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Theories, models and frameworks for health systems integration. A scoping review

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1. Introduction

1.1. Current landscape

Health systems are facing increasing pressures due to several factors such as the COVID-19 pandemic and rising health and social care demands. Policy makers, researchers, health managers, and practitioners are developing a range of solutions to address these increasing pressures on health system sustainability, with the aim of avoiding fragmentation or duplication of services, and maintaining a focus on quality, value-based care [1,2].

It has been suggested that health systems must evolve faster and efficiently to better meet existing and emerging needs [3]. Health systems are complex organizations characterized as "...a set of functions that generally include leadership and governance, financing, planning, commodities, workforce, service delivery and information systems with the ultimate goal to improve health outcomes" [4], with "a collection of interacting parts that function to achieve a shared aim" [5] and "encompass multiple sectors, organizations, and professionals involved in the delivery of health care services" [6].

1.2. Understanding health system integration: international challenges

Internationally, health system integration is being utilized as one of the main strategies to increase health system efficiency [7]. Integration of systems aims to develop common visions, focus resources, services and avoidance of working in silos [7,8]. Health systems in countries such as the United Kingdom [9], United Stated [7] and Australia [10] are increasingly becoming integrated. Interestingly, in these countries, particular emphasis is being given to the integration of primary health care [11,12], innovation of new models of care [13], and remuneration structures [14]. Despite this trend, many of the attempts to integrate health systems, services, and programs have been challenging, highlighting the complexity of integration processes to policy makers, researchers, health managers and practitioners [15,16].

This complexity may be due to the lack of a clear and consistent definition, and associated implementation strategies for health system integration, despite the concept of integration gaining popularity since the 1990s [17]. The term "integration" has been used interchangeably with "integrated care" and other terms such as "integrated delivery systems", "systems integration", "interdisciplinary communication" and "patient care teams" [18]. While integration is primarily directed to integrating healthcare systems, integrated care predominantly focusses on patient care [19,20].

Some authors suggest that the lack of agreement on defining integration, combined with a paucity of literature on integrated health systems, has made it difficult to make progress in developing integration science [19,21,22]. However, a common definition of health system integration is "the coordination of health services and the collaboration amongst provider organizations to establish an effective health system" [21,23]. As suggested by Shortell et al. [24], integration may not be viewed as an end goal, but rather a process to achieve other outcomes, such as integrated care or improved market performance of the system and ultimately, a way to enhance health outcomes.

Since 2013, there's been a noticeable gap in literature regarding theories, models, and frameworks of health system integration [6]. While the Evans study [6] offered a broad overview of integration strategies, with an emphasis on the evolution from institutional to community-focused care, this study not only updates their findings but also analyzes the theories, models and frameworks to identify their

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various components. Breaking down healthcare integration into its key components may facilitate the development of more effective strategies, as well as being able to evaluate the impact of various components of healthcare integration interventions.

1.3. Objective

The objective of this scoping review is to provide a summary of literature that identifies theories, models, or frameworks used in health systems integration. The specific objectives were to:

1. Identify and catalog the theories, models, or frameworks employed in health system integration.
2. Analyze the common and distinguishing components in these theories, models, or frameworks.

The ultimate objective was to enhance the understanding of the components to facilitate informed selection and adaptation by policymakers, practitioners, and researchers to aid the development of effective strategies and decisions tailored to specific contexts.

2. Methods

A systematic scoping review of studies reporting theories, models or frameworks for health systems integration was performed using the JBI guidance as recommended by Cochrane [25]. The review is reported following the PRISMA guideline for scoping reviews [26]. A qualitative content analysis of the selected publications was performed using an amended methodology described by Levac [27].

2.1. Literature search

A comprehensive review by Evans et al. [6] from 1985 to 2013, reporting the main strategies in health system integration through a content model analysis, was used as the starting point to identify theories, models or frameworks applied in health. A search was performed in five databases including Medline, Scopus, PsycInfo, Cochrane library and Web of Science between January 2013 and April 2023. Reference lists of the included articles were reviewed to identify further relevant articles. The selected search terms were similar to those applied by Evans et al. [6].

