Supplemental Appendix 1. Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	6
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	6
Occupation	3	What was their occupation at the time of the study?	6
Gender	4	Was the researcher male or female?	N/A
Experience and training	5	What experience or training did the researcher have?	6
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	7
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	7
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	6
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	7
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	6
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	6
Sample size	12	How many participants were in the study?	8
Non-participation	13	How many people refused to participate or dropped out? Reasons?	6
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	N/A
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	N/A
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	Table 2
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	6
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	N/A
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	6
Field notes	20	Were field notes made during and/or after the inter view or focus group?	N/A
Duration	21	What was the duration of the inter views or focus group?	6
Data saturation	22	Was data saturation discussed?	7
Transcripts returned	23	Were transcripts returned to participants for comment and/or	N/A

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	7
Description of the coding tree	25	Did authors provide a description of the coding tree?	7
Derivation of themes	26	Were themes identified in advance or derived from the data?	7
Software	27	What software, if applicable, was used to manage the data?	7
Participant checking	28	Did participants provide feedback on the findings?	N/A
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Appendix 4
Data and findings consistent	30	Was there consistency between the data presented and the findings?	9
Clarity of major themes	31	Were major themes clearly presented in the findings?	9
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	9-10

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Supplemental Appendix 2. Additional information regarding medical student volunteer program

A total of 49 medical student volunteers from McMaster University, University of Toronto, University of Western Ontario, and Northern Ontario School of Medicine participated in the intervention.

Medical students were onboarded, met with project coordinator, who introduced project goals and objectives. Medical students were then trained on understanding the concerns of those in the community through the Health Commons Solution Lab (a not-for-profit lab that addresses the root causes of health problems and design solutions that fit the local context: https://www.healthcommons.ca/). The training used an equitable approach to addressing diverse communities and showed experiential based examples from community ambassadors who had been engaged in similar strategies. They were taught strategies in building trust and vaccine confidence and were educated about the different types of vaccines, their development process and efficacy. Medical students were provided with a script and a list of common questions to address when contacting patients regarding COVID-19 vaccination. They were given the opportunity to role play and practice what they learned.

Medical students were then paired with family physicians. Our coordinator tried to match medical student volunteers with similar language and ethnic background to the patient population.

The medical student volunteer entered into a non-disclosure agreement to ensure the patient's privacy and confidentiality of vaccination status. The physician sent them a list of patients and delegated them to contact patients on their behalf. Volunteers documented all phone calls and their outcome.

Check in meetings with medical students were offered throughout the project.

Supplemental Appendix 3. Interview guides for physicians and practice facilitators

Interview guide for family physicians who received the intervention

Welcome

Thank you for agreeing to participate in a discussion about your experience with the Ontario Health Vaccine report and additional supports you may have received. I am *[Name, Credentials, Affiliation]*, together with our research partners at the Ontario Health, we are working to understand more about how to help family physicians with vaccine uptake among their patients.

Our discussion should take approximately 30-45 minutes and will be audio-recorded and transcribed. The transcription will be cleared of any identifying information. All of the transcripts will be de-identified so that your responses cannot be traced back to you, and the results will be published in aggregate form only. At any point during the interview, you may choose not to respond to a specific question. If you wish to end our discussion before I have asked all of the questions, or to withdraw from the study at any time during the interview, you are free to do so.

[OBTAIN VERBAL CONSENT TO CONTINUE]

Are you happy to proceed with the interview? *[Note: if no, do not proceed with interview]*

Do you have any questions before we start? *[RECORDING OF THE INTERVIEW WILL START NOW]*

General information/experience as a family physician

1. Can you tell me about your medical practice? (How long have been practicing? Can you describe your patient population?)

Enactment, receipt of intervention, adoption and effectiveness - Experience with OH intervention

2. You may have received a letter from Ontario Health telling you about a vaccine report you could receive to help you identify unvaccinated patients. Did you receive this letter?
    a. What did you do when you received it?
    b. Did you try to access your report? Why or why not?
        i. How did you find using it?
3. How did one of the OH practice facilitator get in touch with you?
    a. Was it through the fax? Phone? Secretary? Email?
4. Can you tell me about your decision to say “yes” and accept reports?
    a. What were you considering when you made this decision?

