Investigating Patient Experience, Satisfaction, and Trust in an Integrated Virtual Care (IVC) Model: A Cross-Sectional Survey

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ABSTRACT

To improve access to primary care in underserved communities, we established a hybrid model of delivering team-based, comprehensive primary care using both in-person and virtual care options with family physician leadership. Using a cross-sectional online survey (n = 121), results showed high levels (90%) of patient satisfaction. Our findings suggest that a similar hybrid model for primary care delivery can provide levels of patient satisfaction comparable to traditional in-person models of primary care. This can be achieved regardless of whether patients had previously been attached to the same family physician before receiving care through the hybrid model.

Ann Fam Med 2023;21:online. https://doi.org/10.1370/afm.2978

Annals "Online First" article

INTRODUCTION

Health care systems worldwide have struggled to provide access to and continuity of primary care, particularly in rural and remote communities.[1] In rural Renfrew County, Ontario, roughly 20% of the population does not have a family physician.[2] To increase access to care in underserved, rural Renfrew County, we established a model of team-based, comprehensive primary care with family physician leadership. We utilize a hybrid of in-person and virtual care options from a patient's home and in a local clinic. In this integrated virtual care (IVC) model, patients enroll with a named family physician who delivers care predominantly by virtual means. Virtual care includes secure messaging, telephone, video, and enhanced video through telemedicine arrangements in-clinic, assisted by allied health professionals and digital equipment such as Bluetooth (Bluetooth SIC Inc) otoscopes and stethoscopes. In-person options are provided by physicians, nurse practitioners, community paramedics, and other allied health professionals within the local family health team. This hybrid model provides personalized care to previously unattached patients, meaning those who are not enrolled with and may not have access to a family physician or alternative primary care practitioner. Their new IVC family physician always retains overall responsibility for coordinating their care.

Previous studies have shown consistently high levels of patient satisfaction in the virtual setting.[3-6] Many of these patients, however, were attached to their family physician before shifting virtually, possibly contributing to higher patient satisfaction.[3,4,7]

The objective of this study was to evaluate the overall experience, satisfaction, and trust of patients receiving comprehensive primary care through IVC. A secondary objective was to determine if a difference exists between patients who were previously attached to their family physician before shifting to IVC, and those who met their family physician for the first time in a virtual setting.

METHODS

An anonymous, cross-sectional, Likert scale satisfaction survey was developed by experienced researchers of the IVC team, using questions adapted from previously validated surveys.[3-8] Elements of the survey included (1) experience with family physician and allied health team, (2) trust in family physician, (3) primary care with IVC vs prior in-person care, (4) demographics, and (5) feedback. Responses were scored on a 4-point Likert scale, with higher scores indicating greater patient satisfaction or greater trust in their physician.

Conflicts of interest: authors report none.

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The survey was administered electronically to IVC patients aged >18 years in underserved Renfrew County, Ontario. Patients were split into 2 analysis groups: Group A included patients who were previously attached to the same family physician before shifting to IVC, and Groups B and C included patients who were meeting their family physician for the first time virtually.

To determine differences between groups, Brown-Forsythe, Welch ANOVA, and Tukey Honest Significant Difference (HSD) were conducted using corresponding numerical values of each Likert option.[9] Feedback open-text responses were analyzed using thematic analysis. Demographic variables were analyzed with frequency and Pearson's regression analyses.

RESULTS

The survey response rate was 50%, providing 121 eligible responses. Most of the patient population was White (99.2%), aged >55 years old (81%), identified as female (52.5%), and listed college or trade school as their highest level of completed education (44.6%). Of the demographic variables, only "self-perceived health" was significantly correlated with overall satisfaction of IVC ($\beta = 0.257$, $P < 0.05$; $r2 = 0.245$). Demographic characteristics are summarized in Supplemental Table 1.

