of the virus by limiting patient traffic in healthcare facilities.[1] New tariffs, and resources were created to help physicians' transition into virtual care visits and achieve this goal.

Although the pandemic has certainly accelerated the process of integrating virtual care visits, virtual care has previously been gaining momentum in Canada, and abroad. Studies have shown that virtual care visits can improve access to health care in rural and remote areas, and reduce expenditures for patients such as lost wages, time, and transportation/parking costs.[2] In addition, they can increase accessibility for patients living in long-term care facilities, or with mobility issues, who could find it difficult coming to in-person appointments.[3] However, virtual care visits are not without their limitations. It requires patients, and providers to have the necessary technology, and skills to conduct a visit. Other barriers to integrating virtual care such as cost, training and support, and providers engagement, have been identified as well.[4]

To determine what the role of virtual care visits will be in our healthcare system, it is important to gather data on the experiences of physicians and patients with virtual care visits. Some empirical evidence has demonstrated that physicians are satisfied with virtual care visits, however, they still preferred in-person visits because their physical exam, and laboratory testing abilities weren't limited.[5] Patients have reported that virtual care visits were of high quality, similar to in-person visits, and that they were helpful in resolving their concerns.[5,6] In addition, patients often appreciate the convenience and cost-savings associated with virtual care visits.[7]

Overall, more data related to effectiveness of virtual care visits, and the physicians and patients experiences with these types of visits, is necessary to better understand the applicability. The objectives of this study are to conduct a review of virtual care visits that occurred in the Interlake Regional Health Authority, to seek out physician's experiences with virtual care visits, and to analyze how effective virtual care visits are at resolving medical issues.

Methods:

Our study's aim was to assess the effectiveness of virtual care in the Interlake-Eastern Regional Health Authority (IERHA) through standardized, objective data collection, as well as through an analysis of the subjective experience of the physicians delivering the virtual care.

In order to conduct a standardized, objective assessment of the effectiveness of virtual care, a retrospective chart review was performed. First and second year University of Manitoba medical students participating in the Home for the Summer (HFTS) program (a summer clinical work experience) each selected a physician at their IERHA site whose charts they would subsequently review. For the purposes of standardizing the data, a 4-businessweek period in May (May 4th – May 29th, 2020) was selected as the chart review period. Each HFTS student extracted data from the charts of all patients who were under the care of their selected physician and participated in any form of virtual care encounter during this timeframe, totaling 1127 virtual visits. Data collected included date of visit, method of virtual care visit (telephone, video call), platform of video call, whether or not photographs were provided by the patient, type of visit/reason for visit, patient age, patient sex, and whether or not in-person follow up was required within 7 days of the initial virtual care visit. The data was then organized and converted into graphical representation

using Microsoft Excel. Statistics regarding patient demographics, numbers of visits by visit type, and in-person follow up were generated.

Subjective accounts of the virtual care experience of physicians providing such care were obtained using a survey. Our 10-question survey was generated using the SurveyMonkey platform, and included questions regarding the availability of virtual care technology, frequency of technical difficulties, types of visits most amenable to virtual care, satisfaction with the virtual care experience/quality of care provided, and the likelihood of continuing to incorporate virtual care into practice after the COVID-19 pandemic. The survey questions were a mixture of multiple choice, multiple select, and numerical rating scales (from 0 to 100). One open-ended question also offered the opportunity for physicians to provide a written response for the purpose of qualitative analysis. The survey link was provided to IERHA administrative staff and was distributed to all practicing physicians in the region via email. A total of 20 physician responses were received. The data collected from these responses were organized and graphical representations generated using Microsoft Excel.

Results:

The virtual care physician survey was completed by 20 physician staff members. All respondents (100%) indicated that phone call was the method of virtual visit that was available to them while 15% reported access to video calls (10% EMR supplied video conferencing app, 5% Non-EMR video conferencing app). Patient access to resources was the most common decision-making factor in the type of virtual care delivered with 70% of patients citing telephone calls as the only method of virtual communication. Physician satisfaction with virtual care was reported as 66/100 with 100 being the most satisfied. Physicians perceived that their patients were more