5. Can you walk me through your experience with connecting with a practice facilitator from OH?
    a. What type(s) of help did you receive?
    b. Which supports do you think were most helpful?
    c. Did your practice facilitator help you develop a plan?
    d. Did you feel the supports helped your patients get vaccinated?
6. Were there any additional support you would have wished to receive?
7. What do you think can help other family physicians in Ontario say yes to a program like this from Ontario Health?

<u>Vaccine Hesitancy Conversations</u>

8. I am wondering about those conversations with patients that were not vaccinated.
    a. What were these interactions like?
    b. Were patient's receptive to the conversation?
9. If they did choose to become vaccinated or boosted, what did you feel the reason they made this choice?
10. Can you tell me about relationships you have with your patients? Do you find that your relationships influence your recommendations with your patients?
11. What are some ways this group differs from your patients who easily decided to get vaccinated?
12. If you have reached out to patients, or delegated your staff to reach out to patients, were their successful at encouraging vaccination? Booking an appointment?
    a. Why do you think they were or were not successful?
13. Do you feel you have the *proper knowledge* to talk your patients?
    a. Did you feel equipped to talk about things outside of clinical information like vaccine development, research trials? Efficacy? Safety?
    b. How did you obtain this knowledge?
14. Do you feel you have *ability to carry out difficult conversations* regarding vaccine hesitancy? What do you find helpful in these situations?
15. Are there resources or knowledge you wished you had?
16. Is encouraging vaccine uptake part of your practice routine? Was there any action you had to take to make it part of this routine?

<u>Knowledge/Skills/ Social/Professional Role and Identity</u>

17. Do you feel that encouraging vaccine uptake among your patients is part of your role as a family doctor?
18. Is encouraging vaccine uptake among your patients important to you? How important?
    a. Do you think it is worthwhile endeavor?
    b. Is it important for Ontario?

19. Are there any lessons you have learned navigating vaccine uptake with your patients over the last year or so?
20. To the best of your knowledge, what role are your fellow family physicians playing in encouraging vaccine uptake?
21. If there is another wave of COVID, let's say next Fall, what do you envision **your** role in encouraging booster uptake then?
22. I am wondering, do you take a proactive approach to ensure your patients are fully vaccinated, for example, shingles or pneumococcal vaccine??

<u>Beliefs about Capabilities & Environmental Context and Resources /Memory, Attention and Decision processes/Self-Regulation</u>

23. In your view, how does a physicians responsibility to advise their patients regarding covid vaccines compare with other preventative care with your patients? For example breast or cervical cancer screening?
24. Do you use other data resources to identify overdue patients and then reach out to patients overdue for things like screening?
25. Is there any additional support you would find helpful for reaching out to these patients for preventative care?

<u>Maintenance</u>

26. Do you think there are other areas of medicine you would like to work with a practice facilitator?
    a. (If says yes) Why do you think these might be good areas? What help would you want (specifically)?
27. How do you feel about implementing some of the intervention components (i.e. medical student volunteers, robo calls, email templates) into your practice as part of regular care? For example other areas of preventive care, like cancer screening?
    a. Why or why not?
    b. Are their any priorities in patient care in your practice that you would like support with?
    c. Are there any aspects of you practice that you think influence your feelings about working with a practice facilitator?

Anything else that you wanted to say that you might have thought of as we have been speaking?

Those are all the questions I have for you. I appreciate the time and insight that you've given me today.

[STOP RECORDING NOW]

If you have the time, would it be alright to contact you for a follow-up chat if I have further questions? Thank you!

Interview guide for family physicians who did not receive the intervention

Welcome

Thank you for agreeing to participate in a discussion about your experience with the Ontario Health Vaccine report and additional supports you may have received. I am *[Name, Credentials, Affiliation]*, together with our research partners at the Ontario Health, we are working to understand more about how to help family physicians with vaccine uptake among their patients.

Our discussion should take approximately 30-45 minutes and will be audio-recorded and transcribed. The transcription will be cleared of any identifying information. All of the transcripts will be de-identified so that your responses cannot be traced back to you, and the results will be published in aggregate form only. At any point during the interview, you may choose not to respond to a specific question. If you wish to end our discussion before I have asked all of the questions, or to withdraw from the study at any time during the interview, you are free to do so.

[OBTAIN VERBAL CONSENT TO CONTINUE]

Are you happy to proceed with the interview? *[Note: if no, do not proceed with interview]*

Do you have any questions before we start? *[RECORDING OF THE INTERVIEW WILL START NOW]*

General information/experience

1. Can you tell me about your medical practice?
2. How long have been practicing?
3. In general, can you describe your patient population?

