Practice Facilitation to Support Family Physicians in Encouraging COVID-19 Vaccine Uptake: A Multimethod Process Evaluation

Jennifer Shuldiner, PhD
Huda Shah, MSc
Stacey Bar-Ziv, PhD
Joe Mauti
David Kaplan, MD, MSc
Mina Tadrous, PharmD, PhD
Michael E. Green, MD
Isaac Bogoch, MD
Dominik Alex Nowak, MD
Kavita Mehta, BScN, MBA
Laura Desveaux, PhD
Lydia-Joi Marshall, MSc
Sophia Ikura, MPA
Monica Taljaard, PhD
Jia Hu, MD
Sabina Vohra-Miller, MSc
Justin Presseau, PhD
Holly Witteman, PhD
Aisha Lofters, MD, PhD
Tara Kiran, MD, MSc
Noah Ivers, MD, PhD

ABSTRACT

PURPOSE We offered a practice facilitation intervention to family physicians in Ontario, Canada, known to have large numbers of patients not yet vaccinated against coronavirus disease 2019 (COVID-19).

METHODS We conducted a multimethod process evaluation embedded within a randomized controlled trial (clinical trial #NCT05099497). We collected descriptive statistics regarding engagement and qualitative interview data from family physicians and practice facilitators, as well as data from facilitator field notes. We analyzed and triangulated the data using thematic analysis and mapped barriers to and enablers for implementation to structural, organizational, physician, and patient factors.

RESULTS Of the 300 approached, 90 family physicians (30%) accepted facilitation. Of these, 57% received technical support to identify unvaccinated patients, 29% used trained medical student volunteers to contact patients on their behalf, and 30% used automated calling to reach patients. Key factors affecting engagement with the intervention were staff shortages owing to COVID-19 (structural), clinic characteristics such as technical issues and gatekeeping by staff, which prevented facilitators from talking with physicians (organizational), burnout (physician), and specialized populations that required targeted resources (patient). The facilitator's ability to address technical issues and connect family physicians with medical students helped with engagement.

CONCLUSIONS Strategies to help underresourced family physicians serving high-needs populations for issues of public health importance, such as vaccine promotion, must acknowledge the scarcity of physicians' time and provide new resources. To successfully engage family physicians, practice facilitators should seek to build trust and relationships over time, including with front-office staff.

Ann Fam Med 2023;21:526-533. https://doi.org/10.1370/afm.3041

INTRODUCTION

Many Canadians consider family physicians to be their most trusted source of vaccine information,[1,2] underscoring the important role family doctors play in encouraging vaccine uptake, addressing hesitancies, and debunking misinformation.[2] However, to effectively carry out this work requires that physicians be able to identify unvaccinated patients, have the requisite communication skills, and have the capacity to engage in conversations that take time and might require multiple encounters.[3]

Although physicians might be aware of how to improve clinical care delivery, resource constraints owing to time, budgets, and staffing issues can act as barriers to implementing best practices.[4] Increasing organizational capacity via practice facilitation can be a viable solution to provide family physicians with support.[5] Practice facilitators use techniques to address gaps in care delivery.[6] Increasing quality improvement capacity can include connecting to outside resources, optimizing the use of electronic health records (EHRs), implementing evidence-based practices, and addressing barriers to improve processes.[5] These techniques can improve process flow at primary care clinics, preventive and chronic care, and staff satisfaction, ultimately resulting in better care for patients.[7-11] To maximize population health effects in a system, it is desirable to provide facilitation to those practices that need it most (rather than those with time and capacity to volunteer for such initiatives).

MORE ONLINE
www.annfammed.org

Conflicts of interest: authors report none.

CORRESPONDING AUTHOR

Jennifer Shuldiner
Women's College Hospital Institute for Health System Solutions and Virtual Care
76 Grenville St
Toronto, ON, CA
M5S 1B2647-472-0232
Jennifer.shuldiner@wchospital.ca

We performed a process evaluation embedded in a randomized controlled trial that used practice facilitators to help family physicians proactively engage with their unvaccinated patients (clinical trial #NCT05099497). Quantitative results of the randomized controlled trial will be reported elsewhere. We report here on the process evaluation, in which we aimed to understand what factors helped or hindered engagement with the intervention.

