Giroux, C. M., Contandriopoulos, D., Bussières, A., Ahmed, S., Letts, L., Boruff, J., Starr, L., & Thomas, A. (2025). Addressing Changing Healthcare Needs: A Realist-Inspired Review of Innovative Rehabilitation Care Models. Journal of Evaluation in Clinical Practice, 31(4), Article e70144.

Journal of Evaluation in Clinical Practice

WILEY

Journal of Evaluation in Clinical Practice
International Journal of Public Health Policy and Health Services Research

REVIEW ARTICLE OPEN ACCESS

Addressing Changing Healthcare Needs: A Realist-Inspired Review of Innovative Rehabilitation Care Models

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Received: 16 December 2024 | **Revised:** 25 April 2025 | **Accepted:** 6 May 2025

Funding: The authors received no specific funding for this work.

Keywords: implementation | models of care | realist review | rehabilitation | sustainability

ABSTRACT

Rationale/Objectives: Canadian healthcare is facing an aging population, an increasing prevalence of chronic disease and related disability, and rising healthcare costs. Integrating innovative rehabilitation models of care may help bolster health systems by shifting to a longer-term approach to addressing health and wellbeing. However, little is known about how these care models may look and what is needed to ensure their effective operationalization in practice.

Methods: This realist-inspired narrative review explored how, when, and in what circumstances innovative models of care have been successfully implemented and sustained in rehabilitation. The peer-reviewed and grey literature was searched and subsequently screened by title, abstract, and full text. Data extracted from included articles focused on identifying contexts, mechanisms, and outcomes. A numerical analysis of quantitative data and a conventional content analysis of qualitative abstractions was conducted.

Results: Twenty-six documents published between 2014 and 2021 were uncovered predominantly from Australia and Canada. Overall, for new care models to be successfully implemented and sustained, they need to: (1) have clearly articulated goals, (2) have access to short- and long-term funding, (3) align with key legislative changes to optimise buy-in, (4) take a multi-disciplinary approach that is supported by management, and (5) include educational and outreach strategies that can be implemented amongst all interested parties.

Conclusions: The heterogeneity of studies and limitations in their reporting precluded the identification of context-mechanism-outcome configurations typically found in realist reviews. Future implementation research should draw on relevant reporting guidelines to report their findings.

https://doi.org/10.1111/jep.70144

1 | Introduction

Healthcare in Canada is facing an unprecedented crisis due in part to an aging population, an increasing prevalence of chronic illness and related disability, and rising healthcare costs [1–3]. Compounding these existing issues, the Covid-19 pandemic has resulted in the massive loss of workforce in critical health sectors, like emergency and family medicine [4, 5]. The pandemic also highlighted the pervasive inequalities faced by historically marginalised and structurally vulnerable populations (e.g., Indigenous Peoples, LGBTQ2AI+ populations, those living in rural or remote locations, or those with food/housing insecurity) in accessing care [6]. The Canadian healthcare systems' funding model, designed in the 1960s, was originally conceived to support hospital-based infrastructure and physician services [7–9]; no provisions existed to pay for nonhospital infrastructure (e.g., medical equipment, home care, hospice care) or nonphysician services outside of hospitals (e.g., vision and dental care, outpatient prescription drugs, rehabilitation services, mental health care) [10]. Given the changing population needs, financial constraints, and added pandemic and political pressures, the Canadian healthcare system as it currently stands is struggling to deliver required services [9]. It is important to rethink care models that ensure the right care is delivered to the right people, at the right time.

The World Health Organization (WHO) describes rehabilitation as a set of interventions designed to optimise functioning and reduce disability in individuals with health conditions in interaction with their environment. Rehabilitation expands the focus of health beyond preventative and curative care, instead centering independence and meaningful participation in education, work and life roles [11]. Anyone may require rehabilitation services at any point in their lives–services that include audiology, speech and language pathology, physiotherapy, occupational therapy, physical and rehabilitation medicine, psychology, chiropractic, prosthetics and orthotics, rehabilitation nursing and respiratory therapy [12]. Rehabilitation services are interdisciplinary in nature; health professionals at all levels of care (e.g., nurses, general physicians, and medical specialists) must collaborate to ensure accessible and timely rehabilitation care. These professions aim to be highly patient-centric which means that the interventions selected for patients are tailored to their goals and objectives and can be revised iteratively over time [13, 14]. Indeed, rehabilitation competency frameworks require relationships between patients and health professionals to be collaborative, flexible, and longitudinal in nature [14, 15]—an approach that may be challenging to replicate to the same extent in acute care settings, like in an emergency department context that focuses on providing short-term, emergent care [16]. Importantly, rehabilitation complements and improves the effectiveness of medical and surgical interventions, helps speed up return to work or home, minimises the need for caregiver support while reducing overall health costs, and reduces or prevents readmissions [17, 18]. Considering the benefits of rehabilitation for patients and their families, there is a compelling rationale for strengthening its role within Canadian healthcare systems.

At present, healthcare in Canada is heavily siloed [19], with acute care and rehabilitation often operating independently of one another both in hospitals and in the community. Health systems at all levels (Federal, Provincial, Territorial) have been experiencing growing pressure for decades due to demographic shifts, technological innovations, and fiscal constraints [8, 9]. The legal framework guiding the health systems—the Canada Health Act—protects universal medically necessary health services as a right for all Canadians [9, 20] that provincial and territorial health insurance plans must provide if they wish to receive the full federal contribution under the Canada Health Transfer [21]. In general, physician services and hospital-based care is covered by Provincial public plans. In contrast, services offered outside the hospital by non-physicians are either partly covered by for-profit private insurance plans–held by approximately two thirds of Canadians—or are paid out of pocket by patients [10]. With the aging population and increases in complex chronic conditions, the original focus on hospital and medical care may no longer be sufficient to meet the health, socioeconomics, and/or social needs of diverse populations [8]. Integrating innovative rehabilitation models of care may help bolster the health systems by shifting to a longer-term approach to addressing health and wellbeing [6].

Because healthcare needs are constantly evolving and because technological capacity and evidence continue to progress, healthcare systems need to constantly innovate to ensure that models of care respond to societal needs [22, 23]. Models of care are a systematic approach to delivering healthcare services. Various structures have been proposed, ranging from those focusing on disease-specific care to system-level approaches emphasising the integration of care across multiple services [23]. For example, Davidson and Elliot described a model of care as a conceptual tool that connects concepts, beliefs and intentions in healthcare delivery to serve as a standard or example for comparison or imitation [24]. A model of care seeks to address the evolving challenges faced by healthcare systems, such as limited resources, changes in population dynamics, and a shift toward increased chronic disease burdens, by providing a structured framework for care delivery based on evidence. To address gaps in existing care models, innovation is required [25]. According to Noseworthy, innovation is the phenomenon of developing or delivering new or improved health technologies, products, services, policies or practices [25]. Innovative care models address existing limitations, such as outdated processes, siloed care, and inefficiencies, and offer solutions that are better suited to evolving healthcare demands that may be more sustainable, adaptable and responsive to changing patient needs [25–27]. Despite their purported relevance for addressing shortcomings in previous iterations of models of care, little is currently known about what innovative models of rehabilitation care might look like and what is required to effectively implement them in practice. The purpose of our study was to explore the contexts, mechanisms, and outcomes associated with the successful implementation and sustainability of rehabilitation care models, with a specific focus on how these models operate in different circumstances to achieve desired health outcomes.