Decision not to participate

4. Can you tell me a bit about your decision not accept supports from one of our practice facilitators?
    a. What do you think contributed to this decision?
    b. Is there a situation you could envision where you would accept support from an outside source? What would the help look like? What would the help be for?

Ontario Health report

5. Did you know about the Ontario Health report you could access to receive a list of your unvaccinated patients? Did you receive it? Why or why not?

Knowledge/Skills/ Social/Professional Role and Identity

6. Do you feel you have the proper knowledge to talk your patients?
    a. Regarding vaccine development?
    b. Efficacy?
    c. Safety?
    d. How do you obtain this information? Where do you go to learn?
    e. Do you wish to learn more?
7. Do you feel you have ability to carry out difficult conversations regarding vaccine hesitancy?
8. Do you feel that encouraging vaccine uptake among your patients is part of your role as a family doctor?
9. Is encouraging vaccine uptake among your patients important to you?
    a. Do you think it is worthwhile endeavor?
    b. Is it important for Ontario?
    c. Is it important for your patients?

<u>Beliefs about Capabilities & Environmental Context and Resources /Memory, Attention and Decision processes/Self-Regulation</u>

10. Do you feel you have the support in your office help with vaccine uptake?
11. What would you require to help encourage vaccine uptake among your patients?
    a. Have you received help in any of these areas?
12. Is encouraging vaccine uptake part of your practice routine?
    a. In your view, how does it compare with other preventative care with your patients?
13. Do you use other data resources to identify and then reach out to patients overdue for things like screening?
14. Can you tell me about the relationships you have with your patients? Do you find that your relationships influence your recommendations with your patients?

<u>Beliefs about Consequences</u>

15. Have you made any attempts to reach out or talk to patients about their covid vaccine?
    a. If you have reached out to patients, or delegated your staff to reach out to patients, were their successful at encouraging vaccination? Booking an appointment?
    b. Why do you think they were or were not successful?
16. Can you tell me a bit about your conversations with vaccine hesitant patients?
    c. Do they often leave planning to book a vaccine?
    d. Are you able to help them book a vaccine?
    e. Do they go well?
    f. Is there anything you think that could help these conversations?

Social Influence

17. To the best of your knowledge, what role are your fellow family physicians playing in encouraging vaccine uptake?

Maintenance

18. Although you decided not to work the practice facilitator, do you think there are other areas of medicine you would like to work with a practice facilitator?
    g. (If says yes) Why do you think these might be good areas?
19. Are there any lessons you have learned navigating vaccine uptake with your patients over the last year or so?

Interview guide for practice facilitators

Welcome

Thank you for agreeing to participate in a discussion about your experience with the Ontario Health Vaccine report and additional supports you may have received. I am *[Name, Credentials, Affiliation]*, together with our research partners at the Ontario Health, we are working to understand more about how to help family physicians with vaccine uptake among their patients.

Our discussion should take approximately 30-45 minutes and will be audio-recorded and transcribed. The transcription will be cleared of any identifying information. All of the transcripts will be de-identified so that your responses cannot be traced back to you, and the results will be published in aggregate form only. At any point during the interview, you may choose not to respond to a specific question. If you wish to end our discussion before I have asked all of the questions, or to withdraw from the study at any time during the interview, you are free to do so.

[OBTAIN VERBAL CONSENT TO CONTINUE]

Are you happy to proceed with the interview? *[Note: if no, do not proceed with interview]*

Do you have any questions before we start? *[RECORDING OF THE INTERVIEW WILL START NOW]*

1. Can you tell me a bit about initial engagement with the physicians?
    a. What did you find worked well?
    b. What did not work well?
    c. What were the main **initial** barriers you identified?
    d. What were the main **initial** enablers you identified?
    e. What do you remember regarding their initial reactions?
2. When providing supports to the physicians:
    a. Can you tell me a bit about the medical school volunteer help? What worked well and what did not? How could this aspect of the intervention be improved?
    b. Can you tell me about the communication resources you offered physicians?
        i. Were they well received?
        ii. What worked well and what did not? How could this aspect of the intervention be improved?
    c. Can you tell me a bit about offering the communication tips and FAQ documents to the family physicians?
        i. Were they well received?
        ii. What worked well and what did not? How could this aspect of the intervention be improved?
3. Can you tell me about an encounter with a physician that went well?
    a. What do you think contributed to the facilitation going well?