METHODS

Context

In Ontario, Canada, nearly all primary care is delivered by family physicians, and all physician encounters are covered by the tax-funded provincial health insurance plan without copay. Family physicians are paid via a range of models; some are entirely fee for service, and others are funded by capitation based on their roster size.[12]

As part of the coronavirus disease 2019 (COVID-19) pandemic response, family physicians in Ontario were able to switch from in-person to virtual encounters without change to their billings. Most COVID-19 vaccines in Ontario were delivered by public health entities, followed by pharmacies. Relatively few family physicians arranged to deliver these vaccines within their own office, with the overall proportion of vaccines delivered in primary care offices varying by Public Health Unit from 1% to 11%.[13] Many family physicians contributed to the pandemic response outside their office by, for instance, working in new vaccine or testing clinics.[13]

In July 2021, Ontario Health (a provincial health organization that coordinates and delivers health services in Ontario) started sending reports to Ontario family physicians via e-mail to help them identify patients who were not yet vaccinated. In August 2021, only 27% of family physicians had opened their report, suggesting a need for complementary interventions. During the time of the present intervention, the Omicron wave began, and local guidelines gradually recommended third doses of the vaccine. As of October 2021, 82% of Ontarians aged 12+ years received 2 COVID-19 doses.[14]

Study Design

This was an embedded, multimethod process evaluation using qualitative data collected from semistructured interviews and field notes of those involved in implementing the intervention. In the randomized control trial, we identified 600 Ontario family physicians with the greatest number of unvaccinated patients in their rosters and allocated one-half to receive the intervention (Figure 1). Because the intervention was delivered at the physician level, data were analyzed at the physician level. We used the COVaxON Vaccination Management System data set to identify vaccination rates within physician practices.

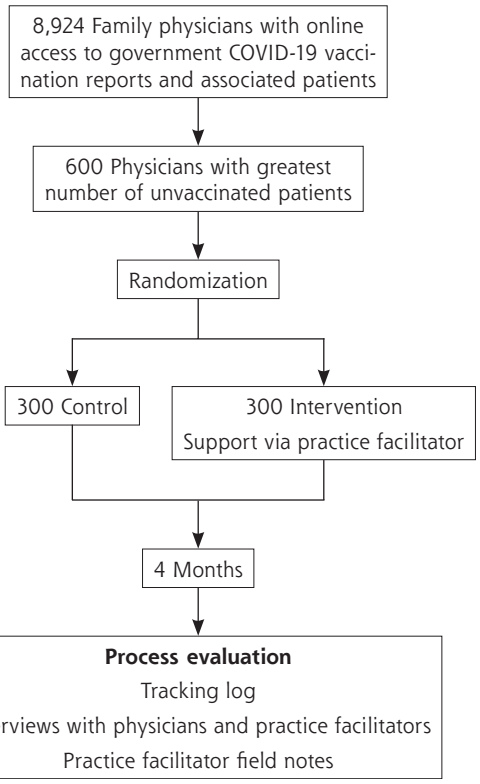
This study was approved by the Women's College Hospital Research Ethics Board (REB #2021-0082-E), which agreed that it met the principles for waiver of consent.[15] We reported according to the Consolidated Criteria for Reporting Qualitative Research, a 32-item checklist for reporting qualitative interviews (Supplemental Appendix 1).[16]

Intervention

In collaboration with Ontario Health, we implemented a practice facilitator program that had a single goal of supporting family physicians in encouraging COVID-19 vaccine uptake. Practice facilitators offered family physicians help to identify patients who were unvaccinated, resources to address COVID-19 vaccine hesitancy, materials for patient outreach (eg, scripts for office assistants or e-mail templates), and connection to trained medical student volunteers to work as physician delegates by conducting telephone outreach and motivational interviewing for patients. The practice facilitators offered a menu of resources and supports to all family physicians (Table 1; Supplemental Appendix 2 provides details on medical student volunteers). Intervention materials were codesigned with family physicians, the research team, and community ambassadors (lay health advisors) via workshops and interviews.

We trained a total of 6 practice facilitators to deliver a 4-month intervention, from November 2021 to March 2022,

Figure 1. Randomized controlled trial of a practice facilitator outreach program to support family physicians in encouraging COVID-19 vaccine uptake.



COVID-19 = coronavirus disease 2019.

Table 1. Resources and Supports Offered to Family Physicians in the Intervention Group by Practice Facilitators

Technical support (remote) to access government COVaxON Vaccination Management System and merge data with clinic electronic medical records
Written materials (e-mail) including scripts for administrative staff to call patients and e-mail templates for outreach campaign
Information on website that allows practices to access robocalling and suggested templates
Trained medical student volunteers to act as delegates to contact patients on physician's behalf (**Supplemental Appendix 2**)
Communication templates and resources, including FAQs, to address common questions and build vaccine confidence
Option to connect patients to trained community ambassadors (lay health advisors)

COVaxON = electronic documentation system used to document coronavirus disease 2019 (COVID-19) vaccinations in Ontario; FAQs = frequently asked questions.

for family physicians in Ontario. Practice facilitators were trained in practice facilitator techniques including modules on communication and recruitment skills via the Health Innovation Group (https://healthinnovationgroup.ca), primary care clinic management in Ontario (eg, workflow, operations, structure), COVID-19 myths and facts via research team members, and technical aspects of commonly used primary care electronic health record software (eg, Telus PSS [Telus Corp], Accuro [QHR Technologies, part of Loblaw Companies Ltd], OSCAR [McMaster University]) including how they can be linked to the Ontario Health report to identify patients who have not been vaccinated (supported by OntarioMD Inc).