4

satisfied with virtual care than their providers (72/100). Staff indicated that 70% of the time, they rarely experienced technical difficulties during a visit. Physicians commented on what made a virtual visit most successful and reported convenience, safety, and comfort for both patient and provider. Virtual care was most successful in cases where administrative staff directed patients towards an in-person or virtual care visit. As well, physicians indicated that knowing their patients for a long time was helpful in virtual care. See Figure 1 for the types of virtual care visits that physicians found most successful. The criticisms of virtual care were that the lack of physical exam made it very difficult to properly assess a patient, phone calls often took longer and in-person visits were often needed anyway. Figure 2 provides information on how likely physicians would be to provide virtual visits once there are no longer any COVID-19 related restrictions in place.
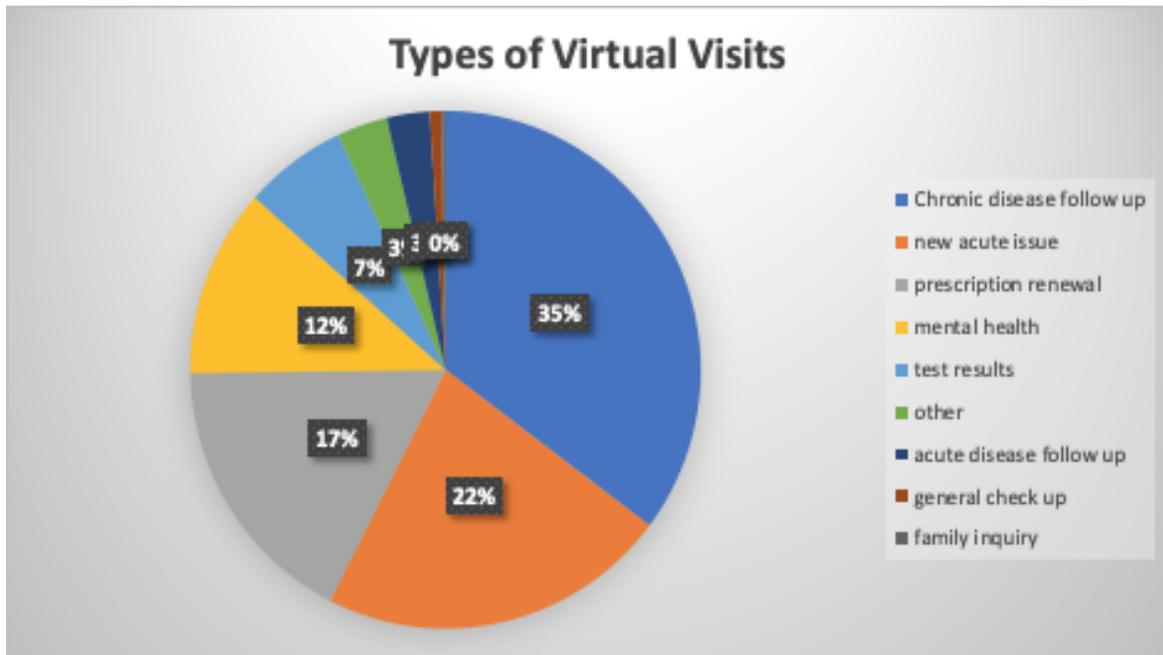