4. Can you tell me about an encounter with a physician that did not go well?
    a. What do you think contributed the poor outcome of this engagement?
5. Can you tell me something unexpected that happened with physicians?
6. What do you know now - that you wished you had known at the beginning of working on this project?
7. Overall, what would you say were the main barriers you encountered with implementing the intervention?
    a. Were you able to identify any potential solutions to help with these barriers?
    b. Were you successful at implementing them?
    c. Were there any resources that you think would have helped?
8. Overall, what would you say were the main enablers you encountered with implementing the intervention?
9. Did you find the intervention effective?
    a. Which aspects did you find were the most successful and why do you think this might be?

Practice facilitator field notes template

A process evaluation describes a program's services, activities, policies, and procedures. It provides early feedback as to whether the program is being implemented as intended, what barriers have been encountered, and what changes are needed. Most importantly, it may reveal why outcomes were or were not achieved. These field notes will be used to qualitatively track your interaction with a physician/clinic/medical staff. Please see the following article for more details on writing field notes: https://libguides.usc.edu/writingguide/fieldnotes

Foster the practice of self-reflection. "record the behaviors, activities, events, and other features of an observation. Field notes are intended to be read by the researcher as evidence to produce meaning and an understanding of the culture, social situation, or phenomena on being studied."

Field notes consist of two parts:

1. Descriptive information, in which you attempt to accurately document factual data [e.g., date and time] along with the settings, actions, behaviors, and conversations that you observe; and,

2. Reflective information, in which you record your thoughts, ideas, questions, and concerns during the observation.

Please use the following prompts to guide your field notes:

What happened during this encounter?

How did you intend the encounter to occur and how did the encounter differ in actuality?

What barriers did you encounter during this interaction? What do you think can improve these barriers during your next interaction?

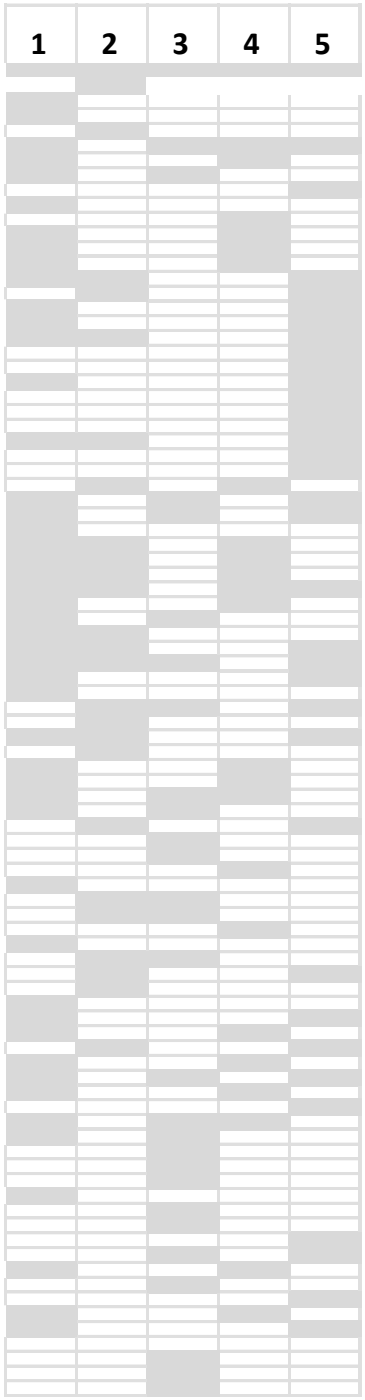
What are some assumptions you hold that were challenged during the encounter with this physician?

Did something unexpected that happened during the encounter?

Was there anything else that struck you as salient, interesting, illuminating, or important?

What was the level of relationship you had with this clinic? Was there a pre-existing relationship or was this the initial contact?

