Title: Evaluating the Use and Impact of Hybrid Approaches in Primary Care: A Scoping Review Protocol

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Abstract

Background: Hybrid approaches to primary care, which integrate in-person and virtual modalities within coordinated models of care, have expanded rapidly since the COVID-19 pandemic. However, evidence on their use, implementation, and impact remains diverse and unevenly synthesized.

Objective: This scoping review will map the literature on the use and impact of hybrid approaches in primary care and examine reported outcomes across the Quintuple Aim Framework, with environmental impact considered as an additional domain.

Methods: The review will follow established scoping review methodology and will be conducted in collaboration with a health sciences librarian at the University of Ottawa. Searches will be conducted in PubMed/MEDLINE, Scopus, Web of Science, CINAHL, and Embase, supplemented by grey literature and hand-searching. Eligible sources will describe or evaluate hybrid approaches to primary care or urgent care published in English or French from 2020 onward. Screening and data extraction will be conducted by two reviewers using Covidence, with discrepancies resolved through discussion or by a third reviewer.

Conclusion: Findings will clarify how hybrid primary care approaches are defined, implemented, and evaluated, and will identify gaps to inform future research, policy, and practice.

Keywords: primary care; rural medicine; hybrid care; virtual care; scoping review

Introduction

Over the past decade, and particularly following the COVID-19 pandemic, primary care systems have increasingly adopted hybrid approaches that intentionally combine in-person services with virtual care options such as telephone, video, secure messaging, remote monitoring, and digital intake or triage tools. Despite their widespread implementation, existing literature has largely examined virtual care or telemedicine in isolation, and fewer syntheses have focused specifically on hybrid approaches to primary care, which differ fundamentally by integrating in-person and virtual services in a coordinated and complementary manner.[1–3]

We define a hybrid approach to primary care as the deliberate integration of in-person and virtual care modalities within a primary care or low-acuity care context. Hybrid approaches are typically used to support timely access, continuity of care, workforce optimization, and improved access for underserved communities.

Given the heterogeneity of hybrid approaches to primary care and the rapidly evolving evidence base, a scoping review is warranted to map the existing literature, clarify key concepts, and identify gaps for future research. This scoping review will map the evidence regarding the use and impact of hybrid approaches to primary care across the Quintuple Aim Framework.[4–6]

Specifically, this review will address four questions: (1) How are hybrid approaches to primary care defined and described in the literature? (2) In what settings and populations have they been implemented, and which modalities and configurations are used? (3) What outcomes have been reported, and how do these map onto the domains of the Quintuple Aim Framework and environmental impact? (4) What gaps remain in the current evidence base?

Methods

Study design

This scoping review will follow the five-stage methodological framework proposed by Arksey and O'Malley and further refined by Levac et al.[7,8] The review will be conducted through the following stages: identifying the research question; identifying relevant studies; selecting studies; charting the data; collating, summarizing, and reporting the results; and, where appropriate, consulting knowledge users to enhance interpretation and applicability of findings.

The review will use the Quintuple Aim Framework to assess the overall impact of hybrid approaches to primary care on patient experience, provider experience, clinical outcomes, healthcare costs, and health equity.[4–6] Studies that assess environmental impacts will also be included, consistent with recent calls to consider sustainability as an additional dimension of healthcare system performance. The review will be reported in accordance with the PRISMA extension for Scoping Reviews (PRISMA-ScR).[9]

Search strategy

An initial exploratory search will be conducted to refine key concepts, identify relevant terminology, and test the sensitivity of proposed search terms. Preliminary terms will include "*hybrid care*", "*in-person and virtual care*", "*multimodal care*", "*integrated virtual care*", "*primary care*", "*family medicine*", and

"*general practice*". Search terms will be iteratively refined in consultation with a University of Ottawa health sciences librarian.

The full search strategy will then be developed with the librarian and adapted for each database using database-specific controlled vocabulary and keywords. Electronic database searches will be conducted in PubMed/MEDLINE, Scopus, Web of Science, CINAHL, and Embase. The final search strategy will combine terms related to primary care and hybrid approaches using appropriate Boolean operators and controlled vocabulary where available. Searches will be run between March and April 2026.

Grey literature searches will include targeted organizational websites and conference sources relevant to primary care, virtual care, and health system innovation. Reference lists of included studies and relevant reviews will be hand-searched to identify additional eligible sources.

Table 1. Sample keywords related to provider type and care modality.