The retrospective chart review of patient-provider virtual visits in the IERHA throughout the month of May 2020 found the most common type of virtual visit was "chronic disease follow-up", followed by "new acute issues" then "prescription renewals" (Figure 3). Of these 1127 visits that occurred virtually, 78 (6.9%) required an in-person follow up visit within seven days of the initial virtual appointment. Figure 4 breaks down the types of visits that needed an in-person follow up visit within seven days of the initial virtual visit. The most common type of visit that needed an in person follow up was new acute issues, followed by chronic disease follow up and mental health. Additionally, the age distribution of patients accessing virtual care was analyzed and noted that the most visits occurred in the age range of 60-70 (Figure 5). Figure 5 demonstrates that all age groups were accessing virtual care to some degree.
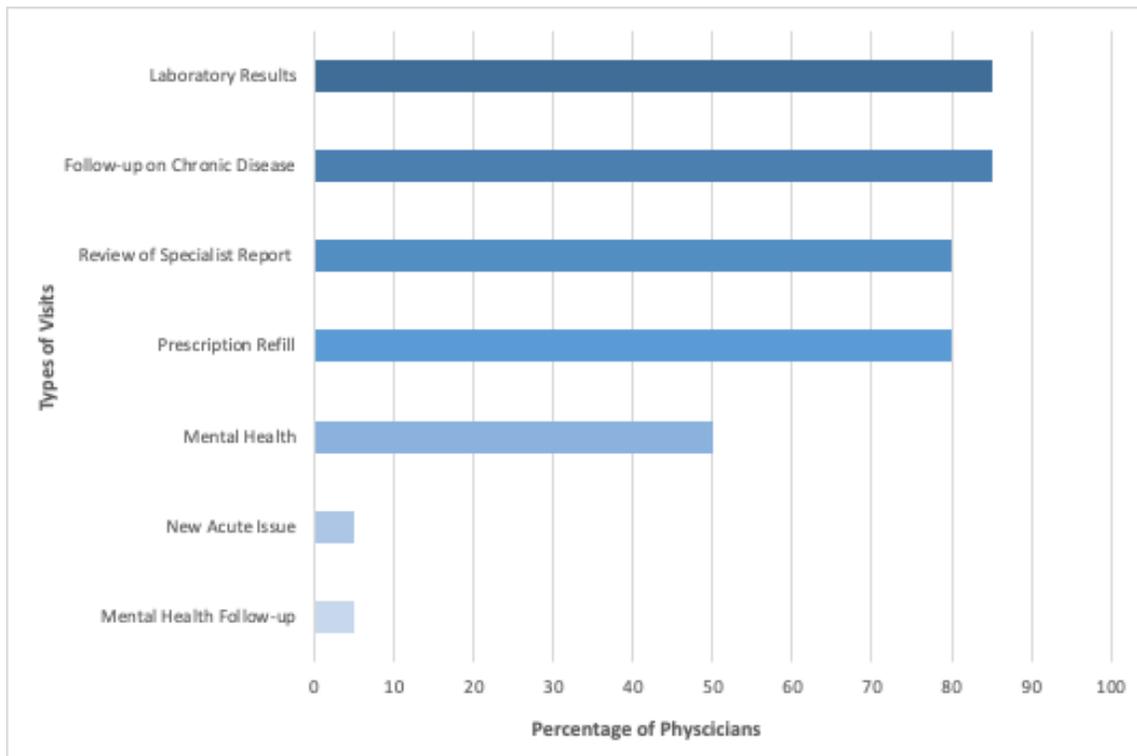
Figure 1. Data collected from the online physician survey indicating the percentage of physicians who thought a type of visit would be most successful as a virtual visit.
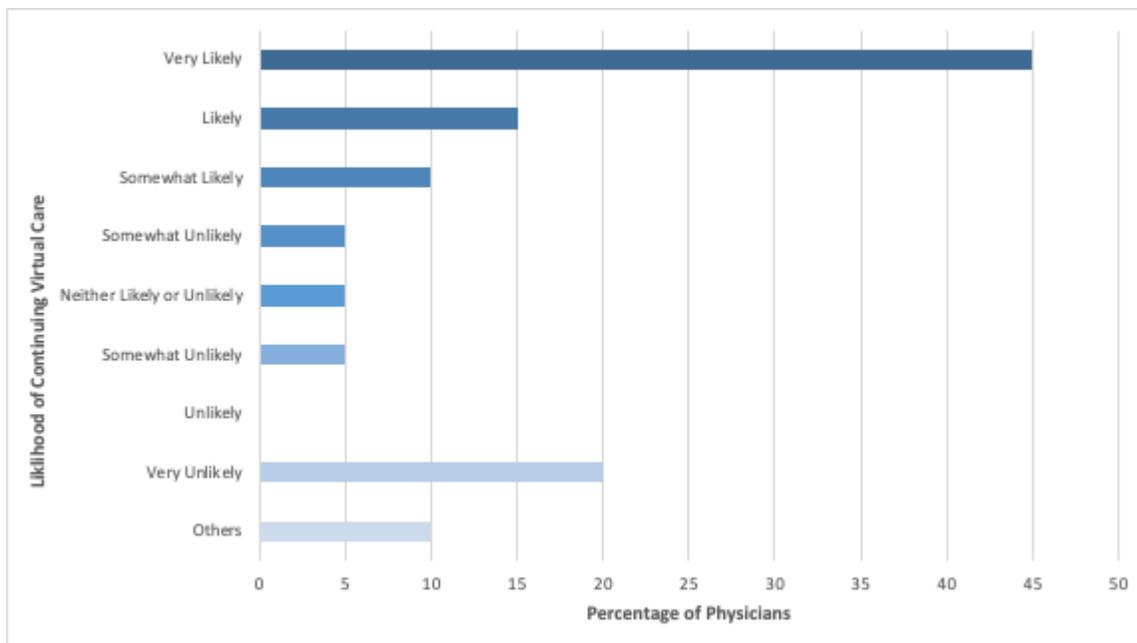