Supplemental Appendix 4. Intervention supports accepted by family physicians (N = 90)



1	Technical support
2	Written materials
3	Robocalls
4	Medical students
5	Communication templates

Supplemental Appendix 5. Code trail

Construct	Code	Exemplary Quote
Structural	Pandemic led to staff shortages, and physicians less often in office	"I'm talking from my position of being under-staffed right now [laughs]. I think that would be easier for a bigger group of physicians that have access to nurses and office assistants and things like that…I do not have the manpower to put a lot of hours into contacting and calling patients. But through the EMR and through this blast emails and more like technical communication type of thing, that's fairly easy and not time consuming." -Physician 13, Yes "End of December, for the entire month of January, we were down two to three staff a week, short two to three staff and it was just, honest to God, all we could do to stay afloat in terms of admin, in terms of just dealing with phone calls, we have seven lines and all seven lines were ringing off the hook all day long. And so, although it would have been really great and I would have loved to have benefited from it, just that step of giving you the list, I just couldn't do it" - Physician 6, No "I called the clinic back next week on December 7th, and got through to another clinic receptionist on the phone who said the doctor is not in the clinic and they are only doing phone appointments these days so it would be hard to reach the doctor if I emailed the clinic." – Practice Facilitator 1, Close-out notes
	Financial incentives value other activities greater than proactive patient outreach	"I think what happens is physicians, especially fee-for-service physicians any time out of their day is time not seeing patients and even this phone call I'm doing it in clinic hours. Now I am quite flexible with my schedule so I can do that, but I think fee-for-service doctors and FHO doctors might not want to take time out of their, you know, patient-facing time to talk about a program that may or may not be beneficial."- Physician 15, Yes

		"I think, one of the benefits in being a FOE is that I'm being renumerated by capitation, so I have X amount of dollars per year to manage my population health. I get, I don't know what, three bucks, 4.50 per visit in pocket, which is overhead and then I pay my staff from that. So, for me, it's not about chasing fee for service dollars, because that actually is not useful, but it's about keeping, using the FOE renumeration model to its maximum. Which is why I'm glad we switched into a FOE, because that actually clearly changes the way that we can practice medicine as a group. – Physician 6, No
Organizational – Primary Care Clinic	Clinic team (e.g., administrative staff) capacity and enthusiasm to engage in patient outreach	"Well this idea of having a medical student or whoever call patients is a great idea. Capacity wise, we're at our limit here. You know, we're full up day in and day out in the office here. The secretaries are constantly on the phone and booking patients and having patients coming in the front door. Our nursing staff – I mean we're short staffed, do we have the capacity to do this? It's tough. It's really tough. And in a busy office when you're trying to get people through to be able to spend time counselling on vaccinations and things like that, it does add to the time you spend with a patient, so it can be very difficult. It's still very important. But it is very difficult. And it's nice to have any sort of assistance to do that if available." -Physician 1, No "So I felt if they had more Human Resources support, or if everyone in the clinic was onboard, or at least a few of the people were onboard, it was a lot easier."- Practice Facilitator 1, Interview "So, my manager has a PhD background, he's very supportive of quality improvement innovation and basically, our kind of statement is to kind of give the best primary care experience in preventative care, so we both buy into the whole quadruple aim thing…we will actually actively identify people who are missing MMR and Adacel who need their HDL, LDL screening, who are diabetics and have not been, have not come in for a diabetic intervention in a while. So, this is something that our clinic has purposely decided to do and we actually use the power of EMR to run reports. And we have a bunch of admin staff, they're awesome, they buy into it, because

		they come from our community and they see the benefit of how it's, how we're doing stuff to improve their patient population health. "- Physician 6, No "[Admin staff] asked me more details about the vaccine project and mentioned she really hopes the physician agrees to it because she thinks it's important. She mentioned she would let the doctor know to give me a call and confirmed they have EMR Advantage as their EMR and do have a spreadsheet with patients' health card numbers and contact information for data linking."- Practice Facilitator 5 Close-out notes
	Technical ability (e.g., lack of ability to use technology) to engage in patient outreach	"So it doesn't integrate with my EMR, which is PS Suites. And so I wasn't able – like I could look at the COVaxON list but then I would have to go into the EMR, get the patient's demographic information, call them on the phone, go back to the COVaxON list, it was very cumbersome that way. - Physician 12, Yes "We don't have Excel, but we're using Zoom right now. So they can use Zoom with me. I don't think my staff would be able to do Zoom with them unless it's using my own personal device." Physician 3, No "Another barrier, is the tech support. When they did agree, and we had that [first] meeting, there was a lot that could go wrong. I know, we tried even during our training, we talked about how to make it efficient and respect the physician's time. But a lot of the times things did not go as planned. I had a lot of physicians that were locked out of their account and didn't remember their password. And they had to call the service desk, or some physicians weren't tech savvy at all. And even simple things, like opening a new tab was difficult. So, working through those tech issues, was definitely a barrier.."- Practice Facilitator 5, Close out notes
	Gatekeeping (e.g., front office staff	"I do remember being very surprised that you couldn't speak to the physician at all. So I just remember the gatekeeping was very strong. We would contact the receptionist and they would –