2 | Methods

We conducted a realist-inspired narrative review, situated within Pawson and Tilley's realist paradigm [28, 29]. Findings are reported in accordance with the Realist and Meta-review Evidence Synthesis: Evolving Standards (RAMESES) guidelines on quality and reporting of realist reviews [30]. Narrative reviews provide a summary of the existing literature published on a topic; they incorporate both critique and interpretation, thereby providing a perspective with supporting evidence [31–34]. Realist reviews aim to understand and explain the causal processes involved in producing the effects of a given intervention [35]; they achieve this aim by refining theories iteratively, drawing on evidence from the literature [36]. Explanations must contain three components: (1) contexts, which refer to the conditions or circumstances that trigger a mechanism; (2) mechanisms, which refer to the human resources or reasoning that results in an outcome; and (3) outcomes, which are the products of an intervention [29, 37]. Table 1 provides definitions of these components and other key terms used throughout this review. While realist reviews often combine context, mechanisms, and outcomes into causal explanations–called context-mechanism-outcome configurations (CMOCs)–informed by existing theory [37], we elected to narratively synthesise these components, drawing on extensive description and interpretation, in line with narrative review practices [35, 41]. While we initially set out to conduct a conventional realist review, we adopted this narrative approach due to the significant heterogeneity among the included studies, which posed challenges for developing the Context-Mechanism-Outcome Configurations (CMOCs) typically used in realist reviews. The diversity in study designs, settings, populations, and interventions required more flexible synthesis methods to effectively capture the data's complexity. Traditional realist methods, reliant on CMOC mapping, were less suitable given these methodological and outcome disparities. A narrative approach allowed us to accommodate this diversity while still drawing meaningful insights into the implementation and impact of rehabilitation care models. This approach not only enabled us to examine the complexities and nuances of each study but it also revealed gaps and limitations in the existing literature. These shortcomings could offer valuable insights for future research, highlighting areas that require further investigation and helping to refine the conceptual frameworks needed to understand and improve the implementation of innovative care models in rehabilitation.

2.1 | Step One: Question Identification and Search Strategy

The following question guided our review: How (mechanisms), when, and under what circumstances (contexts) have innovative models of care been successfully implemented or sustained (outcomes) in rehabilitation?

TABLE 1 | Definitions of key terms.

Term	Definition
Innovations	The creation and implementation of new ideas, products, services, or care models that improve healthcare [38]. This term is used interchangeably with the term 'models of care' in this review since the focus was on innovative care models.
Models of care	Comprehensive approaches to evidence-based health service delivery with the goal of improving patient outcomes [24]. This term is used interchangeably with the term 'innovations' in this review since the focus was on innovative care models.
Realism	Realists refer to the embedded nature of human interaction within a range of social processes as the stratified nature of social reality. This includes the in-built assumptions about wider social rules and institutions that help actions make sense; causal powers reside in the social relationships they form rather than in any one object [29].
Contexts	The term context refers to the conditions or circumstances that trigger mechanisms [37]. Contexts are the prior set of rules, relations, and cultural systems that set limits on the efficacy of program mechanisms [29]; they can be enabling or constraining, and through their interaction with mechanisms, can constitute new contexts [39]. Contextual factors can be identified at four levels: 1. The individual capacities of the key actors and interested parties such as interests, attitudes, knowledge, and skills 2. The interpersonal relationships required to support the intervention, such as lines of communication, management, and administrative support, as well as professional relations and contracts 3. The institutional setting in which the intervention is implemented, such as the culture, norms, leadership, and governance of the implementing body 4. The wider infrastructural and welfare system, such as political support, the availability of funding resources, as well as competing policy priorities and influences [40].
Mechanisms	A mechanism is a theory of the potential of human resources and reasoning; it is an account of the makeup, behaviour, and interrelationships of the processes that are responsible for generating an outcome [29, 37].
Outcomes	Outcomes refer to the desired or observed products of an intervention [37]. Programs work if the subjects choose to make them work and are placed in the right conditions to enable them to do so [29].
CMOCs	To infer a causal outcome (O) between two events (X and Y) one needs to understand the underlying generative mechanism (M) that connects them and the context (C) in which the relationship occurs [40]. In realist reviews, causation is described using context-mechanism-outcome configurations where particular features of contexts activate specific mechanisms that generate certain outcomes.

2.1.1 | Database Searching

A health sciences librarian developed the search strategy and performed the literature searches in MEDLINE (Ovid), EMBASE (Ovid), PsycInfo (Ovid), CINAHL (EBSCO), from inception to 13 June 2023. No date limit or language limit was applied. A targeted keyword approach was used and supplemented with citation searching and grey literature searching described below. MEDLINE, EMBASE and PsycInfo were searched simultaneously within Ovid and duplicates were removed in Ovid before import into Covidence. The CINAHL results were imported into Covidence for further deduplication. While no protocol is available for this review, the complete search strategies are available in the institutional data repository: https://doi.org/10.5683/SP3/VOGZ34 [42].

2.1.2 | Supplemental Searching

Two undergraduate student research assistants (ZZ and RK) were trained by the first author to search the grey literature using targeted website searches, advanced Google searches, and grey literature database searches. After completing the database screening, the first author utilised the selected articles from the database screening to conduct forward and backward citation searching in Scopus. Full details of the grey literature search and the forward-backward citation search can be found in the institutional repository: https://doi.org/10.5683/SP3/VOGZ34 [42].

2.2 | Step Two: Document Selection

To be included in this review, documents had to meet several criteria related to the population, model of care, outcomes, and context, as per the definitions in Table 1.

2.2.1 | Population

Studies were eligible for inclusion if they focused on populations across the lifespan, namely, children, adults (aged 18–65 years), or older adults (> 65 years) with chronic (> 3 months), non-communicable conditions (e.g., cardiopulmonary, musculoskeletal, and/or mental health conditions like depression or anxiety) that can be addressed by one or more rehabilitation professional (e.g., occupational therapy, physical therapy, speech language pathology, chiropractic, osteopathy, massage therapy, kinesiology, community health workers), working with or without general physicians, medical specialists, and/or nurses. This population was selected to facilitate the exploration of rehabilitation care models that may help alleviate pressure on existing healthcare systems due to the prevalence of high burden chronic conditions.

2.2.2 | Innovation

Studies were included if they focused on innovations related to models of care, care innovations, triaging or classification systems, care pathways, service delivery, trajectories in care, care algorithms, or recovery orientation models. Specific innovations could consist of integrated or collaborative interdisciplinary or multidisciplinary care, virtual care, ambulatory or outpatient care, person- or community-focused care, specialist hospitals and population-specific care units, early discharge hospital at home care, and rehabilitation.

2.2.3 | Contexts

For the purposes of developing inclusion criteria, we focused on the approach (i.e., how the model of care was developed and implemented) and setting (i.e., where the model of care was developed and implemented) of prospective innovative models of care. Documents were included if they reported on any of the following approaches: program evaluation, implementation, pilot projects, program development, continuous quality improvement, health or organisational planning, administration, quality of healthcare, and/or barriers/facilitators or enablers/determinants/factors. Studies could represent any country and health system funding structure. With regard to setting, these could include primary care, community care, or tertiary care. Finally, we included papers published in English or French within the last 20 years only (2003–2023) to capture the most recent and relevant healthcare innovations that could be applied to the current Canadian healthcare systems' context.

2.2.4 | Outcomes

Outcomes were assessed within the context of the Quintuple Aim (i.e., improved population health, system efficiency, health equity, health professional wellbeing, and patient experience and outcomes), and mapped on to the Effective Practice and Organization of Care (EPOC) taxonomy [43, 44]. Aligning the Quintuple Aim outcomes with the EPOC taxonomy offers a systematic approach to evaluating innovative care models. This integration connects overarching healthcare objectives—such as population health, equity, and efficiency—with specific intervention outcomes. It facilitates evidence synthesis, equity-centered evaluations, and alignment of implementation strategies with system priorities. This approach can yield actionable insights for rehabilitation care research and guide policymakers and practitioners in optimising care delivery models. Documents were eligible for inclusion if they reported service outcomes aligned with this framework, such as efficiency, safety, timeliness, effectiveness, equity, or patient-centredness. Additionally, we considered implementation outcomes (e.g., reach, acceptability, appropriateness, feasibility, fidelity, adaptability, costs, adoption, and maintenance or sustainability), health outcomes (e.g., quality of life, function, disability, pain) and measures of satisfaction or expectations from care.