The search strategy in PubMed, which includes Medline and PubMed Central databases, was: (integrated delivery system" OR "organized delivery system") AND ("systems integration") AND ("integrated health care" OR "integrated services" OR "integrated system OR integrated delivery"). The search strategies used for other databased are in Appendix 1. The terms theories, models and frameworks were not used in the search strategy as in the preliminary work up in developing the search strategy it was found that these limited the search.

2.2. Eligibility criteria

Articles were included if they described a theory, model, or framework for health system integration. Articles were excluded if they described: (1) integration of specific programs or services for different populations groups; (2) case studies (3) models of integrated care; (4) different types of health care organizations; and (5) the types of integration but not incorporated them into a theory, model or framework.

Nilsen's classification of theories, models, and frameworks was used as a guide for this review [28] and is summarized as follows:

- A theory is a system of analytical rules or propositions intended to organize our observations, understandings, and world explanations. Theories focus on the relationships or connections between variables.
- A model is an intentional simplification of a phenomena or a particular feature of a phenomenon. Models do not have to be perfect representations of reality to be useful. Models are theories with a more narrowly defined scope of explanation; whereas a theory is both explanatory and descriptive, a model is descriptive.
- A framework is a structure, overview, outline, or plan made up of numerous descriptive categories, such as elements, components or variables, and the relationships that are supposed to explain a phenomenon. Frameworks do not give explanations; they just describe empirical facts by putting them into a predetermined set of categories.

In essence, a theory would be the most developed and complex form to explain how and why certain interactions lead to certain outcomes. A model provides a description less developed but more elaborate than a framework, which is a straightforward representation of the different elements or components.

2.3. Data extraction and analysis

One author (CP) reviewed titles and abstracts and was overinclusive. If any doubts arose a second author (SB) was consulted. The selected articles were reconsidered for inclusion applying the inclusion and exclusion criteria in a full-text review. Any uncertainty related to the paper selection was resolved through discussions between two authors (CP and SB) and, when consensus could not be reached a third author (MAG) was consulted. A qualitative content analysis of the included studies was applied to extract the data using the methodology described by Levac [27] which was based on the Arksey and O'Malley [29] framework. This research used the methodology [27] consisting of six stages: Identifying the Research Question, Search Strategy, Study Selection, Charting the Data, Collating, Summarizing, and Reporting the Results and Consultation. These six steps were followed in the research process for this literature review. Data were coded using a deductive and descriptive method. The analysis was documented using Microsoft Word and Excel 2016.

3. Results

3.1. Characteristics of included studies

The literature search produced 5584 records with 4094 records remaining after removing duplicates. The screening by title and abstract yielded 424 records for full-text eligibility, of which 36 were finally included in the data extraction. (See PRISMA diagram (Fig. 1)).

3.2. Components of the theories, models or frameworks of health system integration

Overall, two theories (Table 1), fifteen models (Table 2) and eight frameworks (Table 3) were identified from the included studies. Details of the identified theories, models and frameworks are provided in Appendix 2.

Through qualitative content analysis aimed at identifying trends, patterns, and themes in the literature, eleven components emerged, as shown in Fig. 2. They are described in order of frequency, below.

Stakeholders' Management (n = 22) was the most frequently mentioned component (Fig. 2) and refers to the strategic engagement and alignment of all parties involved in health care. It emphasizes the importance of strong relationships among health providers, organizational members, and decision-makers. This component highlights the vital role stakeholders have in guiding, supporting, and implementing changes to achieve successful health system integration.