	prevented practice facilitator from speaking to physician)	right from the bat say, “OK. What’s this for? Call back next week. The physician is busy. We can’t book an appointment. You have to be a patient to book an appointment with the doctor.” So I just remember thinking, wow, it is so difficult to actually talk to the actual physician.” – Practice Facilitator 1, Interview “One barrier would definitely be I know, I talked about this a lot, I'm sorry, but getting through the gatekeepers, finding an efficient way to get our foot through the door and just speak directly to a physician. I know, for me, for a majority of the time that I actually got to have a phone conversation with a physician, it ended up being in a positive, positive way more often than not.”- Practice Facilitator 5 Interview “So you can see the hierarchy here going from the telephone system, working up to the physician. So there’s a receptionist then there are physician, so one is a single physician, the secretary’s assisting the physicians and then there’s the clinic manager looking after everything and then there’s the physician. So these are three or four layers before you could get to the physician…In many cases they wouldn’t even give the fax to them, if you were to repeat a fax or send a fax to them it would be reviewed by a clinic manager before it was sent to a physician. And the clinic manager was concerned why some of the physicians or why one of the physicians was selected and not others.”- Practice Facilitator 2 Interview
	Unclear decision-making authority (e.g., who is most suitable to approve intervention supports	“He said that he would be interested in sending out the robo calls to his patients. However, he said that I would need to speak to the executive director “SD” of the clinic. He said that they are a team of 7 family physicians and therefore, he cannot make the decision on his own.” Practice Facilitator 3, Close out notes

Patient	General resources and intervention materials not perceived as appropriate (e.g., Mennonite population, English is not the primary language)	"So, for example, if somebody from the government wanted to call patients and talk to them about it, I guess that could be possibility. But they have to speak Persian, because some of my patients don't speak English very well, which is the older ones" Physician 5, No "Yeah because even that's what we struggled with the Mennonite community was you know we didn't have volunteers from the Mennonite communities so there was very little support that I felt we could offer physicians who had a patient population of that community." – Practice Facilitator 3 Interview "For the information sheet, majority of them probably still in English so we were talking about we probably have enough, like I don't really think my patient had enough information regarding COVID-19 vaccine. The only thing is just they don't feel comfortable. So that's why I didn't use those [the information sheet] service. And because the medical student speak Chinese which is very comfortable for all the patients to talk to so very help practice facilitators." -Physician 10, Yes
	Belief that patients not yet vaccinated may not be influenced by physician recommendation	"It's a specific population. People who don't want to be vaccinated it's very hard to change their mind. It's very hard…It's not because people don't know vaccine. They actually, I think some of them, they knew more than family physician because they all the time were sitting and checking, sitting and checking about all the news." -Physician 9, Yes "There are certain people in the world who are always going to be like I'm going to stand on my soapbox and I'm go against. There was definitely, that was the sentiment. Like there were some people who were just like that and knew right from the gate that it was like yeah, I'm not going to waste my time on trying to change your mind because it's going to just leave us both frustrated." -Physician 8, Yes

	Concern that their patients may have many other higher priorities and pushing vaccines might interfere with ability to help in other ways	"We had a lot on our plate during this pandemic and, we are concerned about missing diagnosis because we don't really see the patient as well. It became quite overwhelming. " – Physician 2, No "I'm a very busy general practice, so I do everything else, and vaccines are not my only thing and COVID's not only thing. So, if I need it, I'll find it, but at the same time, I got to run a practice and a lot of older people with chronic conditions that I take care of, so I keep myself busy." – Physician 5, No "I don't know whether it's the biggest priority to be honest, like I think that there are other priorities that would be much higher. I think from a population point of view it's an important priority. But at our level, I think there's much more important resources like access to mental health services and combating climate change and that kind of thing. So yeah, I think that there are already a good amount of resources out there for vaccinations, especially in the education system. In terms of what would be more important, I would say adolescent mental health. So if I could choose between the two, I would rather have more resources to adolescent mental health than the vaccine uptake." – Physician 15, Yes
Physician	Frustrated since sidelined with vaccine rollout and therefore felt less responsibility for vaccine uptake among patients	"Public Health was not willing to give us vaccines at the beginning. It was clear that the pharmacies were getting vaccines but we were not. And we had to really beg to get vaccines and when we got the vaccines the restrictions and requirements for vaccines, I've only been here 10 years, but this practice has been there for probably 30 years. We know how to give vaccines and the restrictions for these vaccines were just phenomenal." - Physician 12, Yes