2.2.5 | Screening and Selection

The two research assistants (Z.Z. & R.K.) piloted the inclusion criteria on a 10% subset of titles and abstracts from the database search results ($n = 39$ peer-reviewed articles). They met with C.G. to ensure a shared understanding of the inclusion criteria and to discuss any disagreements. The research assistants independently screened all articles by title, abstract, and full text, and regularly met to resolve differences. For the grey literature search, Z.Z. and R.K. did an initial screening before discussing with C.G. to determine which items would go through blinded full-text screening. Any disagreements were resolved by C.G.

2.3 | Step Three: Data Extraction

We elected to employ explanatory sequential mixed methods research techniques in our data extraction and analysis approaches to enhance the depth of our realist-inspired review. Realist reviews aim to explore the 'how' and 'why' behind interventions, making it essential to capture both the patterns revealed by quantitative data and the contextual factors highlighted by qualitative findings. The explanatory sequential design allows us to first collect and analyze quantitative data, which provides an overall understanding of the outcomes, and then use qualitative data to explore the underlying mechanisms and contextual factors that explain these outcomes [45, 46]. This approach aligns well with the realist focus on understanding the complex interactions between context, mechanisms, and outcomes, providing a richer, more nuanced interpretation of the data. Specifically, we extracted quantitative data using a structured extraction form in Covidence. We subsequently conducted a set of qualitative data abstractions featuring critical interpretations and theory-building using a structured abstraction form. Both forms were developed by CG and revised by all authors. Extractions of quantitative data in Covidence centred on study characteristics (e.g., year of publication, country, study aim, design, timelines, funding sources), and information relating to context (e.g., type of model of care/innovation, professions involved), mechanisms (e.g., implementation strategies, barriers, enablers), and outcomes (e.g., process outcomes, patient health, costs). C.G. piloted the extraction form on a 20% subset of articles ($n = 5$); the authorship team reviewed and modified the form as necessary based on the pilot. Modification of the form included providing concrete examples and definitions to help clarify the terms 'context', 'mechanism,' and 'outcome' since we found these components to be challenging to identify in each article. C.G. continued to extract data from all included articles.

In contrast to traditional realist reviews that apply and test a middle-range theory from the outset [47], our approach generates theory inductively, more akin to grounded theory methods [35–37]. We focus on qualitative abstractions, examining the model of care, contexts, mechanisms, outcomes, and issues raised during the abstraction process by each researcher. This method allows theories to emerge directly from the data [48], suiting realist reviews driven by open-ended questions [47]. The goal was to deeply understand and theorise how, when, and under what circumstances innovative care models succeed or fail. Our research team engaged in an active, iterative process, regularly discussing the abstraction challenges, literature quality, and emerging findings.

2.4 | Step Four: Data Synthesis and Reporting

Two authors (C.G. & L.S.) conducted a numerical analysis of the study characteristics, as well as counts and frequencies of the quantitative extractions (e.g., types of care models, health professions involved, outcomes reported, etc.). Both authors (C.G. & L.S.) subsequently conducted a conventional content analysis [49] on all open-ended data in our extraction form, as well as our qualitative abstractions, to present a descriptive synthesis of the contexts, mechanisms, and outcomes reported in each article. Conventional content analysis is typically used with study designs whose aim is to describe a phenomenon; researchers avoid using preconceived categories and instead allow the categories to flow inductively from the data [49]. We therefore engaged in two cycles of inductive coding, using MAXQDA to manage our open-ended data and qualitative abstractions. During our first cycle of coding, codes were derived using a combination of descriptive coding (i.e., assigning labels to words or short phrases using nouns), process coding (i.e., using gerunds to connote observable and conceptual action in the data), evaluation coding (i.e., assigning judgements about the merit, worth, or significance of programs or policy), and holistic coding (i.e., applying a single code to large units of data to capture a sense of the overall contents) [50]. During our second cycle of coding, we grouped our existing codes into categories, using a combination of matrices and networks to display our data and explore potential relationships or themes [50, 51]. The research team regularly met to discuss our interpretations and analyses throughout the data analysis process as well as the preliminary theories about what works.

2.4.1 | Integration of Findings

The heterogeneity of studies precluded the development of the CMOCs often found in realist reviews; instead, we used best practices from mixed methods research to integrate our initial findings and narratively present contexts, mechanisms, and outcomes [45, 46, 52]. In an explanatory sequential approach, integration of quantitative and qualitative findings usually occurs in an interpretation phase [53]. During this phase, three authors (C.G., L.S., & A.T.) met biweekly to discuss the findings, develop hypotheses, and collaboratively interpret the data [53]. We used an iterative process of explanation building, where we made preliminary theoretical propositions based on the literature and our knowledge of existing rehabilitation and implementation science frameworks, compared our findings against these propositions, revised the propositions, and repeated this process as needed [54]. Through explanation building, we narratively combined our findings to explain how, when, and in what circumstances models of care have been successfully developed and sustained in rehabilitation. We chose to report the findings narratively, synthesising the contexts, mechanisms, and outcomes reported in the included studies under distinct headings.

3 | Results

The database search revealed 5435 citations with 3973 citations after duplicates were removed. Forward and backward citation searching found an additional 16 citations, and the grey literature search identified 96 citations, of which 5 were included for data extraction. The detailed number of items from each source is depicted in the PRISMA flow diagram (Figure 1). The 26 admissible documents published between 2014 and 2021