All family physicians in the intervention group were contacted via fax by Ontario Health (if available) and telephone calls to their practice, in which practice facilitators asked the receptionist for a meeting with the family physician. Practice facilitators continued to contact clinics weekly via telephone, e-mail (if available), and/or fax.

Recruitment for Qualitative Interviews

Family Physicians

At the end of the intervention, all physicians in the intervention group and control group were invited by fax from the practice facilitators at Ontario Health to participate in a voluntary interview. In addition, practice facilitators personally invited all of the family physicians they worked with via fax, e-mail, and/or telephone. Physicians were offered a $150 honorarium for their time, and interviews took place via Zoom (Zoom Video Communications Inc). We were not able to capture reasons for nonparticipation. The researcher conducting the interview explained that researchers at Women's College Hospital wanted to understand their experiences with the supports they received via Ontario Health's practice facilitators or why they chose not to receive these supports. The research team ensured that both physicians who accepted and those who did not accept the intervention were interviewed by targeting repeat invitations. We were not able to track reasons for declining an interview if physicians did not respond to our invitation.

Practice Facilitators

Practice facilitators who delivered the intervention were interviewed after the intervention was completed.

Data Collection

Tracking Log

Data on intervention rollout was captured with a tracking log completed by the practice facilitators. The log included which supports were accepted, the timing and number of communication attempts, and durations of interactions with the clinic.

Family Physician Interviews

Family physicians' semistructured interviews were scheduled to be 45 minutes. The interview guide was developed by the study team and aimed to understand barriers and enablers of the intervention. Interviews were completed by PhD- and masters degree–trained study team researchers from Women's College Hospital (H.S. and J.S.) and were recorded and transcribed; interviews explored why family physicians did or did not engage in the vaccine uptake program and their experience with supports if they had worked with a practice facilitator (Supplemental Appendix 3). Interviewers did not know the physicians before the interview.

Practice Facilitator Interviews

Five practice facilitators completed 1-hour semistructured interviews to discuss their experiences, specifically exploring barriers and enablers to successful implementation (Supplemental Appendix 3). Interviews were completed by trained researchers from Women's College Hospital (H.S. and J.S.) and were recorded and transcribed.

Practice Facilitator Close-Out Notes

During the 4-month intervention, each practice facilitator kept detailed notes on their interactions with the primary care clinics and family physicians (Supplemental Appendix 3). These included notes on interactions with clinic staff and physicians and information regarding the physician's decision to accept or decline additional supports.

Data Analysis

Data from the tracking logs were summarized by describing the percentage of physicians that accepted supports. Time spent with each physician was summarized as a mean value, and the timing of accepting supports from the practice facilitator was described by month.

Family physician and practice facilitator interviews were transcribed by a third-party service. Data were analyzed using the following 6 phases of reflexive thematic analysis:

familiarization with the data, coding, generating initial themes, developing and reviewing themes, refining and defining themes, and write-up.[17] This allowed for broad substantive content, such as barriers and facilitators to implementation, to be captured. All interview transcripts were open coded independently by 2 team members (H.S. and J.S.). Subsequent levels of coding (ie, iterative and inductive) involved reexamining the content of the codes and narrowing in on more specific elements discovered in the data during coding. This method allows patterns and relations among the codes to emerge within the data set, leading to the development of the grouping of codes. Data analysis was carried out in parallel with data collection to continuously monitor emerging themes and identify areas for further exploration (ie, constant comparative method). The research team met throughout the process to review the codes and discuss emerging patterns and themes from all data sources. Data saturation was defined as no new information being revealed when codes are being repeated.[18] After the second round of independent coding and discussion, we determined that data saturation had been achieved.

Codes and themes from multiple data sources were considered together and triangulated to understand what factors helped or hindered engagement with the intervention. We mapped challenges to implementation of the intervention into structural, organizational, physician, and patient domains, as defined by Chaudoir et al's multilevel framework, which captures the predominant factors that affect implementation outcomes.[19] We mapped codes and themes generated in the analysis onto Chaudoir et al's framework and discussed among the study team until consensus was reached. The team also discussed barriers and enablers within each domain. Confirmability of the data was established by selecting and extracting participant quotes to provide context and support for each domain. Summary tables were created on the basis of identified and agreed-upon codes, their domains, and key quotes.