	Exhausted and overwhelmed due to pandemic	"And I put my heart and soul into it [laughs] until I got totally exhausted." -Physician 13, Yes "Any help is good help. When you're in a pandemic, none of us have ever gone through this before, and just the challenges, feeling overwhelmed, you know what's being asked of us as physicians to kind of serve our patients who are putting up barriers to getting these vaccinations when science is saying this is going to help right? - Physician 8, Yes "…I think we're just all tired. I took a five-day break, I didn't go away anywhere, I just caught up on my paperwork, that's not a break, right, and I think a lot of us are kind of, our brains are just at maximum and not really efficient for the most part. I think also, [name], I need to mention, is that physicians and healthcare workers are kind of like, we've been at this since March 2020 and it really doesn't feel like we've had a break…I think it's just this constant barrage of COVID and trying to deal with other people's health and catching up with their pap tests and catching up with everything that they need to catch up on and it's just a lot, it's just a lot, it's, yeah." Physician 6, No "So, it's really time constraints, emotional constraints, motivational constraints, I think it's really important…you see the devastating effects, the heartbreaking effects that COVID has had on a lot of people, it's heartbreaking. It's heartbreaking when you hear someone say, well my father was dying and I couldn't see him, because he had COVID and I couldn't talk to them, and I just, that's awful, right. And you know these people, so it's not that it's just someone who died, it's someone who has been in your practice and have an emotional connection to. And I think all of that made me feel stronger, that if this is something you can do to protect yourself, protect your family then do it and I don't understand why you're not doing it. So, there's some days where,

		yeah, I probably didn't have a great conversation, because I just heard about a patient who died and I'm angry and frustrated." Physician 6, No
	Does not want to force patients	**"**And she was like also the government should know when to step back. Those were her words. She was like the government needs to know that these people cannot be, like we cannot bother with them and the government needs to understand that this is a waste of time. And she was just really upset that we were pushing this so much in a way." -Practice Facilitator 6, Interview "Well, sometimes they would lead with, like they already came in with a chip on their shoulder and they were coming in to tell me why they're not going to get the vaccination, why they're frustrated with the pandemic and the healthcare system trying to force them with stuff they don't want to do…For those patients I usually would, I wouldn't be as aggressive because like well you've kind of made up your mind here. So you hear them out, you know and say I was there with you too you know but at the end of the day these are the choices that we're making and if you're willing to live with that then that's your prerogative right? There's only so much I can do, right? Physician 8, Yes
	Wary of long conversations regarding vaccines	"I think time is always the most important thing. I can't think of any other thing that would prevent us than not having the time to talk in length – at length about most patients about vaccines. Because there are other things that they want to address, as well." -Physician 2, No "Well again, time limitation. A proper explanation is minimum 15 minutes. And of course that's just not feasible. So I refer them to the Scarborough Health Network, where they can book an appointment to speak to somebody at length, to address all of their concerns." - Physician 3, No
	Substantial levels of technical ability and enthusiasm	"Yeah. I think the one thing that came to, that was really surprising was the variability and the kind of technology that people had. So some physicians would access their computers, their EMR's and everything from their own laptop sitting at home and they had access to everything

	needed to outweigh other barriers	while others were in the clinics and the computers were controlled, their computers had, they didn't have administrative privileges to make changes on the computers and they're working in a very, let's say restricted computing environment." - Practice facilitator 2 Interview – "It was pretty straightforward. You know it's a bit frustrating for me to see that I wasn't able to convince my patients to go [laughs] – but no, in terms of the technicality of it, it was straightforward. So you could access it and you could order them by age, date when the first dose, date of second dose, you know things like this. So it was a spreadsheet and it was easy to use." - Physician 13, Yes "I'm a little bit older than a lot of my younger colleagues who are probably much more proficient with computers and emails and can probably – will probably be easier to recruit in some of these programs. That's one of my hesitancies as far as using the programs is that I'm not very fast on a computer." Physician 2, No "So yeah, I wanted my patients to get either COVID vaccine or to see me so I can go through other immunization. I mean, it's not only COVID where you – for what you immunize your patients. I mean, of course, [immunization] made the biggest progress to humankind or mankind in the past 100 years. You know, if we didn't have vaccines the population of earth would not be seven to eight billion as it is now but it would be half." - Physician 14, Yes "Yeah. I mean I only spoke to one doctor at the start of the intervention and she, I think she may have been an anomaly, she was very motivated and very engaged. You know, really wanted to go above and beyond I think what even her role as a family doctor was. And she said she had already downloaded her e-report so I didn't have to work with her on that. She said that she was

