VIRTUAL CARE: PHYSICIANS' PERSPECTIVES IN A RURAL PRIMARY CARE CLINIC IN SOUTHERN HEALTH-SANTÉ SUD

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Introduction

There is no doubt that we are in the midst of interesting and rapidly changing times. COVID-19 has forced us to adapt, and the use of virtual care in medicine has been one adaptation to minimize exposure and spread of the virus in health care. The Canadian Medical Association (CMA) defines virtual care as "any interaction between patients and/or members of their circle of care, occurring remotely, using any forms of communication or information technologies with the aim of facilitating or maximizing the quality and effectiveness of patient care." [1]

The inclusion of virtual care in medicine has been in discussion for many years. In fact, Canada was one of the first countries to develop virtual care through the work of the late Dr. Maxwell House in the 1970's, who used telephones to have consultations to remote sites in Newfoundland.[1] Since that time, however, other countries have far surpassed our use of virtual care. In England, over 13% of 23 million appointments were done by phone. In the US, the Kaiser Pemanente system (which covers 12 million members) said that over half of all encounters with patients were virtual. Comparing these numbers to Canada, out of the 270 million billable services provided in 2015, only 0.15% of them were telehealth clinical sessions.[1]

In November, 2019, Shared Health/Soins communs released the Manitoba Clinical Services Plan: a collaborative provincial plan "to improve the delivery of health care across the province."[2] Virtual care is an integral part of the plan to take on innovative approaches to care. For primary care appointments, the plan highlights virtual tools such as Telehealth and home monitoring which will allow patients to connect differently with practitioners. The plan suggests that primary care providers can expect an increase use of virtual care methods with their patients.[2]

In March of 2020, in response to the COVID-19 pandemic, Manitoba Health, Seniors and Active Living released additional tariffs to include virtual care.[3] COVID-19 has forced the health system to adapt and implement these perhaps more quickly than anticipated. While the tariffs are currently temporary (as of June 15, 2020) the Manitoba Clinical Services plan suggests that virtual care is here to stay.

There are many potential advantages and challenges with the implication of virtual care: specifically, in the context of rural areas. Rural and remote communities in particular have a mismatch in specialist services and patient demand.[2] There is less variety in rural specialists available and patients, on average, have to travel much greater distances to see one compared to patients who live in the city. In Manitoba, we have a strong rural presence which includes 44% of the population being distributed across geographies with less than 10 people per km.[2] Unfortunately, there is currently a gap in the literature in relation to the delivery of virtual care in the rural setting.

This project was designed to get insight on physicians' perceptions and experiences of virtual care in one rural primary care clinic in Southern Health-Santé Sud in the context of COVID-19. It

is anticipated that these insights could help inform and improve virtual care in the future, especially if it is to become a permanent part of practice.

Methods

A survey was sent to five doctors working in a rural primary care clinic in Notre-Dame-de-Lourdes, MB within the Southern Health-Santé Sud health region. The survey administered using SurveyMonkey consisted of multiple-choice and open-ended questions (see Appendix A). A total of five survey responses were received between the dates of June 22 and July 6, 2020.

Results

Overall, 80% of the doctors agreed that virtual care has been an easy transition since the onset of COVID-19, whereas 20% disagreed. No responses were neutral.

When asked which methods have been used to conduct virtual care visits, 100% of doctors listed telephone, 40% listed personal video conferencing (based from the patient's home), 40% listed E-mail, and 20% listed instant messaging. No doctors had reported using video conference via telehealth sites. This is likely because the telehealth site in Notre-Dame-de-Lourdes is in the same building where patients would go see the provider.

Question 2 from Appendix A asked the participants to rank the various methods of virtual care from most to least beneficial. The averaged results were: 1) video at home, 2) telephone, 3) telehealth, 4) email, 5) text messaging. The exact responses can be seen in Table 1 in Appendix B.

The doctors were asked to compare the overall quality of virtual care compared to in-person: 60% said it was about the same whereas the other 40% said it was worse. Along the same lines, they were asked if they felt satisfied with the quality of the interaction at the end of a virtual appointment: 40% said usually whereas 60% said sometimes.

The physicians were asked about their level of agreement with the potential advantages of virtual care such as: increase in patients presenting to appointments, having more free time during the day in between patients, ease of staying on time for appointments, overall convenience for the patient, and overall convenience as a doctor (see Table 3 in Appendix B). Eighty percent agreed that virtual care appointments are more convenient for patients, but the majority (60%) did not agree nor disagree about the convenience for doctors. The results were neutral for increase in patients showing up to appointments and neutral for physicians having more time in between patients. However, 60% of the physicians did agree that they have been better able to stay on time for their appointments since the uptake in virtual care.