RESULTS

Intervention Engagement

Of the 300 physicians in the intervention group, 30% (n = 90) accepted supports from practice facilitators (Figure 2). One-fifth (21%) were categorized as "maybe" when the practice facilitators repeatedly called the clinics without receiving a firm response regarding their interest in accepting supports. A total of (48%) responded "no" to the offer of help immediately. Strong gatekeeping at clinics by front-office staff was perceived by facilitators to play a key role in both scenarios. Practice facilitators spent roughly 45 minutes with each primary care clinic that declined the intervention and 83 minutes with each clinic that did not confirm if they would like to enroll in the program. This time was spent being placed on hold and waiting in the queue to speak directly to someone from the clinic.

Each practice facilitator spent an average of approximately 130 minutes with each primary care clinic that accessed supports. Of those that engaged, the most requested support (57%) was technical support to help with integrating the list from the Ontario Health vaccine report into clinic EHRs (Figure 2). Additional resources for building vaccine confidence, such as frequently asked question sheets, were also often requested by physicians who accessed support (42%). Thirty percent requested information regarding how to send robocalls and templates for messaging, and 29% were matched with a medical student volunteer to act as a physician delegate and contact patients on their behalf. A small proportion (21%) used communication templates for either themselves or their staff to conduct proactive outreach. A breakdown of the different combinations of supports accepted is provided in Supplemental Appendix 4.

Engagement was similar in months 1 and 2 of the intervention and slowed in months 3 and 4 (Figure 3). The

Figure 2. Intervention engagement among family physicians (N = 300).

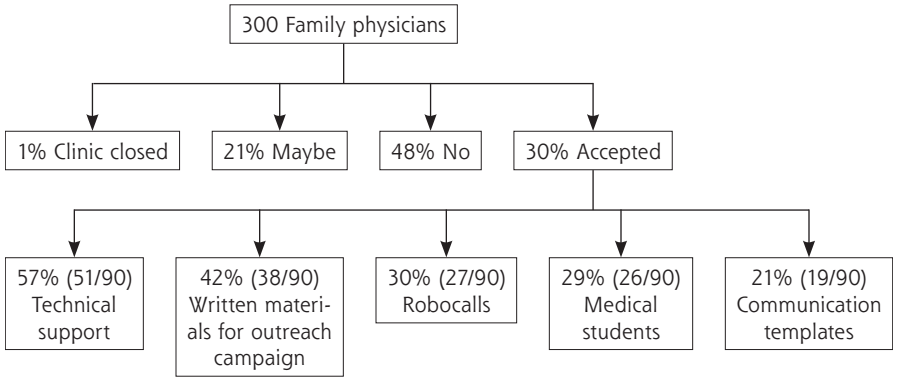


Figure 3. Timing of physicians' acceptance of practice facilitation, November 2021-March 2022 (N = 90).

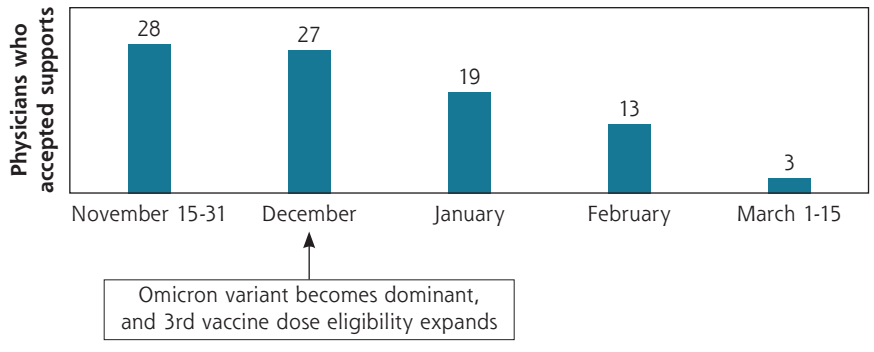


Table 2. Physicians Interviewed (n = 15)

Characteristic	No. (%)
Accepted intervention supports	
Yes	9 (60)
No	6 (40)
Gender	
Female	9 (60)
Male	6 (40)
Years practicing medicine, mean (SD)	21.7 (12)
Type of practice	
Fee for service	3 (20)
Family health team[a]	6 (40)
Family health group[b]	6 (40)
Practice location	
Urban	11 (73)
Rural	4 (27)

[a] A family health team is a group of health care providers working together to provide care. Physicians agree to provide a broad array of services, and they accept a blended model of funding including capitation, fees for services, and bonuses for achieving prevention targets.
[b] A family health group is a group of physicians responsible for a panel of patients and has relatively few interdisciplinary care clinicians. They are reimbursed on a fee-for-service basis with bonuses.

beginning of the Omicron wave in December encouraged engagement because the intervention offered supports to help physicians increase third COVID-19 doses for their patients.