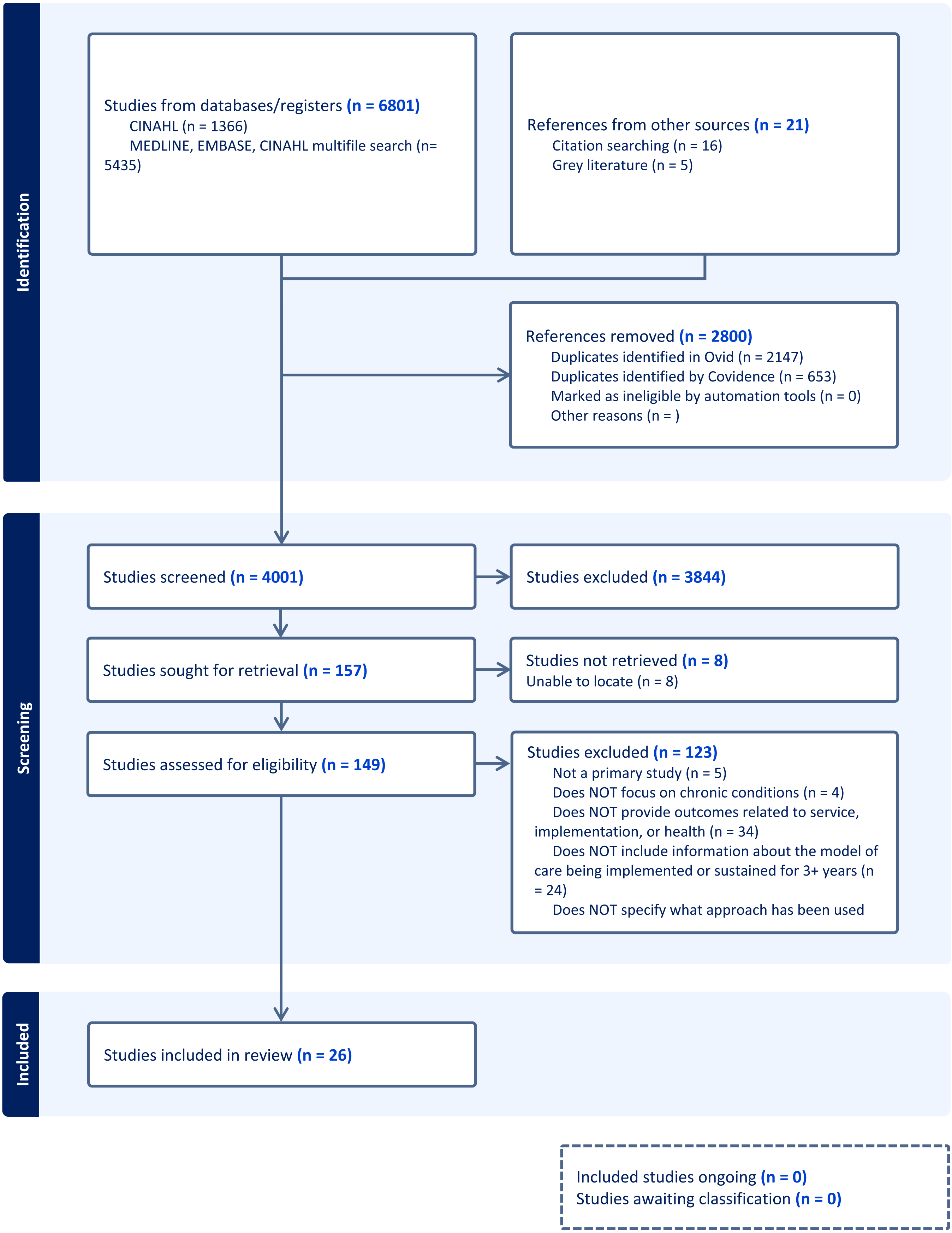

FIGURE 1 | PRISMA flow diagram.

TABLE 2 | Characteristics of included studies.

Author and year	Country	Study design	Study objective(s)	Model of care	Setting
Aliberti, 2016	Brazil	Retrospective chart review	Describe a new model of care	Transdisciplinary program: Geriatric rehabilitation pathway	Subacute/acute care
Amin, 2021	Canada	Case study	Describe a new model of care	Telerehabilitation/telehealth	Community
Afzal, 2020	Canada	Pre-post observational design	Evaluate the effectiveness of a model of care	Transdisciplinary program: Dedicated stroke care pathway	Community
Beks, 2020	Australia	Qualitative	Evaluate the acceptability of a novel intervention	Providing healthcare access to rural/remote communities	Community
Brooks Carthon, 2022	United States	Quality improvement	Describe a new model of care	Wraparound services for chronic illness or disability	Community
Cairns, 2022	Australia	Mixed methods	Develop a new model of care	Transdisciplinary program: student-led rehabilitation service	Community
Demartini, 2020	Italy	Pre-post observational design	Evaluate the effectiveness of a model of care	Telerehabilitation/telehealth	Community
Dow, 2010	Australia	Case report	Describe a new model of care	Transdisciplinary program: transitions in care	Subacute/acute care
Elias, 2021	Australia	Case study	Develop a new model of care	Geriatric rehabilitation pathway/Hospital at home	Subacute/acute care
Everink, 2017	Netherlands	Program evaluation	Develop a new model of care	Transdisciplinary program: Geriatric rehabilitation pathway	Community
Frakes, 2014	Australia	Case report	Describe a new model of care	Transitions in care	Post-acute or primary care
Glassgow, 2018	United States	Program evaluation	Compare a novel intervention against previous care	Wraparound services for chronic illness or disability	Community
Gramlich, 2020	Canada	Qualitative	Evaluate the potential for spread, scale, or sustainability of an intervention	Transitions in care	Subacute/acute care
Harding, 2018	Australia	Prospective observational study	Evaluate the effectiveness of a model of care	Expanded scope of practice	Subacute/acute care
Howanitz, 2018	United States	Experimental repeated measures design	Evaluate the effectiveness of a new model of care	Geriatric rehabilitation pathway	Post-acute or primary care
Large, 2014	Australia	Observational (retrospective cohort)	Compare a novel intervention against previous care	Expanded scope of practice	Subacute/acute care
Lau, 2008	China	Randomised control trial	Evaluate the effectiveness of a model of care	Expanded scope of practice	Subacute/acute care
Lee, 2018	Canada	Case study	Describe a new model of care	Geriatric rehabilitation pathway	Post-acute or primary care

(Continues)

TABLE 2 | (Continued)

Author and year	Country	Study design	Study objective(s)	Model of care	Setting
MacKay, 2008	Canada	Qualitative	Describe a new model of care	Expanded scope of practice	Community
MacKay, 2009	Canada	Pre-post observational design	Describe a new model of care	Expanded scope of practice	Subacute/acute care
O'Shaughnessy, 2021	Ireland	Observational (retrospective)	Develop a new innovation	Predictive model of service use: Hospital at home	Subacute/acute care
Ruiz, 2020	United States	Mixed methods	Evaluate the effectiveness of a model of care	Wraparound services for chronic illness or disability	Community
Shirey, 2019	United States	Qualitative	Describe a new model of care	Transitions in care	Subacute/acute care
Ure, 2023	Canada	Observational (retrospective cohort)	Describe a new model of care	Hospital at home	Community
Voorn, 2013	Netherlands	Observational	Compare a novel intervention against previous care	Expanded scope of practice	Subacute/acute care
Wiertsema, 2019	Netherlands	Pre-post observational design	Compare a novel intervention against previous care	Transdisciplinary program: expanded scope of practice	Post-acute/primary care

originated in North America ($n = 11$), South America ($n = 1$), Europe ($n = 5$), Australia ($n = 8$), and Asia ($n = 1$). Of those, nine used an observational design, six used a qualitative or mixed design, three were quality improvement or program evaluations, and six were chart reviews, case reports, or case studies. Two studies used an experimental design. Studies aimed to describe ($n = 10$), develop ($n = 4$), evaluate ($n = 8$), or compare ($n = 4$) models of care. The nine types of models of care reported involved transdisciplinary programs ($n = 6$), telerehabilitation/telehealth ($n = 2$), providing healthcare access to rural/remote communities ($n = 1$), and hospital at home ($n = 1$) within three settings: subacute/acute care ($n = 11$), community ($n = 11$), and post-acute or primary care ($n = 4$). Refer to Table 2 for additional details.

3.1 | Contexts

The models of care described in each study addressed three main contexts: (1) the political impetus for change, (2) the institutional settings in which the care models have been implemented and the availability of funding to support this implementation and sustainment, and (3) the individual capacities and interpersonal relationships required to support the care models.

3.1.1 | Political Impetus for Change

The political impetus for change presented a dominant contextual factor, with several articles reporting that legislative changes influenced whether and how the innovation was implemented or sustained. For example, Elias discussed how reforms that aimed to provide more support to older Australians at home and in residential care to embed practices of wellness and participation in the community led to the health authority prioritising an integrated approach to care in an effort to improve cost effectiveness, sustainability, equity, and meaningful participation in care [55]. Similarly, Everink shared that legislative changes that created stricter admission rules for geriatric rehabilitation created an impetus for a novel model of care to appropriately triage patients and promote access to care [56].

3.1.2 | Institutional Settings and Availability of Funding

The included studies described models of care that occurred predominantly in publicly funded [55, 57–65] subacute/acute care [55, 57, 60, 61, 63, 66–71] or community settings [56, 58, 59, 64, 65, 72–77]. Specifically, these models of care were implemented into health authorities, university affiliated and local hospitals, skilled nursing facilities/nursing homes, and public spaces such as schools or correctional facilities. Eleven models received government funding to assist with implementation [55, 57, 58, 60–62, 64–66, 72, 76]; five were funded by academic institutions or research grants [56, 70, 73, 77, 78] and one was funded by an insurance company [79]. The models of care predominantly addressed primary care [72, 74] and surgical settings [60, 63, 67].