The doctors were then asked about their level of agreement with potential disadvantages (Table 4 in Appendix B) of virtual care. Sixty percent agreed and 40% strongly agreed that virtual care is not appropriate for all patient needs. Additionally, 80% agreed that it is

challenging to know ahead of time which patients will have their needs met by a virtual appointment vs. which will require an in-person visit. Responses were neutral in regard to the quality of virtual care network connections (cell service, audio quality, receiving photos, etc). However, 60% of doctors agreed that reaching patients virtually is challenging. Sixty percent of doctors also agreed that the inability to take vitals at each appointment is an issue, whereas 20% disagreed.

Notably, 80% of doctors disagreed with the following statement: "The tone of the conversation and patient's voice give enough insight to properly assess the patient's current health status." Similarly, when presented with the statement "I am able to properly assess and address emotional cues virtually" another 60% of doctors disagreed, and 20% strongly disagreed.

The doctors were asked if virtual appointments differed in appropriateness based on the type patient care that was needed (Table 2 in Appendix B). Doctors were neutral for the category of first-time encounters. For assessments of new diagnoses or problems, 60% of doctors think virtual care is appropriate, 20% were neutral, and 20% think it is not appropriate. They found that chronic disease management can be appropriately cared for virtually (80% listed appropriate and 20% listed very appropriate). On the other hand, 80% found that the management of acute conditions was not appropriate whereas the other 20% found it to be appropriate. In conversations outside of the survey, many doctors mentioned that these categories could be even further broken down, and that their answers would change for each category (example: Musculoskeletal exam, rashes, prenatal, etc.)

The doctors were asked if there were advantages or disadvantages to virtual care specific to rural settings. Advantages included better access by removing barriers such as long distance travelling for patients (which is especially challenging during stormy weather or the winter), missing work, and childcare. Disadvantages listed were that some rural areas have very poor cellular service and internet speed which can be an issue.

When asked about the type of resources or supports (for physicians or the patients) that would help better provide virtual primary care in the future the majority answered high speed internet and better cell service. The importance was in particular to be able to implement virtual care by video or image sharing which would allow for more comprehensive virtual care. It was noted that cellular service would be particularly helpful in the context of Hutterite colonies given that many use a central landline, making it difficult to punctually reach patients in the colony. In addition, it would be helpful to have better processes for staff to triage who needs in-person visits.

Discussion

Interestingly, even with a small set of responses from doctors working in the same area, there was a wide variety in some of the answers to the survey. However, some of the other answers provided very consistent results.

Overall the results showed that doctors found video conferencing and telephone to be strongly favoured over e-mail or instant messaging.

The questions that had a wide range of answered may partially reflect the type of practice and clientele the physician is working with. Based on several conversations with the doctors and observing them in clinic, it seems that the physicians that have known some of their patients for many years described having an easier transition to telephone appointments compared to physicians who are new to the area and are meeting new patients over the phone for the first time. This may also be associated with why some doctors found that they now have more time in the day in-between patients whereas others have found the opposite.

A theme that has come up many times in clinic has been the "double appointments". The doctors often mentioned that they would have a telephone appointment with a patient in the morning, only to have to ask them to come in later in the day because a telephone assessment is not appropriate for their needs. This is not time efficient. One of the main issues that still exists with the efficient implementation of virtual care is the ability to properly triage which patients will require an in-person assessment and which will not. This is emphasized by the 80% of doctors who agreed that it was a challenge. Different types of appointments were perceived as more or less appropriate. These findings and future results could help inform categories of appointments that are more or less appropriate for virtual care, which may, in the future, avoid double bookings. For example, chronic disease management was perceived by physicians as appropriate for virtual care. Based on discussion with the physicians, other categories that could be a good fit could include prenatal care, urinary tract infections, or prescription refills. On the other hand, categories that will likely always require an in-person assessment based on more discussions with the physicians could include musculoskeletal issues, rashes/dermatology, ear infections or any other physical exam. This area may benefit from follow-up research.

One of the most consistent set of responses came from the question regarding advantages to virtual care in the rural setting. The answers made it clear that doctors believe virtual appointments are more convenient for the patient, especially relating to travel in the rural setting. These findings are supported by a recent survey done by the CMA in May of 2020, which found that "Thirty-eight percent of patients would choose the option of phone, video-conference, email or text rather than an in-person consult for a first point of contact for a doctor's advice."[4] This result of this study did not specify if the majority of respondents were from a rural area. The results could differ for rural and remote areas, where we might expect to see a higher percentage of residents opting for virtual methods. In Canada's largest top 25 largest cities, at least 90% of the people were less than 5 km from their nearest physician, whereas only 56% of people living outside of the cities were as close.[5] In Southern Health-Santé Sud's 2019 Community Health Assessment, less than 50% of primary care visits among the residents who live in the region were within their home district.[6] This is the lowest in the province and suggests that Southern Health-Santé Sud residents have to travel more to access primary care. The increase in convenience to the patients, however, can only be worthwhile if the quality of care provided by the doctors virtually is adequate and if the doctors are still able

to manage their time. The fact that 60% of the doctors were able to better stay on time with virtual care (even with some double bookings) is encouraging.