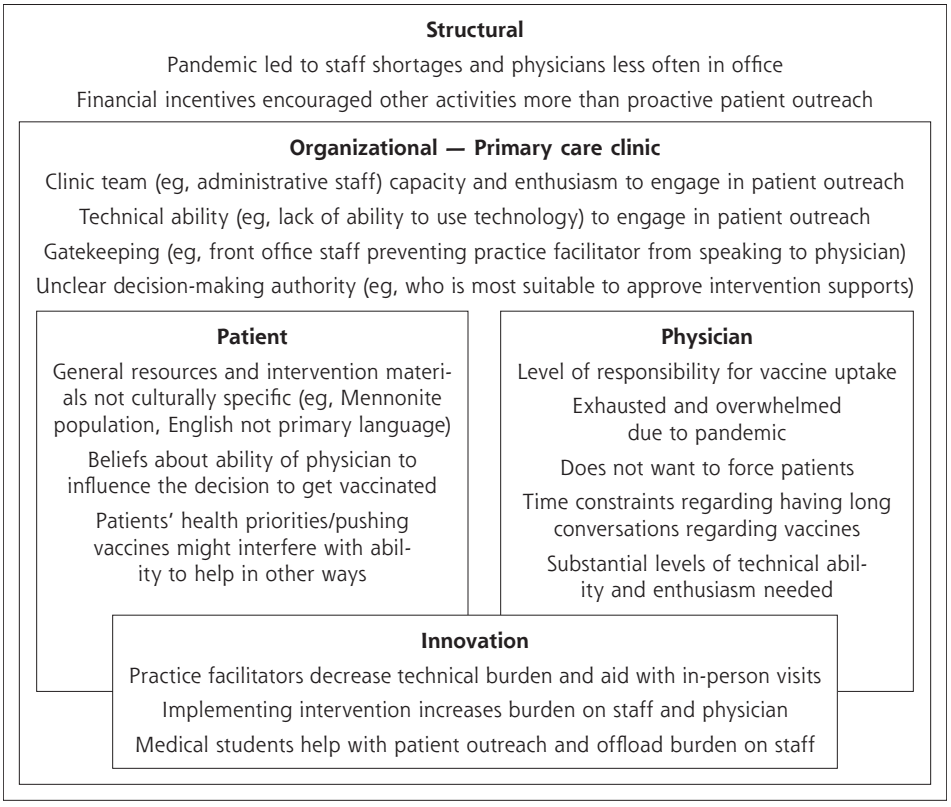
Barriers to and Enablers of Engagement

A total of 15 family physicians, 9 who accepted the intervention and 6 who did not, were interviewed (Table 2). Interviews were also conducted with 5 practice facilitators.

We mapped barriers and enablers identified from all data sources onto a multilevel framework (Figure 4). Structural-level factors included the social climate, for example the impact of the COVID-19 pandemic on primary care (eg, increased work, staff shortages, burnout). Organizational-level factors included clinic characteristics such as staff capacity, technical issues that can hinder engagement, and strong gatekeeping by front-office staff. Physician-level factors included attitudes of individuals toward the program, for example the physician being passionate about vaccine uptake or perceiving that intervention resources will be ineffective because patients have already made up their minds. A resounding theme from physician interviews was the overall feeling of burnout. Physicians emphasized that they were already working at full capacity and could not take on another additional task, even if it could be helpful. Patient-level factors included specialized populations that required a different approach and resources (ie, community engagement). Finally, innovation-level factors that facilitated engagement included practice facilitators' ability to help with technical issues and supporting physicians via medical student volunteers. A description of codes mapped to the framework and example quotes can be found in Supplemental Appendix 5.

In general, the most useful service provided by the facilitators was helping physicians identify patients not yet vaccinated (Table 3), overcoming a lack of local technical knowledge. Medical student volunteers were deemed a helpful resource because they could decrease the burden on office staff by contacting patients; however, some physicians found that the initial work of setting up the volunteers at the clinic was not feasible. In some instances, the students also shared a first language or cultural background with patients, enabling easier communication and potentially greater trust.

Figure 4. Factors affecting intervention engagement mapped onto multilevel framework.[a]



[a] Multilevel framework of Chaudoir et al.[19]

Physicians described automatic robocalls as easy to implement at clinics; however, their effectiveness could not be assessed, and some physicians were unwilling to implement robocalls because they were only offered in English. Information and tip sheets on how to address vaccine hesitancy were reported to be useful. Verbal or e-mail scripts to be used by clinic staff were only requested by a few physicians because these supports required additional time from the primary care clinic. Almost all of the physicians interviewed said they could see the benefit of receiving long-term support from practice facilitators, in various areas of primary care. Whereas some physicians requested additional supports for mental health, others wanted support for cancer screening, type 2 diabetes, or other chronic diseases. Additional details on feedback are listed in Table 3.