Adequate Funding (n = 19) speaks to the strategic allocation and management of financial assets to drive health integration. It entails sourcing funds from varied channels, both public and private, and

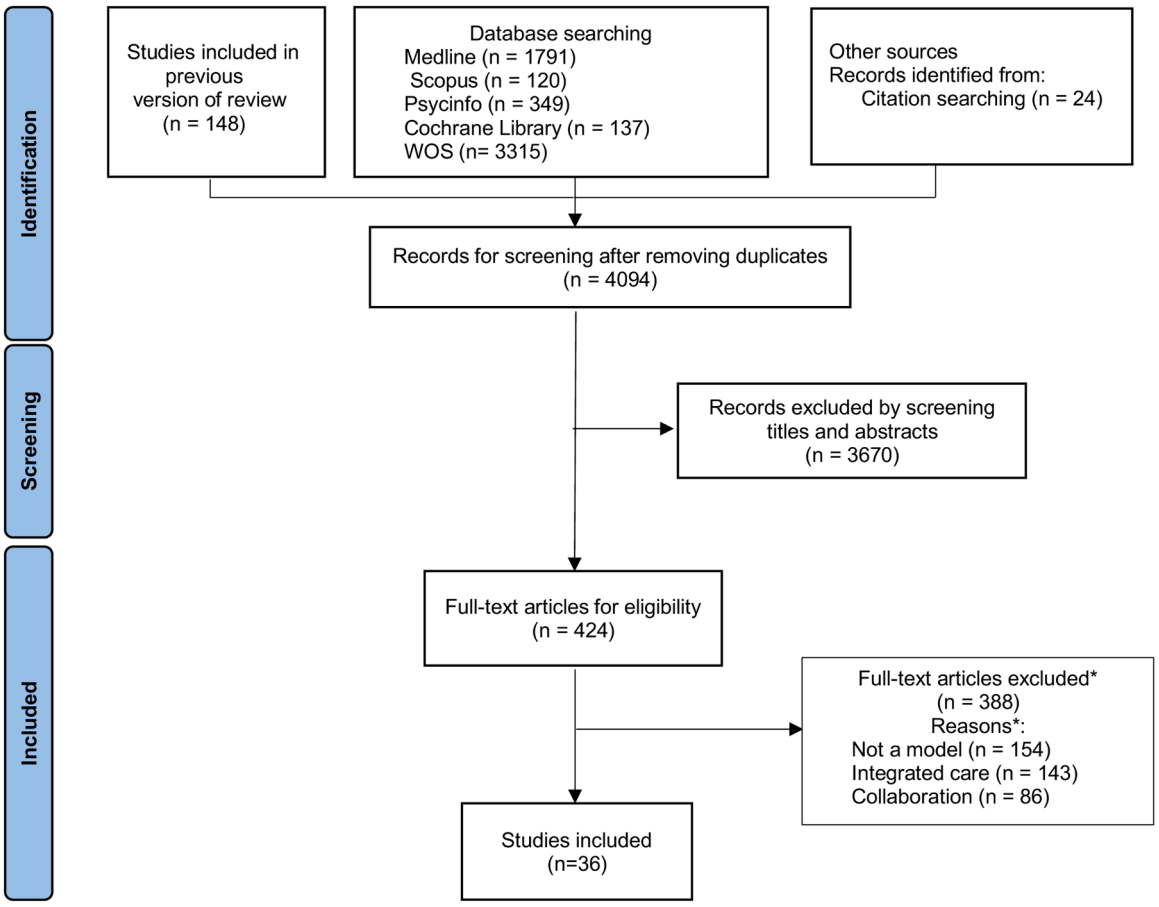

Fig. 1. PRISMA flowchart of study selection process.

Table 1
Integration components targeted by health system integration theories.

Health Systems Integration Theory	Stakeholder management	Adequate funding	Technological connectivity	Roles	Governance	Communication	Shared vision, values and goals	Context	Culture	Community engagement	Co-location
Complex Adaptive System [30–36,15]	X	✓	✓	✓	✓	✓	✓	✓	✓	X	X
Integration degree [37, 38]	✓	✓	✓	X	X	✓	✓	✓	✓	✓	✓

Summary: (✓) component present; (X) component absent.

leveraging a combination of monetary and non-monetary incentives to steer health system integration endeavors effectively.