Across all groups, 90% of patients were very satisfied or satisfied with care from their family physician, and 89% with care from their allied health team. When comparing previous health care experiences, 75% of respondents believe that their encounters with IVC were better than or the same as any prior, in-person health care encounters.

The results of patients' experience with their family physician and allied health team, and trust in their family physician are shown in Table 1.

Thematic analysis of open text responses (n = 66) identified 2 main themes: (1) Increased video encounters and (2) Scheduled, yearly in-person appointments. See the Supplemental Appendix for figures detailing the above results.

DISCUSSION

The results of this study show high levels of both patient experience and trust in their family physician across all patient groups accessing care through IVC. Notably, patient experience was not influenced by forming pre-existing relationships with family physicians before moving virtually. This result is promising for the future of IVC and other hybrid models delivering comprehensive primary care where patients are meeting their named family physician for the first time virtually.

Analysis of demographic variables showed a significant positive correlation only between self-perceived health and patient experience; however, the effect size was small. Notably, most patients described their health as "average," which is lower than in previous literature and possibly negatively impacted satisfaction results.[5,6]

Some limitations of this study should be considered. Generalization to other populations may be hindered by our smaller sample size (n = 121), small geographic area, and homogeneity of demographic variables. Furthermore, the cross-sectional nature of the study cannot show causality or change over time.

Integrated virtual care must be evaluated over time using all 4 dimensions of the internationally recognized Quadruple Aim framework.[10] Further study is planned to evaluate provider experience, clinical outcomes, and cost-effectiveness of the hybrid model, in addition to ongoing evaluation of the experience of previously unattached patients receiving care through IVC over time.

Our findings suggest that a hybrid model of in-person and virtual care options to deliver team-based, comprehensive primary care with family physician leadership can provide a high level of patient experience and satisfaction, at least comparable to traditional in-person models of primary care. This can be achieved regardless of whether patients had previously been attached to the same family physician before receiving care through the hybrid model.

Table 1. ANOVA Analysis Results

Measure	Group A[a] (n = 22)		Group B[b] (n = 48)		Group C[c] (n = 51)		df	F Value	P Value
	Mean	SD	Mean	SD	Mean	SD			
Experience with IVC family physician	3.18	0.41	3.43	0.71	3.35	0.85	2, 118	0.868	0.422
Trust in IVC family physician	3.04	0.45	2.94	0.68	2.93	0.91	2, 77	1.587	0.211
Measure	**Group A (n = 11)**		**Group B (n = 29)**		**Group C (n = 29)**				
	Mean	SD	Mean	SD	Mean	SD			
Experience with IVC allied health team	3.23	0.62	3.04	0.79	3.17	0.69	2, 66	0.359	0.700

df = degrees of freedom; IVC = integrated virtual care.

[a] Group A includes patients previously attached to the same family physician before both shifting to IVC.
[b] Group B includes patients who are meeting their family physician for the first time through IVC and have only had 1 IVC physician.
[c] Group C includes patients who are meeting their family physician for the first time through IVC and have had more than 1 IVC physician.

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Key words: primary care; telehealth; telemedicine, rural health care, integrated virtual care; quality improvement; quality of care; practice-based research; clinical quality measures; quadruple aim

Submitted June 1, 2022; submitted, revised, January 13, 2023; accepted January 18, 2023.

Funding support: This work was supported by the University of Ottawa Faculty of Medicine and University of Ottawa Department of Family Medicine

Disclaimer: The views expressed are solely those of the authors and do not necessarily represent official views of the authors' affiliated institutions or funder.

Previous presentations: Preliminary results of this work were presented at the University of Ottawa Faculty of Medicine Virtual Research Day; September 24, 2021; Ottawa, Ontario, Canada (virtual)

Acknowledgments: We would like to thank Lisa Hawkins, BA, for help with survey organization and administration, and Emma Sypes, MSc, and Kush Patel, BASc, for their contributions to the project.

Supplemental materials

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