Strategies for Recruitment (Practice Facilitators)

As the intervention progressed, practice facilitators learned numerous techniques to improve intervention engagement including (1) positive relationship building with front-office staff, which allowed for securing an appointment or follow-up with the family physician, (2) establishing who is the clinic lead early on and contacting the physician via them, (3) emphasizing that the additional resources are not meant to be additional work for staff, (4) consistently following up with the clinic, (5) tailoring the resources to fit each clinic's specific needs, (6) emphasizing that Ontario Health is a government agency and the provincial impact of the program, and (7) providing physician testimonials to encourage program engagement. Using these methods helped to bypass gatekeeping from front-office staff and helped with uptake of intervention components.

DISCUSSION

Our findings describe the successes and challenges of an intervention in which practice facilitators reached out to family physicians, unsolicited, with the aim of helping family physicians proactively encourage COVID-19 vaccine uptake. The most important result was the limited engagement by family physicians with the offer of free supports. Engagement was hindered by a variety of factors. The main barriers to engagement were difficulty in reaching family physicians and the profound levels of burnout and lack of capacity of physicians and their clinics—made worse by the pressures of the pandemic. The main perceived benefit of practice facilitators related to technical support and access to health human resources (via medical student volunteers).

Major challenges perceived by practice facilitators in this study with successfully engaging family physicians has been observed other studies.[20] The practice facilitators had access to clinic telephone numbers, fax numbers, and clinic e-mails via publicly available websites but were often not able to access the physician directly. This, coupled with strong gatekeeping by front-office staff, resulted in delayed or sometimes no contact with the physician. This required practice facilitators to develop trust and build relationships with each primary care clinic to reach the physician. Identifying and engaging clinic managers or nurses was also important because they often play a crucial role in the decision whether to engage in quality improvement activities.[21] In addition,

Table 3. Feedback on Intervention Components

Medical student volunteer support	Physicians requested students with same language or culture as patient population
	Useful method to encourage vaccine uptake
	Increased follow-up from patients at clinic, owing to other issues brought up during check-in by student
	Students might not respond, delay calling patients, or decide to drop out of program
	Physician concerns for patient privacy
	Student help decreased burden on staff
	Students increase workload and therefore cannot accept
	Discontinued program because of too many patient follow-up calls as a result of student telephone calls
Robocalls	Do not require much additional work to implement
	Physicians unsure if they will help; however, there is a low cost to implement; therefore, they were willing
	Reminders might not be helpful for patients because vaccine uptake is a sensitive subject
	Hesitancy that patients might not respond well to calls from someone they do not know
	Important to offer in languages other than English
FAQ document for physicians	Some asked for FAQ documents, but limited feedback regarding if they used it or if it was helpful
	Some found FAQ document and hesitancy guide worthwhile to answer patient questions, but others felt not necessary
Verbal/e-mail scripts	Staff found e-mail templates useful
	No feedback on whether verbal scripts were used by clinic staff
	Physicians and staff asked for templates for mass e-mails to patients
	Clinic does not have e-mail contact information for all patients
IT support	Electronic reporting useful for identifying unvaccinated patients and for contacting patients, but practices needed support to access
	Requested long-term technical support from practice facilitators for other proactive preventive care

FAQ = frequently asked question; IT = information technology.

practice facilitators were trying to build trust and relationships in an almost exclusively virtual environment, which they found hindered their efforts. These difficulties could have been avoided with opt-in methods; however, often those who access supports are a self-selected group that is already more resourced. Physicians who chose not to accept supports described how a peer testimonial would have encouraged them to participate in the program. This feedback is in line with prior research that has outlined the importance of using champions in encouraging adherence to best practices[22] because family physicians are often distrustful of the benefit of new quality improvement strategies.[23]

Our results support the importance of tailoring resources specifically to each primary care clinic and monitoring changing clinic needs on an ongoing basis. Our team had some capability to tailor the intervention, for example by matching a medical student volunteer with similar language and ethnic background to the patient population. However, there were other times when a different type of support was warranted, for example more community engagement, or in-person support, and although the physician was willing to accept help from the practice facilitator, they were unable to meet the needs of the clinic.

Research has shown that practice facilitators can help adopt best practices at primary care clinics compared with those without practice facilitators,[8] specifically in areas such as chronic disease prevention[24,25] and mental health support.[23] Family physicians often lack the training, time, and resources to implement population-based care (eg, proactively contact patients). At the same time, practice facilitation can result in more tasks and responsibilities for family physicians and can contribute to a growing problem of work overload and burnout.[6,20,22,23] Physician burnout increased drastically during the pandemic, with a majority of physicians (73%) in Ontario reporting some level of burnout in 2021.[24] Therefore, when practice facilitators are supporting primary care, it is vital to ensure there is minimal increased workload for the physician and clinic staff, or the intervention is providing extra resources to complete tasks. Accordingly, the most popular supports used by physicians in our intervention were those that resulted in minimal extra work for clinic staff, such as robocalls or medical student volunteers. Notably, we were not able to measure the effectiveness of robocalls, and some physicians chose not to use this service because it was only available in English.