3.1.3 | Individual Capacities and Interpersonal Relationships Required

Another contextual factor that supported the implementation of novel models of care consisted of adopting a multidisciplinary approach, generally involving: (1) clearly defined roles for health professionals and patients [56–61, 65, 70, 72, 73, 76, 79], (2) clearly defined timelines and procedures [57, 59, 62, 69, 71, 73, 76, 79], (3) clear communication protocols [56, 57, 59, 62, 64, 65, 71, 73, 78–80], (4) support from management [56, 59–61], (5) a common goal [59, 60, 70], and (6) community engagement through consultation or patient-centred planning [55, 57–59, 64–66, 72, 74, 75, 79]. For instance, in the THRIVE model of care described by Brooks Carthon, eligible hospitalised participants are identified using a predictive algorithm (i.e., clearly defined timelines and procedures). Forty-eight hours after discharge, participants received a home care visit from a qualified nurse, OT, or PT who assessed their social needs and referred them to a community health worker (i.e., clearly defined roles). Following discharge, the THRIVE team hosted a virtual interdisciplinary case conference where each THRIVE participant was discussed for 1 month after discharge (i.e., a common goal, consultation and patient-centred planning). A home care nurse acted as a liaison between the interdisciplinary team and what was happening in the home (i.e., clear communication protocols).

3.2 | Mechanisms

Four mechanisms influenced the implementation and uptake of the novel models of care. These mechanisms included: (1) using theory to support model of care design and implementation, (2) purposefully addressing inequities in healthcare, (3) leveraging the appropriate human resources, and (4) considering the barriers, facilitators, and strategies related to model of care adoption.

3.2.1 | Using Theory to Support Model of Care Design and Implementation

Nine studies adopted a theory or framework to guide the design, implementation, and/or evaluation of the novel model of care. These theories or frameworks included the cultural responsiveness framework [74]; the framework for complex intervention implementation [77]; health-related quality of life [71]; the international classification of functioning, disability, and health [78]; the Wagner chronic care model [62, 78]; authentic leadership [70]; the quality enhancement research initiative implementation model [60]; the theoretical domains framework [60]; human-centred design thinking [73]; and person-centred care [80].

3.2.2 | Purposefully Addressing Inequities in Healthcare

The included studies described uncommon rehabilitation models or tools that were developed for two specific purposes: (1) to address a lack of specific guidelines or to ensure existing guidelines were being followed [59, 75]; and (2) to create a comprehensive service hub that streamlines access for specific populations [55, 57, 62, 73, 76]. Several models of care aimed to address specific components of the quintuple aim, like improving access to health services for patients experiencing inequities [55, 69, 73, 74, 76] and/or for high burden, high-cost conditions [55, 58, 61, 62, 73, 74, 79]. Moreover, these models broadly aimed to improve equitable and culturally appropriate access to care and enhance transitions in care. For example, Brooks Carthon described a model of care focused on expanding equitable access to wraparound care (i.e., a holistic, collaborative approach that considers a person's medical needs and coordinates care amongst the healthcare team) for Black, Indigenous, People of Colour (BIPOC) peoples who are insured by Medicaid and often experience a higher burden of chronic disease and disparities in post-acute care outcomes. Similarly, Beks' initiative aimed to improve access to care for Aboriginal and Torres Strait Islander populations who typically face a lack of access to transportation, owing to remote geographical locations, as well as cultural and linguistic barriers.

3.2.3 | Leveraging Appropriate Human Resources

The reviewed articles explored models of care involving diverse health professional and patient populations. The dominant health professionals included physiotherapists ($n = 18$ studies), nurses ($n = 15$ studies), social workers and physicians ($n = 13$, respectively), occupational therapists ($n = 12$), speech language pathologists ($n = 8$) and dieticians ($n = 8$). Other health professionals included psychiatrists or psychologists ($n = 5$), pharmacists ($n = 5$), community health workers or recreation workers, legal professionals, audiologists, optometrists, respiratory therapists, and dentists ($n = 1$, respectively). Eligibility for these care models was determined by criteria such as age, region, medical condition, referral type, insurance coverage, or emergency department admission. A predictive algorithm flagged eligible patients in four articles [61, 62, 73, 76]. The models of care addressed the following conditions: multiple chronic conditions/multimorbidity [70, 73, 76, 78], the need for geriatric rehabilitation [55–57, 62, 66, 69], respiratory conditions [58], neurological conditions (e.g., stroke, intellectual development disability, cognitive impairment) [59, 65, 66, 77, 80], and musculoskeletal conditions [61, 64, 66, 68, 71, 75].

3.2.4 | Considering the Barriers, Facilitators, and Strategies Related to Model of Care Adoption

Seven articles outlined strategies for addressing organisational culture to support the adoption of new care models. Organisational culture was defined based on the EPOC taxonomy as interventions targeted at healthcare workers designed to bring about changes in healthcare organizations, the behaviour of healthcare professionals, or the use of health services by healthcare recipients [43]. These strategies included interprofessional educational activities [59, 62, 70] and other educational interventions (e.g., educational meetings, outreach visits, educational materials) [55, 59–61, 66, 70, 71, 74, 80], cultural awareness training [74], clinical practice guidelines [62, 67], communities of practice [60], and local opinion leaders [60].

TABLE 3 | Overview of barriers and facilitators to model of care implementation and uptake.

Barriers	*N* (%)	References
Coordination challenges (e.g., for interprofessional meetings)	8 (30.8%)	Brooks Carthon, 2022; Elias, 2021; Everink, 2017; Frakes, 2014; Lee, 2018; MacKay, 2008; MacKay, 2009; Shirey, 2019
Staff/patient buy-in	3 (11.5%)	Dow, 2010; Harding, 2018; Large, 2014
Technical or mechanical issues (e.g., lack of electricity, satellite signal; billing infrastructure, privacy concerns)	3 (11.5%)	Amin, 2021; Beks, 2022; MacKay, 2008
Geographical concerns	3 (11.5%)	Glassgow, 2018; MacKay, 2008; MacKay, 2009
Costs	3 (11.5%)	Gramlich, 2020; MacKay, 2008; MacKay, 2009
Lack of post-acute care infrastructure	2 (7.7%)	Dow, 2010; O'Shaughnessy, 2021
Lack of human resources (e.g., supervisors for students, staff; inadequate staffing)	2 (7.7%)	Cairns, 2021; Ruiz, 2020
Patient acuity	2 (7.7%)	Brooks Carthon, 2022; Lee, 2018
Transferability to different contexts	2 (7.7%)	Gramlich, 2020; Lee, 2018
Variable/lack of funding	2 (7.7%)	Afzal, 2020; Harding, 2018
Measurement challenges/Knowledge to Practice gaps	2 (7.7%)	Afzal, 2020; Gramlich, 2020
Covid-19 restrictions	1 (3.8%)	Afzal, 2020
Lack of time	1 (3.8%)	Everink, 2017
Lack of expertise	1 (3.8%)	Howanitz, 2019
Facilitators		
Clear trajectories of care	4 (15.4%)	Glassgow, 2018; Lee, 2018; MacKay, 2008; Ure, 2014
Designated person tasked with overseeing implementation	4 (15.4%)	Beks, 2022; Cairns, 2021; Elias, 2021; Everink, 2017
Support from Leadership/identified champions	3 (11.5%)	Everink, 2017; Frakes, 2014; Shirey, 2019
Access to infrastructure (e.g., technology, rehabilitation equipment)	3 (11.5%)	Dow, 2010; Glassgow, 2018; MacKay, 2009
Expanded scopes of practice	2 (7.7%)	Harding, 2018; MacKay, 2008
Funding	2 (7.7%)	Gramlich, 2020; MacKay, 2009
Interdisciplinary meetings and goal setting	2 (7.7%)	Howanitz, 2018; Ure, 2014
Team expertise	2 (7.7%)	Ruiz, 2020; Ure, 2014
Human resource supports	2 (7.7%)	Cairns, 2021; Ure, 2014
Professional development opportunities	2 (7.7%)	Elias, 2021; Harding, 2018
Low staff turnover + continuity planning	1 (3.8%)	Harding, 2018
Clear alignment with organisational priorities	1 (3.8%)	Gramlich, 2020

Table 3 lists barriers and facilitators to model of care implementation and uptake highlighted in multiple articles. Common barriers included coordination challenges, staff buy-in, and technical or mechanical issues. Common facilitators included clear trajectories of care, having a designated person tasked with overseeing implementation, and support from leadership.