Technological connectivity (n = 19) is about the creation and effective use of shared technological platforms. These platforms ensure consistent and efficient sharing of vital information, ranging from medical records to clinical data, promoting better communication and a streamlined delivery of services.

Roles (n = 18) emphasizes ensuring that every stakeholder in the health system understands their specific functions and responsibilities. This clarity ensures a harmonized approach to care, with everyone aligned in their roles during the integration journey.

Governance (n = 18) involves crafting and implementing an organizational blueprint that consists of governing boards, leadership assemblies, and steering committees. Such structures are imperative to guaranteeing smooth coordination, policy updates, and setting the strategic course in integrated health environments.

Communication (n = 18) entails systematic and strategic interactions within the health system framework. With regular engagements, efficient data transmission, and structured meetings, it aims to promote cohesive team-oriented approach.

Shared Vision, Values, Goals, and Trust (n = 18) highlights the importance of consensus and alignment among all stakeholders. This involves setting collective goals, upholding agreed-upon ethical values, and fostering an environment of trust, which is often enriched by previous collaborative endeavors and partnerships.

Context (n = 16) recognizes the need for adaptability and underscores the importance of tailoring health integration strategies to local conditions, the market dynamics or specific regional factors, such as institutional context, organizational structure, demographic, economic, political, legal, ecological, socio-cultural, and technological

Table 2
Integration components targeted by health system integration models.

Health Systems Integration Model	Stakeholder management	Adequate funding	Technological connectivity	Roles	Governance	Communication	Shared vision, values and goals	Context	Culture	Community engagement	Co-location
Model for an Integrated Health System [21]	✓	✓	X	✓	✓	X	X	✓	X	X	X
Network Integration [39]	X	X	X	✓	X	X	✓	X	X	X	X
The Landscape of Physician–System Integration Model [40]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Integration of Community Health and Prevention into Community-based Primary Care [41]	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	X
The McKinsey 7S Model [42,43]	✓	X	✓	✓	✓	✓	✓	X	✓	✓	✓
Conceptual Model of Integration Types [44]	✓	X	✓	✓	✓	✓	✓	✓	✓	✓	✓
Integrated Primary Care [16]	✓	✓	X	✓	X	✓	X	X	✓	X	✓
Provider-based Conceptual Model [45]	✓	X	X	X	X	X	X	X	X	X	✓
Continuum of Integration [18]	X	✓	✓	✓	✓	✓	✓	✓	X	X	X
Outcome Map [46]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Model of Integrated Service Delivery [47]	✓	X	✓	✓	✓	✓	✓	✓	X	X	X
The 3C's Model [40]	✓	✓	✓	✓	✓	✓	✓	X	✓	✓	X
The integration toolkit and the Building Blocks of Integration [24]	✓	✓	✓	✓	✓	✓	X	X	X	✓	X
The Embedded CAS Conceptual Model [48]	✓	X	✓	X	✓	✓	X	✓	✓	X	X
An integrative model of physician hospital alignment [49]	✓	✓	✓	✓	X	X	X	X	X	X	X

Summary: (✓) component present; (X) component absent.

factors, in the environment where integration will take place. It's about ensuring relevance and responsiveness.

Culture ($n = 15$) focuses on cultivating a shared understanding of group dynamics, stories, and values. Leaders and managers play a pivotal role, ensuring that the environment champions collaboration and places emphasis on normative unity.

Community Engagement ($n = 14$) is about proactively drawing the broader community into the integration process. By aligning with the needs, preferences, and values of patients and families, this component ensures the integration echoes the principles of people-centric care.

Co-location ($n = 10$) was the least mentioned component and it emphasizes the importance of placing health service providers in shared or nearby locations.

4. Discussion

4.1. Summary of findings and contribution to the literature

This review provides an up to-date mapping of the theories, models and frameworks available for health systems integration. Key components are identified to assist policy makers, researchers, and other stakeholders in selecting the most suitable or mix of theories, models or frameworks to meet their specific objectives.