Several limitations should be considered when analyzing the results of the present study. Our intervention was offered to physicians with the greatest number of patients who did not have COVID-19 vaccines; therefore, the implementation of the intervention might have differed if it was offered to a different group of physicians. In addition, we only spoke to selected physicians, and those who did not respond could have had different perspectives. We were also unable to compare characteristics of physicians who did and did not accept supports from the practice facilitators. However, we were able to interview a number of physicians (6/15) who did not accept supports. Finally, this intervention supported physicians during an unprecedented public health crisis, and results need to be interpreted in this context.

Our results show the potential for using practice facilitators to help primary care practices with other areas of proactive preventive care (eg, catching up with missed vaccinations, cancer screening, chronic diseases, and other themes of public health importance). Practice facilitators can help physicians use their EHRs effectively and support proactive outreach. It will be important to ensure that the burden placed on physicians and their staff is minimal and that physicians might need additional health human resources to complete proactive engagement activities.

CONCLUSION

Practice facilitators can be a viable solution to facilitate access to external resources, provide support in optimizing the use of EHRs, and implement a population-based approach to care at family practices. Future interventions involving practice facilitators should ensure that practice facilitators offer supports that minimize workload for the physician or clinic staff and address individual concerns and needs of each clinic and community. Practice facilitators should have direct access to speak with family physicians and should seek to build trust and relationships over time, including with front-office staff.

Read or post commentaries in response to this article.

Key words: practice facilitation; vaccines; COVID-19; process evaluation

Author affiliations: Women's College Hospital Institute for Health System Solutions and Virtual Care, Toronto, Ontario, Canada (Shuldiner, Shah, Tradrous, Desveaux, Ivers); Ontario Health, Toronto, Ontario, Canada (Bar-Ziv, Mauti, Kaplan); Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario, Canada (Tradrous); Departments of Family Medicine and Public Health Sciences, Queen's University, Kingston, Ontario, Canada (Green); Department of Medicine, University of Toronto, Toronto General Hospital Research Institute, Toronto, Ontario, Canada (Bogoch); Department of Family and Community Medicine, University of Toronto, Toronto, Ontario, Canada (Nowak, Kiran, Ivers); Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada (Nowak, Vohra-Miller); Associations of Family Health Teams of Ontario, Toronto, Ontario, Canada (Mehta); Institute of Better Health, Trillium Health Partners (THP), Mississauga, Ontario, Canada (Desveaux); Institute for Health Policy Management and Evaluation, University of Toronto, Toronto, Ontario, Canada (Desveaux); Health Commons Solution Lab, Sinai Health System, Toronto, Ontario, Canada (Marshall, Ikura); School of Epidemiology and Public Health, University of Ottawa, Ottawa, Ontario, Canada (Taljaard); Clinical Epidemiology Program, Ottawa Hospital Research Institute, Ottawa, Ontario, Canada (Taljaard, Presseau); Alberta Health Services, Edmonton, Alberta, Canada (Hu); Department of Family and Emergency Medicine, Faculty of Medicine, Université Laval, Quebec City, Quebec, Canada (Witteman); Peter Gilgan Centre for Women's Cancers, Women's College Hospital, Toronto, Ontario, Canada (Lofters)

Submitted November 30, 2022; submitted, revised, June 9, 2023; accepted August 1, 2023.

Funding support: This work was supported by a Canadian Institute of Health Research Project Grant (#466754).

Previous presentation: North American Primary Care Research Group (NAPCRG) Annual Meeting; November 21, 2022; Phoenix, Arizona.