On the other hand, the doctors were also very consistent in listing internet speed and cellular service as a major barrier in successfully delivering virtual care in rural areas. According to the Canadian Radiotelevision and Telecommunications Commission, "Nationally, 86% of Canadian households have access to download speeds of at least 50 megabites per second and upload speeds of 10 megabits per second. In contrast, only 41% of households in rural communities have the same access."[7]

Although virtual care provides the potential to increase access to care for some people, CMA mentions that there is also the potential to increase inequities in access to care for some; both in terms of geography and socioeconomic status.[7] Upon discussions with the doctors, they expressed similar concerns. "In 2017 it was estimated that only two out of three households in the lowest income quintile had a home computer (63%) or Internet access at home (69%), compared with more than nine of out 10 households in the top three income quintiles."[7] Inequities could be exacerbated for some patients who experience further challenges such as digital health literacy.[7]

Although the results from the current survey are interesting, there are limitations to this study. It may be beneficial to survey more participants as five is a very small sample size. Additionally, it would be ideal to expand this study to survey doctors in other areas of Southern Health-Santé Sud or even other health regions. Lastly, although the perception of physicians in the implementation of virtual care is crucial, it is equally, if not more, important to have the patient's perspective. If the site, region, and province wish to continue providing people-centered primary care by virtual means, it will be important to listen to the patient voice.

Conclusion

Overall, the implementation of virtual care has had challenges and positives, and still a great deal of potential. Doctors who completed this survey overall feel as though it is a positive thing and that it can improve care not only in the sense of reduced exposure in the context of COVID-19 and patient convenience but also in the sense of time management. There are benefits specific to rural areas such as reduced travel in suboptimal conditions. However, the doctors made it clear that increased internet speed and cellular service will be needed in the area to remove access barriers. Additionally, the creation of a screening process (or categories) will be needed to properly know which patients will benefit from a virtual appointment vs. which will need to come in-person. This will reduce the amount of double bookings, leading to a more efficient use of limited physician time.

Virtual care will likely never be a one size fits all approach. Virtual care should never replace in-person care but rather be an additional tool that is available when appropriate. To be able to effectively implement high quality people-centred virtual care, considerations should be taken around equity of access and the recommendations mentioned above. Nonetheless, there will

always be importance in seeing someone in person to truly develop a relationship – which is what rural family medicine is all about.

References:

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Appendix A

1. What method(s) have you used to conduct virtual care visits? (Select all that apply)
   a) Telephone
   b) Personal video-conferencing (video based care to patients in their home)
   c) Video-conferencing to patients attending at a telehealth site
   d) E-mail or instant/text messaging
   e) Other (specify): _____
2. Rank the following virtual care method(s) from most beneficial (1) to least beneficial (4).
   a) Telephone
   b) Personal video-conferencing (video based care to patients in their home)
   c) Video-conferencing to patients attending at a telehealth site
   d) E-mail or instant/text messaging
   e) Other (specify): _____

3. Virtual care has been an easy adjustment since the onset of COVID-19.
   (1= strongly disagree, 2= disagree, 3 = nor agree nor disagree, 4= Agree, 5= strongly agree)

4. In your opinion, how appropriate is virtual care for the following types of interactions:

	Not at all appropriate				Very appropriate
Assessment of new patients (first time encounters)					
Assessment and diagnosis of new problems					
Chronic disease management					
Management of acute conditions					

5. How would you compare the overall quality of virtual care compared to in-person?
(1 = much worse, 2 = worse, 3 = same, 4 = better, 5 = much better)

6. By the end of a virtual appointment, I feel satisfied with the quality of the interaction
(1 = never, 2 = sometimes, 3 = usually, 4 = most times, 5 = always)
7. Rate your level of agreement for the following statements about **the benefits** of virtual care from 1-5
(1= strongly disagree, 2= disagree, 3 = nor agree nor disagree, 4= Agree, 5= strongly agree)
3a. More patients are showing up for virtual appointments compared to in-person.
3b. You have more time in the day/in between appointments compared to in-person.
3c. Better able to stay on schedule for appointments compared to in-person.
3d. More convenient for the physician compared to in-person.
3e. More convenient for patients compared to in-person.
3f. I am able to properly assess and address emotional cues virtually.
3g. The tone of the conversation and patient's voice give enough insight to properly assess the patient's current health status.
8. Rate your level of agreement for the following statements about **the challenges** of virtual care compared to in-person care: 1-5
(1= strongly disagree, 2= disagree, 3 = nor agree nor disagree, 4= Agree, 5= strongly agree)
4a. It is not appropriate for all patient needs.
4b. It is challenging to know which patients will have their needs met by a virtual appointment vs. which will require an in-person visit.