3.3 | Outcomes

The included articles reported on five outcomes of the new models of care, namely improved access to quality care, implementation outcomes (e.g., cost savings, spread and scale up of the new model of care), health outcomes, confidence, and satisfaction. These outcomes have been mapped to the quintuple aim objectives and EPOC taxonomy. We detail each one next.

3.3.1 | Improved Access to Quality Care

Four studies reported that because of the new models of care, their ability to provide a sufficient level of service improved [61, 64, 73, 76]. Moreover, studies reported improved care coordination and continuity of care [59, 66], improved quality of communication [56, 59], improved awareness of care options

[55, 73], and increased culturally relevant care provided [74] as the outcomes of the newly implemented model of care. Other studies reported improved access to care either through decreased wait times [61, 65], rapid referrals to specialist care [56, 59, 63, 69], increased referrals to the new model of care [55], and more care provided at home or in the local community [55, 59, 61, 62, 64–66, 72, 73, 75].

3.3.2 | Implementation Outcomes

Two implementation outcomes were identified: (1) costs and (2) spread, scale up, and sustainability of new models of care. However, these outcomes were not extensively reported in the included studies. Regarding costs, 21 articles did not address costs at all, three provided cost information for the new care model [57, 61, 65], and one calculated cost efficiencies [77]. Similarly, 11 articles did not report any information regarding the spread, scale, or sustainability of the newly implemented care models.

3.3.3 | Costs

Ruiz reported that the models of care demonstrated decreases in total costs of care; specifically, Ruiz found that both new care models they implemented were associated with reduced hospitalisation rates and their medical home model was associated with reduced emergency department visits thereby decreasing total care costs. Ure conducted an economic analysis of their Community Stroke Rehabilitation Teams (CSRT) and found the model of care to be cost effective in comparison to no further therapy. The CSRT program cost on average $232,533/11 Quality of Life Years (QALYs) and no further therapy was found to cost $104,121/6 QALYs, with an incremental cost effectiveness ratio of $25, 692/1 QALY [65, 77]. They indicated that in a probabilistic sensitivity analysis, at a Willingness to Pay threshold of $50,000, the CSRT was found to be cost effective in 75% of simulated scenarios. Harding reported that the cost of occasion of service was found to be $35AUD less than regular care. The average cost savings across all sites was $38/occasion of service. Harding also reported increased orthopaedic specialist capacity, valued at $11, 950 per clinic per year; and a potential savings of up to $21,000 per service over a 12-month period [61]. Without discussing specific savings, Aliberti indicated that the implementation costs of the model of care was $332, 000 for physical infrastructure and $168, 000 for staffing (per year) [57].

3.3.4 | Spread, Scale Up, and Sustainability of New Models of Care

Only four articles reported that the models of care presented had been successfully scaled up or spread to other settings or areas of practice. For example, Elias described how their case management intervention had been successfully expanded into other settings (e.g., ambulance, fire and rescue services) and received funding to expand after-hours services 7 years after its initial development [55]. Gramlich described how their enhancing recovery after surgery intervention was subsequently spread to other surgical areas within the health authority and that three out of six sites expanded the program to other surgical areas within their site [60]. Finally, Harding indicated that eight of the implementation sites for their study secured ongoing funding to maintain the new musculoskeletal evaluation clinics. In terms of sustainment of the novel models of care, one study indicated that the new model had been sustained for 6 months or less [74], six indicated sustainment of 1–2 years [56, 60, 63, 72, 73, 75], and three indicated sustainment of 3–4 years [67, 71, 76]. Three studies disclosed sustaining the new models for longer than 4 years [55, 57, 65].

3.3.5 | Improved Health

The included studies reported on seven health-related outcomes. Specifically, they discussed patients' and caregivers perceptions of health improvements [57, 59, 65, 71] and reductions in emergency department visits and/or hospital admissions [55, 65, 69, 77]. Several articles also reported measured improvements in health. For example, four articles reported on improved client outcome scores (e.g., Stroke Impact Scale, FIM, Bakas Outcomes Score) [59, 65, 67, 71], improved independence and ability to stay at home [59, 65], improved recovery over multiple time points [75, 79], and decreased pain [68]. One article [61] reported improved collection and use of health data, specifically patient-reported outcomes.

3.3.6 | Improved Confidence and Satisfaction

Three studies indicated that the health professionals and patients involved reported an improved sense of confidence and sense of their professional identity [59, 74, 78]. Specifically, Frakes indicated that the students involved in delivering the model of care had a better sense of their professional identity and scope of practice through the project. Similarly, Cairns found that students reported increased confidence managing caseloads and working in culturally diverse environments. Arsalan found that the patients involved in the model of care felt more confidence in managing their own care as a result of engaging in community-based rehabilitation. Health professionals and patients also reported increased satisfaction because of the new models of care [56–59, 61, 65, 66, 68, 71, 72, 74, 79]. For example, Everink reported that healthcare professionals felt satisfied with the implementation of a new care pathway. Patients and caregivers reported being satisfied with their involvement in their care and the care itself. Amin indicated that patients and families reported feeling 'connected, empowered, and safe,' while health professionals remarked on the 'ease of connection with families.'

4 | Discussion

This realist-inspired narrative review aimed to elucidate how (mechanism), when, and in what circumstances (context) innovative rehabilitation models of care were implemented and sustained (outcome). We initially set out to establish the Context-Mechanism-Outcome Configurations (CMOCs) commonly reported in realist reviews, but this was not achieved due to inconsistent reporting in the included studies. While studies described a novel model of rehabilitation care, most focused on clinical outcomes and lacked details on the contexts, mechanisms, and outcomes associated with these models. This inconsistency not only hindered our ability to establish robust CMOCs but also limits the potential for replicating these models or truly understanding how they function in different settings. Despite using a mixed methods approach (e.g., quantitative extractions paired with qualitative abstractions of each article) and triangulating our findings by using multiple sources of data to analyze the data, the reporting challenges were not unique and have been noted in previous research [81]. To address these issues, the Standards for Reporting Implementation Research (STaRI) statement was introduced in 2017, offering a 27-item checklist for better reporting the contexts, strategies, interventions, and outcomes of implementation research [81]. Some studies included in this review, especially those published before 2017, could have benefited from adhering to such reporting guidelines. Researchers conducting implementation research should consistently use the STaRI statement or similar frameworks like the Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0) [82] to improve reporting quality.