Supplemental materials

References

1. EKOS Research Associates. Survey of parents on key issues related to immunization; final report. Published Sep 2011. Accessed Aug 12, 2022. https://www.ekospolitics.com/articles/0719.pdf
2. Shen SC, Dubey V. Addressing vaccine hesitancy: clinical guidance for primary care physicians working with parents. *Can Fam Physician*. 2019;65(3):175-181.
3. Centers for Disease Control and Prevention. *Talking with Patients about COVID-19 Vaccination*. Published Nov 3, 2021. Accessed Sep 6, 2023. https://www.cdc.gov/vaccines/covid-19/hcp/engaging-patients.html
4. Rogers ES, Cuthel AM, Berry CA, Kaplan SA, Shelley DR. Clinician perspectives on the benefits of practice facilitation for small primary care practices. *Ann Fam Med*. 2019;17(Suppl 1):S17-S23. 10.1370/afm.2427
5. Agency for Healthcare Research and Quality. *Practice Facilitation*. Last updated Feb 2023. Accessed Sep 6, 2023. https://www.ahrq.gov/evidencenow/practice-facilitation/index.html
6. Nguyen AM, Cuthel A, Padgett DK, et al. How practice facilitation strategies differ by practice context. *J Gen Intern Med*. 2020;35(3):824-831. 10.1007/s11606-019-05350-7
7. Bach-Mortensen AM, Lange BCL, Montgomery P. Barriers and facilitators to implementing evidence-based interventions among third sector organisations: a systematic review. *Implement Sci*. 2018;13(1):103. 10.1186/s13012-018-0789-7
8. Baskerville NB, Liddy C, Hogg W. Systematic review and meta-analysis of practice facilitation within primary care settings. *Ann Fam Med*. 2012;10(1):63-74. 10.1370/afm.1312
9. Bastemeijer CM, Boosman H, van Ewijk H, Verweij LM, Voogt L, Hazelzet JA. Patient experiences: a systematic review of quality improvement interventions in a hospital setting. *Patient Relat Outcome Meas*. 2019;10:157-169. 10.2147/prom.S201737
10. Golda N. Setting our sights on the right target: how addressing physician burnout may be a solution for improved patient experience. *Clin Dermatol*. 2019;37(6):685-688. 10.1016/j.clindermatol.2019.07.022
11. Jamtvedt G, Flottorp S, Ivers N. Audit and feedback as a quality strategy. In: Busse R, Klazinga N, Panteli D, Quentin W, eds. *Improving Healthcare Quality in Europe: Characteristics, Effectiveness and Implementation of Different Strategies*. The Organisation for Economic Co-operation and Development and European Observatory on Health Systems and Policies (a Partnership Hosted by the World Health Organization). 2019:265-286. Accessed Sep 6, 2023. https://www.ncbi.nlm.nih.gov/books/NBK549284/
12. Ontario Ministry of Health and Ministry of Long-Term Care. *Primary Care Payment Models in Ontario*. Last updated Mar 26, 2020. Accessed Nov 7, 2022. https://www.health.gov.on.ca/en/pro/programs/pcpm/
13. Kiran T, Eissa A, Mangin D, et al on behalf of the Ontario COVID-19 Science Advisory Table. *Brief on Primary Care Part 1: The Roles of Primary Care Clinicians and Practices in the First Two Years of the COVID-19 Pandemic in Ontario*. Published Oct 3, 2022. Accessed Nov 7, 2022. https://covid19-sciencetable.ca/sciencebrief/brief-on-primary-care-part-1-the-roles-of-primary-care-clinicians-and-practices-in-the-first-two-years-of-the-covid-19-pandemic-in-ontario/
14. Barrett KA, Feldman J, Trent J, et al on behalf of the Ontario COVID-19 Science Advisory Table. *COVID-19 Vaccine Confidence in Ontario and Strategies to Support Capability, Opportunity, and Motivation Among at Risk Populations*. Published Oct 8, 2021. Accessed Nov 7, 2022. https://covid19-sciencetable.ca/sciencebrief/covid-19-vaccine-confidence-in-ontario-and-strategies-to-support-capability-opportunity-and-motivation-among-at-risk-populations/
15. Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada. *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*. 2018;Section 3.7. https://ethics.gc.ca/eng/policy-politique_tcps2-eptc2_2018.html
16. Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349-357. 10.1093/intqhc/mzm042
17. Braun V, Clarke V. *Thematic Analysis*. American Psychological Association; 2012.
18. Kerr C, Nixon A, Wild D. Assessing and demonstrating data saturation in qualitative inquiry supporting patient-reported outcomes research. *Expert Rev Pharmacoecon Outcomes Res*. 2010;10(3):269-281. 10.1586/erp.10.30
19. Chaudoir SR, Dugan AG, Barr CH. Measuring factors affecting implementation of health innovations: a systematic review of structural, organizational, provider, patient, and innovation level measures. *Implement Sci*. 2013;8:22. 10.1186/1748-5908-8-22
20. Liddy CE, Blazhko V, Dingwall M, Singh J, Hogg WE. Primary care quality improvement from a practice facilitator's perspective. *BMC Fam Pract*. 2014;15:23. 10.1186/1471-2296-15-23
21. Nguyen AM, Cuthel A, Padgett DK, et al. How practice facilitation strategies differ by practice context. *J Gen Intern Med*. 2020;35(3):824-831. 10.1007/s11606-019-05350-7
22. Hall AM, Flodgren GM, Richmond HL, et al. Champions for improved adherence to guidelines in long-term care homes: a systematic review. *Implement Sci Commun*. 2021;2(1):85. 10.1186/s43058-021-00185-y
23. Liddy C, Laferriere D, Baskerville B, Dahrouge S, Knox L, Hogg W. An overview of practice facilitation programs in Canada: current perspectives and future directions. *Healthc Policy*. 2013;8(3):58-67.
24. Gajjar J, Pullen N, Li Y, Weir S, Wright JG. Impact of the COVID-19 pandemic upon self-reported physician burnout in Ontario, Canada: evidence from a repeated cross-sectional survey. *BMJ Open*. 2022;2(9):e060138. 10.1136/bmjopen-2021-060138