		working or she was trying to work with the local public health unit. And she worked with Mennonite communities. So in the end the only support I could give her was the written materials and frequently asked questions. But she was very motivated, very engaged." - Practice Facilitator 3 Interview "It is very important to me and I sometimes take it as a failure if they don't proceed with that. But I've learned again that you cannot have – you know there's no such thing as perfection. But it's very important for me convince my patients that this is the right thing to do because I am convinced that it is." - Physician 13, Yes
Innovation	Practice facilitators reduce technical burden, where benefit was enhanced with in-person visit	"He was very knowledgeable, he was very direct, he worked hard to meet our needs without taking up a lot of time. He had solutions already ready when we first talked. …He has access to electronic technology that he was using and so he created this file that combined the information from my EMR and the information from the COVaxON report. And in addition to that, he had volunteers that were able to make the phone calls for us. So all he needed to know from us was when the patients could come and get vaccinated." - Physician 12, Yes "And then we set up appointment and then he came to my home and then he helped me to create a list. Excel format and then I subdivided my group and it was very helpful. So basically he helped me extra data and helped me to rearrange the patients." -Physician 9, Yes "In person experience worked really great for me. If it was for, I got a yes already like through the phone from the physician, and I was just going in person to complete the data linking and the, like access to the e-report, I think that worked really, really well especially for the physicians that were not tech savvy." Practice Facilitator 6, Interview

	Implementing the intervention increases burden on staff hindering uptake	"But I actually haven't looked at any of the other reports since then, it's just a lot of work, because you have to download the Excel, you have to create the Excel spreadsheet, download it and then somehow try to bring it into our EMR and then go through the list and reconcile the list. And it's just, it's a lot of extra work for our already overburdened admin staff and for my general manager, so it was great idea, just it was really hard to implement." - Physician 6, No "Well, after [practice facilitator] called me, I started calling my patients proactively but then it was so time consuming and as time passed, you know, I worked through COVID. I never went to call appointments only and I tried to see as many people in person as possible because I didn't want them to lapse on other parts of their care. So as I saw them for other reasons I tried to do as much education and most of the people don't come on their own, they come with other relatives, they have families." - Physician 14, Yes "We're all very overwhelmed a lot of times, so if something will make our job easier, well, nobody's going to say no. Obviously, if someone's going to give us a free service to help us practice better and, but we have to know exactly what they need. I know, there's a lot of government bureaucracy and a lot of red tape and a lot of things which I don't want my practice bogged down in that. But if it's something that's going to be really useful and fits the way, again everybody practices differently, so if it fits the way you run your practice and it's going to make it easier and it's going to be free, obviously you would do it, nobody will say, no. You just have to have a little bit more information first, of exactly what's going on, how much time it's going to take to set up, how much it's going to save your time, all that stuff." -Physician 5, No
	Medical students can help with patient outreach	"I had a very positive experience. A bunch of patients would call me and if they decided to call my office, if they decided to do the vaccine they probably still want to let me know they're doing it. And the other part is if they need more information, they will book appointment to see me … I personally find it very helpful and I have a really good feedback even for my own patient. They

	and offload burden on staff	really like them which is good…I was giving him the list and he can call the patient instead of our staff to call the patient which is very helpful. So the patient would come our office instead of us calling because, like you said, we are busy. So I find that's really helpful. Physician 10, Yes "I was so grateful for these medical students and I warned them ahead of time that it was going to be unpleasant and I did it anyway… I think no doubt some of the people that they talked to did schedule appointments. And so the fact that I was able to fill with a waiting list in December, fill with no problem in January and even continue to fill in February, I think that's a sign that the medical students were able to help us. I could not have had those clinics without the assistance of the medical student" - Physician 12, Yes