Despite the fact that the heterogeneity of the papers precluded the application of a traditional realist review methodology and the creation of CMOCs, there were important findings. Overall, we found that novel models of care were largely implemented in such countries as Australia and Canada due to legislative changes and a focus on integrating care to better address societal needs. These policy changes created a strong impetus for the development and implementation of cost-effective novel models of care in rehabilitation settings. However, despite initial success, few of these models were sustained over the long term. This lack of sustainability can be attributed to significant limitations in both funding and personnel. Insufficient financial resources often hindered ongoing support and maintenance of these programs, while staffing shortages affected the ability to deliver high-quality care consistently. Additionally, the rapid pace of legislative changes may have outstripped the capacity of organizations to adapt effectively, leading to gaps in implementation [83]. Our recent realist review on the sustainability of evidence-based practices (EBPs) further underscores these challenges, revealing that many new practices struggle to be sustained for a variety of reasons [37]. This poses serious ethical and practical concerns, as the failure to maintain successful interventions–whether these are new models of care or well-known evidence-based rehabilitation interventions—undermines the very principles of evidence-based care, leaving patients without consistent access to high-quality, effective treatment. To ensure that novel models of care do not become short-lived initiatives, long-term success requires not only ongoing investment but also strategic planning to build a robust workforce capable of sustaining these models and overcoming the barriers to sustainability [83–85].

The inclusion of novel models of rehabilitation care appeared to have positive implications for key quintuple aim outcomes, such as patient and provider confidence and satisfaction, as well as health outcomes [44]. According to the quintuple aim, to appropriately address health equity, healthcare leaders and practitioners must identify disparities, design and implement evidence-based interventions to reduce them, invest in equity measurement, and incentivize the achievement of equity [44]. Ten care models identified in this review aimed to improve health equity, especially for Indigenous, rural, or remote populations during the Covid-19 pandemic. Problematically, however, many of the included articles that touched on topics related to equity and accessibility of healthcare did not reflexively explore the systems, structures, and ethical—or other—implications of the interventions provided. For example, Cairns developed a collaborative project aimed at codesign in a community rehabilitation and lifestyle service to support older Australians in remote communities [74]. While they outlined the need for this codesign study, particularly in Indigenous and remote communities, they did not report on such issues as how the innovation addresses systemic problems of cultural safety in health service delivery or how the power imbalance between Indigenous and nonindigenous researchers was addressed by the study team. Similarly, other articles described selective inclusion criteria, like the use of a predictive algorithm to flag patients who might benefit from care but would otherwise be overlooked [61, 62, 73, 76]. While equitable and inclusive in principle, questions remain about which patients are included by the algorithms (e.g., those who access public healthcare programs like Medicaid and have documentation) and which patients would be missed (e.g., those who are undocumented, refugees, etc.) [86]. These data suggest that while many studies on equity and accessibility in healthcare propose innovative solutions, they often fail to critically examine the underlying systems, structures, and ethical implications of their interventions. For instance, some studies did not address key issues such as cultural safety, power imbalances in research, or the potential exclusions caused by algorithmic biases. This lack of reflexivity on how interventions impact vulnerable populations—especially marginalised groups—raises concerns about the true equity and inclusivity of these innovations. The implication is that without addressing these deeper ethical and systemic concerns, healthcare interventions may inadvertently perpetuate inequities rather than resolve them.

4.1 | How Can Innovative Rehabilitation Models of Care Be Implemented and Sustained?

Based on these findings, we were able to generate a preliminary explanation of what works, for whom, and in what circumstances. Specifically, for new models of care to be successfully implemented, they likely need to: (1) have clearly articulated goals; (2) have access to short-term and sustained funding; (3) align with key legislative changes to optimise buy-in; (4) take a multidisciplinary approach that is supported by management, with clearly described roles and the timelines; and (5) include educational and outreach strategies that can be implemented amongst all interested parties (e.g., patients, caregivers, clinicians, management) to help increase buy-in and therefore adoption/sustainment. These points are discussed further in the following sections highlighting the implications for rehabiliation practices.

4.1.1 | New Models of Care Should Have Clearly Articulated Goals

Overall, 11 models of care in this review aimed to meet the needs of vulnerable populations. The included articles highlighted several problems related to systemic healthcare issues, such as growing inequality and erosion of social safety nets. Examples of models of care—originating in the United States especially—demonstrated the need to address the shortcomings of privatised medical services and the systematic barriers to accessing care faced by minority populations [73]. Still, questions arise about the sustainability of such interventions [85, 87]. Indeed, as Swerissen and Crisp argue, inteventions that are pitched at the wrong level of the social system are unlikely to be effective or sustainable [87]. The concern is that interventions such as wraparound access to services and student-led clinics may promote access to care in the short-term and while immediately helpful, may not be sustainable because they do not challenge or change the root causes of healthcare disparities, such as privatised healthcare systems and political decisions and ideologies that disadvantage certain groups. Without addressing these larger issues, the interventions may not lead to lasting improvements in access or equity [88, 89]. Considering that about 2.4 billion people world-wide are currently living with a health condition that may benefit from rehabilitation, many of whom are from underserved and politically unstable countries, this failure to address the underlying systemic issues has major implications for the global delivery of care [90]. Without addressing these larger structural and political factors, interventions may only provide temporary solutions, leaving many vulnerable populations without sustainable, equitable access to the care they need.

4.1.2 | New Models of Care Should Have Access to Short-Term and Sustained Funding

Eighteen articles described having access to short- or long-term funding to support the implementation of new care models. There were disparities in how the models were funded and how useful this funding was. For example, Dow described how their rural rehabilitation program did not receive designated rehabilitation funding and therefore relied on existing resources from acute care to implement the program [66]. In contrast, Gramlich found that in order for a care model to be spread to new practice areas, visible funding (e.g., program resources, nursing positions) was required to demonstrate support for the initiative [60]. Moreover, the findings of this review suggest that several of the new models of rehabilitation resulted in better value care, which may support their ‘business case’ going forward [91]. Indeed, previous work suggests that initiatives that demonstrate a specific cost savings are more readily taken up into practice and sustained because the value is clear to all interested parties, including politicians [60, 92, 93]. In this context, demonstrating cost-effectiveness is crucial as a lever to convince governments and policymakers that rehabilitation is not just a healthcare expense but a strategic investment. Highlighting the cost savings and long-term value generated by effective rehabilitation models can help make the case for continued funding and policy support, but doing so requires consistent evaluation and monitoring to inform decision-making. As healthcare systems worldwide face growing pressures on budgets, illustrating how rehabilitation can reduce overall healthcare costs—by preventing hospital readmissions, improving patient outcomes, and reducing the need for long-term care—becomes an essential argument for the sustainability and scalability of these programs. For example, the economic burden of disability in Canada is substantial, with direct costs such as healthcare, rehabilitation, and related services exceeding $25 billion annually [94–96]. These substantial direct and indirect costs underscore the critical need for significant investment in targeted rehabilitation services and comprehensive support systems. This necessity is highlighted by the World Rehabilitation Alliance's (WRA) Rehabilitation 2030 initiative, which stresses the importance of effective rehabilitation in improving health outcomes, lowering long-term care expenses, alleviating financial strain on families and society, and facilitating individuals' return to work, independence, and active participation in the workforce and community [6, 97].

4.1.3 | New Models of Care Should Align With Key Legislative Changes to Optimise Buy-In

As evidenced by this review, policy changes can significantly influence the implementation of innovative care models. However, these same policy shifts can also lead to the deimplementation or poor sustainability of such models if the political and funding climate is not conducive to their long-term success [81, 94]. For example, many of the studies reviewed presented models of care designed to address urgent challenges like access to care during the COVID-19 pandemic. Early in the pandemic, there was broad consensus among public health officials and politicians to rapidly adopt novel models, such as telerehabilitation or mobile clinics, in response to the need for social distancing and the limitations of in-person care [53, 67]. These models showed promising benefits, including increased access to care for vulnerable populations. However, as pandemic restrictions eased and the focus shifted back to ‘normal’ healthcare operations, many of these innovative models were abandoned, despite their demonstrated efficacy. The reversion to traditional in-person rehabilitation, even when novel models had shown positive outcomes, illustrates the impact of shifting policy priorities and the lack of sustained political will to support long-term innovation. This deimplementation highlights a critical challenge for the rehabilitation field: the need for policies that not only promote innovation but also ensure the continuity and scaling of effective models of care beyond the initial phase of adoption. Without ongoing political commitment and funding to support these models, even the most promising innovations risk being short-lived.