4c. Reaching patients virtually is challenging.
4d. The inability to take vitals at each appointment is an issue
4e. The quality of the virtual connection is inadequate (e.g., audio, video, receiving photos, etc.)

9. Are there virtual care advantages or disadvantages specific to rural areas?
10. What type of resources or supports (for you or the patients) would help you better provide virtual primary care in the future?

Appendix B

Table 1. Rank the following virtual care method(s) from most beneficial (1) to least beneficial (4).

	1	2	3	4	5	6	TOTAL	SCORE
Telephone	25.00% 1	50.00% 2	25.00% 1	0.00% 0	0.00% 0	0.00% 0	4	5.00
Personal video-conferencing (video based care to patients in their home)	75.00% 3	25.00% 1	0.00% 0	0.00% 0	0.00% 0	0.00% 0	4	5.75
Video-conferencing to patients attending at a telehealth site	0.00% 0	50.00% 1	50.00% 1	0.00% 0	0.00% 0	0.00% 0	2	4.50
E-mail	0.00% 0	0.00% 0	25.00% 1	25.00% 1	50.00% 2	0.00% 0	4	2.75
Instant/text messaging	0.00% 0	0.00% 0	0.00% 0	66.67% 2	33.33% 1	0.00% 0	3	2.67
Other	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 1	1	1.00

Table 2. In your opinion, how appropriate is virtual care for the following types of interactions:

	NOT AT ALL APPROPRIATE	NOT APPROPRIATE	NEUTRAL	APPROPRIATE	VERY APPROPRIATE	TOTAL
Assessment of new patients (first time encounters)	0.00% 0	20.00% 1	60.00% 3	20.00% 1	0.00% 0	5
Assessment and diagnosis of new problems	0.00% 0	20.00% 1	20.00% 1	60.00% 3	0.00% 0	5
Chronic disease management	0.00% 0	0.00% 0	0.00% 0	80.00% 4	20.00% 1	5
Management of acute conditions	0.00% 0	80.00% 4	0.00% 0	20.00% 1	0.00% 0	5

Table 3. Rate your level of agreement for the following statements about the benefits of virtual care from 1-5

	STRONGLY DISAGREE	DISAGREE	NOR AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL
More patients are showing up for virtual appointments compared to in-person.	0.00% 0	20.00% 1	40.00% 2	40.00% 2	0.00% 0	5
You have more time in the day/in between appointments compared to in-person.	0.00% 0	40.00% 2	20.00% 1	40.00% 2	0.00% 0	5
Better able to stay on schedule for appointments compared to in-person.	0.00% 0	0.00% 0	40.00% 2	60.00% 3	0.00% 0	5
More convenient for the physician compared to in-person.	20.00% 1	0.00% 0	60.00% 3	20.00% 1	0.00% 0	5
More convenient for patients compared to in-person.	20.00% 1	0.00% 0	0.00% 0	80.00% 4	0.00% 0	5
I am able to properly assess and address emotional cues virtually.	20.00% 1	60.00% 3	20.00% 1	0.00% 0	0.00% 0	5
The tone of the conversation and patient's voice give enough insight to properly assess the patient's current health status.	0.00% 0	80.00% 4	0.00% 0	20.00% 1	0.00% 0	5

Table 4. Rate your level of agreement for the following statements about the challenges of virtual care compared to in-person care: 1-5

	STRONGLY DISAGREE	DISAGREE	NOR AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL
It is not appropriate for all patient needs.	0.00% 0	0.00% 0	0.00% 0	60.00% 3	40.00% 2	5
It is challenging to know which patients will have their needs met by a virtual appointment vs. which will require an in-person visit.	0.00% 0	20.00% 1	0.00% 0	80.00% 4	0.00% 0	5
Reaching patients virtually is challenging.	0.00% 0	20.00% 1	20.00% 1	60.00% 3	0.00% 0	5
The inability to take vitals at each appointment is an issue.	0.00% 0	20.00% 1	20.00% 1	60.00% 3	0.00% 0	5
The quality of the virtual connection is inadequate (e.g., audio, video, receiving photos, etc.)	0.00% 0	40.00% 2	0.00% 0	40.00% 2	20.00% 1	5