Figure 2. Data collected from the online physician survey indicating the physicians' likelihood of providing virtual care after the COVID-19 restrictions have ended. *Other responses were related to remuneration with respondents stating they would be more likely to continue virtual visits provided they would be compensated appropriately for them.

Figure 3. Data collected from the retrospective chart review of physician-patient virtual visits that occurred during the month of May 2020.
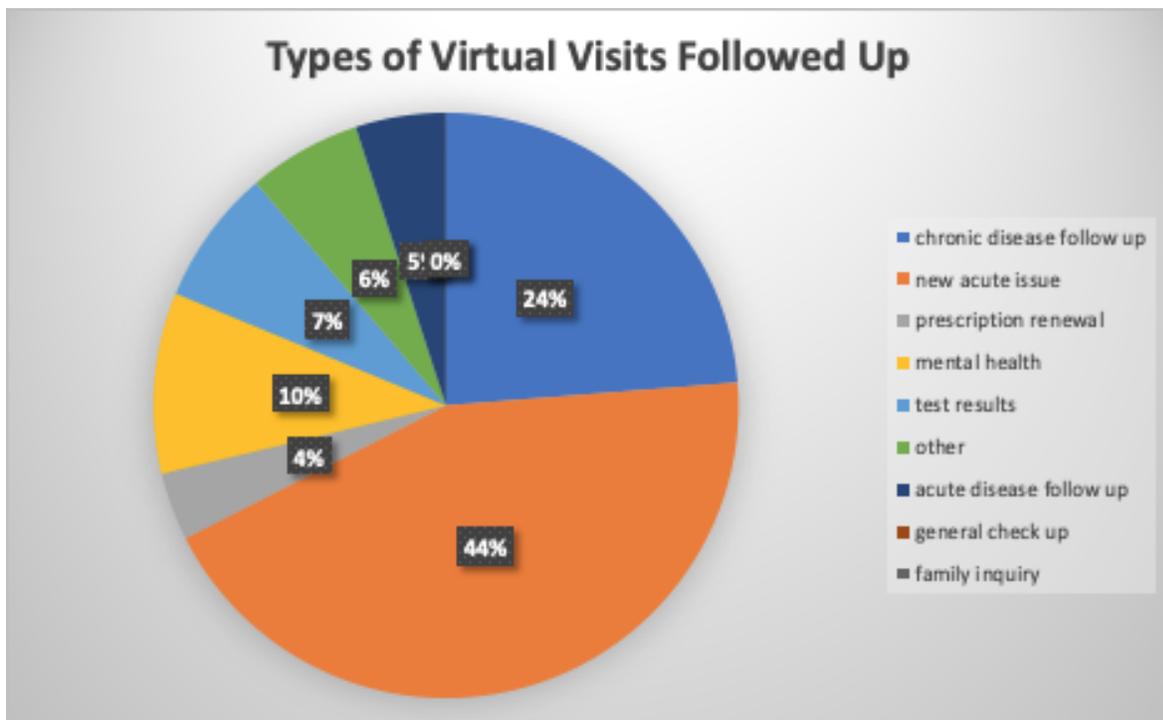
Figure 4. Virtual visits over the month of May 2020 that required an in-person follow up appointment.
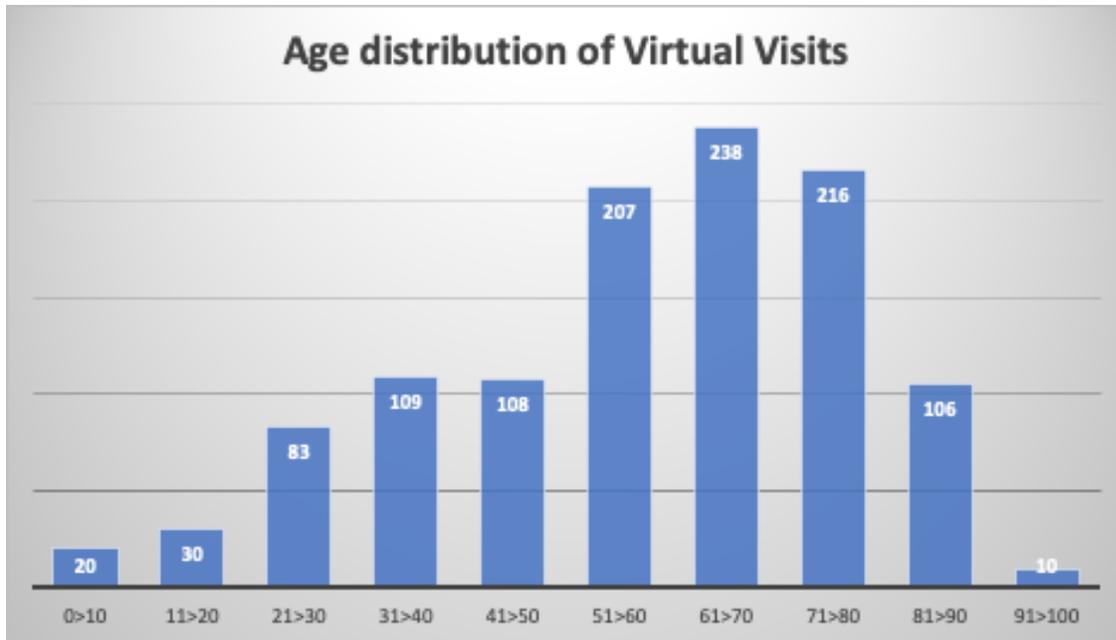
Figure 5. Age distribution of patients accessing virtual care in the IERHA during the month of May 2020.