4.1.4 | New Models of Care Should Take a Multidisciplinary Approach

Seventeen studies described the importance of taking a multidisciplinary approach in the newly implemented care models. These articles described having diverse health professionals, patients and caregivers at the decision-making helm, and featured collaborative planning approaches like interdisciplinary case conferences, patient-centred planning, and active partnerships. For example, Harding described how having partnerships between physiotherapists, specialists, hospital administrators, and government agencies helped to secure buy-in and navigate the regulatory requirements of the new care model, thereby ensuring sustainability of the program [61]. While the benefits of a multidisciplinary approach are well recognised, the reality is far more complex. It is easy to call for such collaboration in theory, but integrating diverse groups of interested parties with differing priorities and expertise is fraught with challenges. Previous research showed that actively engaging key interested parties—including patients, caregivers and healthcare professionals—early and consistently can lead to greater buy-in and satisfaction with new care practices [79–81]. However, in a healthcare landscape characterised by high rates of burnout, workforce shortages, and systemic pressures [82], creating and maintaining these collaborative partnerships is no small feat.

In this context, the importance of meaningful engagement and collaboration cannot be overstated. Without the active and sustained involvement of all parties—particularly in today's environment of healthcare challenges—new models of care will struggle to gain traction, let alone succeed. The challenge is not just to 'bring people together,' but to create a true, functioning partnership that aligns goals, resolves conflicts, and ultimately fosters the sustainability and impact of innovative care models. Furthermore, for rehabilitation to truly succeed and be integrated into these models, it will require strong advocates not only within the rehabilitation professions but also from outside these traditional silos. Policymakers, administrators, and broader health system leaders must champion the value of rehabilitation in the context of the entire healthcare system. Without this broader support, the integration of rehabilitation into new models of care will remain fragmented and vulnerable to being deprioritized, no matter how successful the initial implementation may be.

4.1.5 | New Models of Care Should Draw on Appropriate Educational and Outreach Strategies

Finally, education and outreach strategies were lauded as key facilitators for ensuring innovative models of care were implemented and sustained. For example, Gramlich argued that education linked to patients and patient care increased awareness and adoption, providing the impetus for change. They suggested that high-quality patient education resources were valued, as was the need to educate staff and physicians about the benefits of the new care model, Enhanced Recovery After Surgery (ERAS), on patient outcomes. Additionally, they cited provincial policies and best practice standards, educational materials, and communication templates as key resources that could facilitate ERAS spread, scale, and sustainability. Finally, they used learning collaboratives to help promote the spread of ERAS knowledge between and across sites, allowing established teams to provide capacity building and support for new teams [60]. Gramlich's example highlights the importance of legitimate peripheral participation as a facilitator to implementing new models of care. According to Lave and Wenger, "legitimate peripheral participation is a way to speak about relationships between newcomers and old-timers, and about activities, artifacts, and communities of knowledge and practice" (p. 29) [98]. Participation refers to the process of being active participants in the practices of social communities and constructing identities in relation to these communities; learning involves engaging in and contributing to the sustained pursuit of a community's common goal and thus is an evolving form of membership in the community [99]. Developing a shared purpose and identity around a common goal may help all interested parties to champion the novel models of care as an important change worth sustaining.

4.2 | Study Strengths and Limitations

This study is novel. We did not locate any other reviews that explored new rehabilitation models of care, especially using a realist approach. This study used a robust explanatory sequential mixed methods approach to mitigate the challenges identified with extracting contexts, mechanisms and outcomes from each included article. Given that our review drew on evidence representing diverse epistemologies (e.g., qualitative studies reflecting constructivism, randomised controlled trials reflecting post-positivism), we did not complete a subjective rating of rigour, especially since CMOCs can be derived from any part of a document or any type of document [37]. The included articles did not specifically identify the contexts, mechanisms and outcomes of their interventions, potentially leading to the exclusion of valuable material through methodological appraisal [47]. To address this, our team engaged in regular peer debriefing sessions, fostering critical reflexiveness and enhancing our understanding. This iterative approach, informed by mixed methods research best practices, significantly increased the rigor of our realist-inspired narrative review [100]. Indeed, we found that integrating quantitative and qualitative data helped us to understand what innovations exist, as well as their promises and pitfalls. This novel approach also serves to advance evidence synthesis analysis and reporting, providing another synthesis approach for researchers looking to explore and integrate the findings of diverse studies. Moreover, our research team holds diverse areas of expertise, notably rehabilitation, education, health sciences, social sciences and implementation science.

Despite these strengths, this study has limitations. Due to substantial heterogeneity among the included studies, developing typical Context-Mechanism-Outcome Configurations (CMOCs) for realist reviews was challenging. The variability in reported contexts, mechanisms, and outcomes limited comparability. Following an approach similar to Jagosh et al. [47], we adapted our method to consistently extract, abstract and integrate data. This enabled us to narratively present the contexts, mechanisms, and outcomes in a cohesive manner despite the differences across studies. Moreover, most returns were from Australia and Canada, which allows for comparative research due to similar social contexts and health systems; however, potential limitations include the language that was used in our search strategy (i.e., models of care; innovations) since these words may be more frequently used in the Australian and Canadian rehabilitation contexts. It is possible that our use of this terminology excluded other country contexts that use different terms to describe innovative models of care. Running specific searches using specific terminology relevant to specific contexts (e.g., Low- and Middle-Income Country contexts as compared to High Income Country contexts) might yield other relevant results. Additionally, we only included articles that were written in English or French during a 20-year time period, potentially excluding relevant studies. Finally, we focused on studies primarily reporting models of care led by rehabilitation professionals. It is possible that care models relevant to rehabilitation may have been led by other professionals (e.g., nurses, physicians) and were not included in this review.

5 | Conclusion

In conclusion, as advocated by the World Health Organization (WHO) and the World Rehabilitation Alliance (WRA), there is an urgent call for greater access to evidence-based and person-centred rehabilitation care. However, if we are unable to identify care models that effectively meet these needs, we risk failing to address the growing demand for high-quality rehabilitation services. This gap in care model development could undermine efforts to improve access and outcomes, particularly for underserved populations, and hinder progress towards achieving global health and rehabilitation goals.

Integrating innovative rehabilitation models of care may help Canadians better access the care they need when they need it. The extant literature provides examples of care models implemented elsewhere, alongside the contexts, mechanisms and outcomes that may facilitate their implementation and/or sustainment. The innovations presented focused on enhancing access to care for underrepresented populations. They appeared to address many of the quintuple aim objectives, notably having positive implications for health equity, health outcomes, patient and provider satisfaction and confidence, and cost-effectiveness. The political and social contexts of innovative care models appeared to influence their acceptability, feasibility, and sustainability. For new models of care to be effectively implemented and sustained, they must clearly articulate their goals, obtain appropriate funding, align with key legislative or policy changes to optimise buy-in, take a multidisciplinary approach, have support from management, and include appropriate educational and outreach strategies that can be implemented amongst all interested parties. The included articles did not consistently report contexts, mechanisms or outcomes information. Future implementation research should consider reporting their results using appropriate reporting guidelines.

Acknowledgements

The authors wish to thank Rachel Klein and Ziqi Zhang for their help in screening articles for this review.

Ethics Statement

The authors have nothing to report.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are openly available in Borealis at https://doi.org/10.5683/SP3/VOGZ34.

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