Provider Type	**Care Modality**
• Family Doctor [Title/Abstract] OR • Family Medicine [Title/Abstract] OR • General Practice [Title/Abstract] OR • General Practitioner [Title/Abstract] OR • Primary Care Provider [Title/Abstract] OR • Primary Care Physician [Title/Abstract] OR • Primary Health Care [Title/Abstract] OR GP [Title/Abstract]	• Hybrid Care [Title/Abstract] OR • Hybrid Health Care [Title/Abstract] OR • Hybrid Model [Title/Abstract] OR • Hybrid Approach [Title/Abstract] OR • Blended Care [Title/Abstract] OR • Multimodal Care [Title/Abstract] OR • Integrated Care [Title/Abstract] OR • Integrated Telehealth [Title/Abstract] OR • Virtual Care [Title/Abstract] OR • Telemedicine [Title/Abstract] OR • Telehealth [Title/Abstract] OR • Remote Consultation [Title/Abstract] OR Digital Health [Title/Abstract]

Note. The search strategy will be adapted as appropriate for each database.

Inclusion and exclusion criteria

Studies will be eligible for inclusion if they describe or evaluate a hybrid approach to primary care or urgent care, defined as the intentional integration of in-person and virtual care modalities within a primary care or low-acuity context. Eligible studies may be conducted in any country, without restriction on population characteristics. We will include publications in English or French published from 2020 onward, reflecting the period during which hybrid models expanded substantially in response to pandemic-related service redesign and subsequent health system recovery.

Both peer-reviewed literature (including qualitative, quantitative, mixed-methods studies, and reviews) and relevant grey literature will be considered, such as conference abstracts from major primary care conferences (e.g., NAPCRG, FMF, WONCA) and reports from governmental or organizational sources (e.g., WHO, World Bank, Healthcare Excellence Canada).

Table 2. Grey literature sources.

Source Type	Specific Sources/Strategy
Primary care research conferences	Conference abstracts from: North American Primary Care Research Group (NAPCRG), College of Family Physicians of Canada (CFPC), Family Medicine Forum (FMF), World Organization of Family Doctors (WONCA)
International organizations	Relevant reports from World Health Organization (WHO), Organisation for Economic Co-operation and Development (OECD), Commonwealth Fund, World Bank, Agency for Healthcare Research and Quality (AHRQ)
Targeted organizational websites (primary care innovation; Canada-centric)	Grey literature from organizations involved in primary care transformation and virtual care in Canada: Healthcare Excellence Canada, Canada Health Infoway, Canadian Medical Association, College of Family Physicians of Canada

Studies will be excluded if care is delivered exclusively through virtual modalities or exclusively through in-person services, without a deliberate integration between modalities. Interventions focused solely on specialist, hospital-based, or emergency/high-acuity care will also be excluded. Editorials, commentaries, and opinion pieces will be excluded unless they provide substantive descriptive detail about an implemented hybrid primary care model. Publications in languages other than English or French will also be excluded.

Table 3. Inclusion and Exclusion Criteria.

Inclusion Criteria	Exclusion Criteria
• Studies describing or evaluating a hybrid approach to primary care or urgent care • Approaches implemented within a primary care context in any country • French or English language • From 2020 onward • Peer-reviewed research and relevant grey literature	• Care that is exclusively virtual or exclusively in-person • Interventions focused solely on specialist or hospital-based care • Interventions focused on high-acuity or emergency care • Editorials, commentaries, and opinion pieces • Publications in languages other than English or French

Study selection and data extraction

All references will be imported into Covidence for deduplication and screening. Two reviewers will independently screen titles and abstracts against the eligibility criteria. Potentially eligible records will then undergo full-text review by two reviewers. Disagreements at either stage will be resolved through discussion; if consensus cannot be reached, a third reviewer will adjudicate. Reasons for exclusion at the full-text stage will be documented and reported in the final review.

Data will be extracted using a standardized charting form developed by the research team and pilot-tested prior to full extraction. Extracted information will include study characteristics (author, year, country, and design), description of the hybrid approach to primary care (context, target population, and modalities), and reported outcomes and key findings mapped to the Quintuple Aim Framework, with environmental impact captured as an additional domain.

Findings will be synthesized using a narrative and thematic approach to map the range of hybrid approaches to primary care, summarize reported impacts, identify key contextual factors, and

highlight gaps for future research. Results will be presented using tables, figures, narrative summaries, and a PRISMA flow diagram in the final review.

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