Discussion:

The goal of this study was to determine how effective virtual care visits were within the IERHA during one month of the COVID-19 pandemic. This was accomplished by conducting a retrospective chart review and analyzing the responses of a physician's survey that was distributed within the region.

The physician survey provides valuable information on the virtual delivery of care in the region. With respect to the types of visits that the physician perceived to be the most effective, Figure 1 shows a consensus amongst those surveyed that visits revolving around laboratory results, follow-up on chronic diseases, review of a specialist's report and prescription refills were the most successful, and new acute issues were regarded to be the least successful. Virtual visits surrounding mental health issues are a more conflicted type of a visit, where half of the physicians surveyed felt these visits could be successful virtually and half disagreed. It is clear

that virtual care visits may be more useful to specific types of appointments but are still a viable option for physicians to offer their patients.

The majority of physicians surveyed reported a high likelihood of utilizing virtual visits after COVID-19 restrictions were lifted as demonstrated in Figure 2. However, 20% of physicians analyzed reported being very unlikely to continue with virtual visits and 10% reported only continuing if compensation for virtual health also continued post COVID-19. It is our impression that the type of visits being conducted by each care provider (prescription renewals vs. new acute) and the unique patient population of each practitioner may have played a large part in the variations in physician responses.

The retrospective chart review demonstrated large utilization of virtual visits by physicians in the IERHA during May 2020, averaging over 100 visits per physician. During this time, the majority of visits conducted were for chronic disease follow-ups, new acute illnesses and prescription renewals (Figure 3). The effectiveness of virtual care visits had been defined as whether or not the visit required an in-person follow up within 7 days. The overall follow-up rate required for virtual visits was 6.9%. Of the most commonly seen visits by physicians, "new acute issues" required the most follow-ups out of all of the other categories (Figure 4). "Prescription renewals" were considered quite successful as they rarely required a follow-up visit, whereas "chronic disease" follow-ups were moderately successful (Figure 4).

The follow up rate is largely composed of follow-up visits for "new acute issues." This high rate is possibly due to the inability to conduct any component of a focused physical examination through the phone, thereby requiring an in person visit for proper assessment. This exemplifies that the effectiveness of virtual visits is highly dependent on the type of visit. Given

that all physicians in the region deliver virtual care by telephone, it would be interesting to see if video calls would have an influence on the follow up rate, particularly on "new acute issues."

The patient demographics of the chart review showed a larger portion of virtual visits being conducted with individuals between the ages of 60 and 80 (Figure 5). This may support the continuation of virtual visits for specific patient populations such as the elderly, as limitations such as accessibility and transportation can be more frequently present. Although comparison of in-person vs virtual patient demographics were not conducted, it appears virtual visits weren't a restricting factor for certain age groups of patients and the ranges depicted in Figure 5 most likely represent the usual demographics of patient visits regardless of visit type.

Data collected from the chart review showed that only 1.5% of visits included photos as a supplement to the virtual appointment. Based on the data gathered, it is unclear as to the reason why photos were not used more often. It may be related to lack of compatible software or concerns related to patient health information privacy. As virtual visits continue to take place in the future, photos could help supplement certain types of visits that rely primarily on patient history and inspection, such as dermatological issues.

Within the study, certain limitations were identified that may affect the results and their interpretation. First, the physician survey results were based on a small sample pool that may not have been completely representative of the IERHA's perception of virtual care visits. This potentially limits the ability of these findings to be generalized to the entire region and other rural settings. Second, the chart review was conducted by a research team of 10 individuals, who subjectively categorized each physician's visits according to pre-established guidelines. The differences in the interpretation of patient categories may have led to slight deviations in the data. Similarly, each patient was only sorted into one category but may have had multiple

reasons for the visit and therefore would not have been recorded during data analysis. Finally, the 7-day follow-up timeline criteria used to identify whether phone visits were effective in resolving virtual appointments may have been too short of a time frame for clinics to book the required follow-up appointments. This may explain the low percentage of in person follow-ups as many patients could have required a follow-up after the 7-day data collection window.

Finally, this study did not include the patient's perspective of the effectiveness of virtual care visits and therefore was missing a key viewpoint on the effectiveness of virtual visits. However, a study conducted by Ackerman et al. concluded that a "high proportion of patients find e-consults to be an acceptable strategy for management of their medical condition." In future studies, it would be encouraged to include the patient's perception when determining the effectiveness of virtual care visits.

Conclusion:

In conclusion, the COVID-19 pandemic has fast-tracked a new way of delivering health care. Although challenging at times, virtual care has created more options for physicians and patients to access and deliver health care in the way that best suits them. These unprecedented times have created an opportunity for discovery of what kinds of virtual care visits work best and which ones may continue beyond the pandemic. This project demonstrated that virtual visits in the form of telephone calling was usable for a wide range of patients and effective at resolving the majority of reasons for visits.

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Appendix 1: Distributed Physician Survey without Responses.

Physician Survey on Virtual Care Experience

This survey is distributed to all physician staff within the Interlake-Eastern Regional Health Authority to gather data regarding virtual health care. If you had engaged in virtual visits during the month of May, please consider filling out this short survey.

1. Which methods of virtual visits are available to you in your practice ? (Check all that apply)

☐ Phone Call

☐ Video Call - Non-medical video conferencing app e.g Zoom, Facetime, Skype

☐ Video Call- EMR supplied video conferencing e.g. MEDEO, Microsoft Teams

Other (please specify)

2. Prior to arranging a virtual visit, how is the method of virtual visit decided ? (Check all that apply)

☐ Most patients have access to telephone only

☐ Most patients have access to video call only

☐ Physician has access to telephone only

☐ Physician has access to video call only

☐ Physician and patients have access to multiple platforms and patient chooses based on preference

☐ Physician and patients have access to multiple platforms and physician chooses based on preference

☐ Most patients do not have any access to technology

☐ Other (please specify)

3. In general terms, how satisfied are you with the delivery of virtual care?

0 (Most dissatisfied)   100 (Most satisfied)

4. How likely are you to be able to provide adequate and necessary care during a virtual visit ?

0 (Not likely at all)   100 (Most likely)

5. In general terms, how do you perceive the satisfaction level of your patients in relation to virtual care?

0 (Most dissatisfied)   100 (Most satisfied)

6. How often do you experience technical difficulties during virtual care visits ? (e.g becoming disconnected, lagging, poor quality communication)

○ Always

○ Usually

○ Sometimes

○ Rarely

○ Never

7. What specific features have made virtual care most and least successful in your practice ?

8. What type of visit do you think is most successful as a virtual visit ? (Check all that apply)

☐ New acute issue

☐ Follow-up on chronic condition

☐ Prescription Refill

☐ Laboratory Result

☐ Review of Specialist Report

☐ Mental Health

☐ Other (please specify)

9. How likely are you to utilize a video call virtual visit if you had access to secure, user-friendly technology available to you ?

○ Very likely

○ Likely

○ Somewhat likely

○ Neither likely nor unlikely

○ Somewhat unlikely

○ Unlikely

○ Very unlikely

○ I already have access to video call virtual visits

10. How likely are you to continue to provide virtual visits once there are no longer any Covid-19 related restrictions in place?

☐ Very likely

☐ Likely

☐ Somewhat likely

☐ Neither likely nor unlikely

☐ Somewhat unlikely

☐ Unlikely

☐ Very Unlikely

☐ Other (please specify)