The literature revealed differences in the number of theories (Table 1), models (Table 2), and frameworks (Table 3). In addition to the two integration theories identified in this review, some integration models applied theories derived from other disciplines such as economic or organizational theories i.e.: *Open systems theory (LOPSI model)* [2], *collaborative capital (Outcome Map)* [46] and *Institutional economic theory (Continuum of integration)* [18]. These theories were not included in this scoping review since they were not specific to integration.

Additional terminologies, including network, mapping or toolkit, were used by several authors to describe theories, models and frameworks of health systems integration [24,39,46]. For consistency of analysis, these were recategorized as theories, models or frameworks according to the definitions by Nilsen [28] previously described. As Nilsen P. states, there is a significant degree of overlap between these categories.

Table 3
Integration components targeted by health system integration frameworks.

Health Systems Integration Framework	Stakeholder management	Adequate funding	Technological connectivity	Roles	Governance	Communication	Shared vision, values and goals	Context	Culture	Community engagement	Co-location
Analytical Framework for Integration [50]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
Conceptual Framework: Five Health Care Activities that Facilitates Integration [51]	✓	✓	X	X	X	X	✓	✓	X	✓	X
The Four Domain Integrated Health Framework [52]	✓	✓	X	X	X	X	X	✓	X	✓	X
Theoretical Framework of Different Forms of Integration [53,54]	✓	✓	✓	✓	✓	✓	✓	X	X	X	✓
Monitoring and Evaluation Framework of Integration [55]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X
Conceptual Framework for Analysing Integration of Targeted Health Interventions into Health Systems [4]	✓	✓	✓	X	✓	X	✓	✓	✓	✓	X
Framework for an Integrated System Scorecard [56]	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	✓
Framework for examining integration [17]	✓	✓	✓	X	✓	✓	✓	✓	✓	✓	✓

Summary: (✓) component present; (X) component absent.

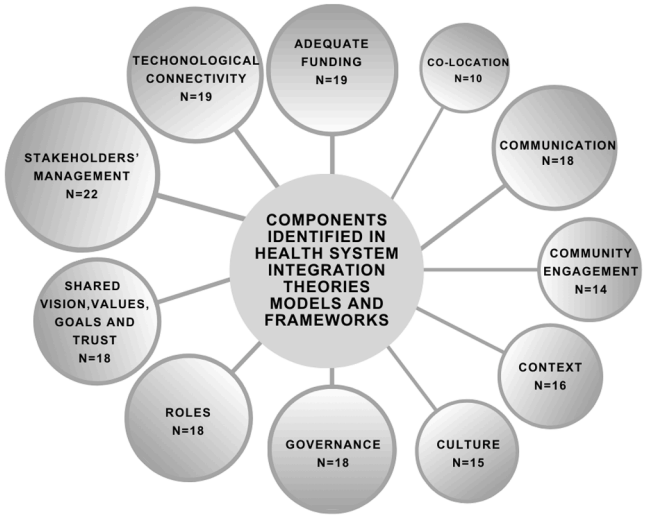

Fig. 2. Bubble plots showing the distribution of components of the theories, models or frameworks of health system integration. Foot note: Each bubble in the figure represents a key component of theories, models or frameworks of health system integration. The size of the bubble is proportional to the number of times the component was identified in studies.

4.2. Similarities and differences in health system integration theories

Interestingly, only two theories were identified in this review (Table 1). *The Integration Degree theory* [37,38], suggests that health integration is a gradual process that involves different levels of integration, with each level building on the previous one. The theory proposes that health integration can be measured by the degree of integration, which is determined by the extent of interdependence and cooperation among organizations. It also suggests that there are different types of integration, such as functional, structural, and operational, each of which serves a specific purpose.

Comparatively, the *Complex Adaptive System (CAS) theory* [35], views health integration as a complex and adaptive process that is influenced by various factors such as the characteristics of the organizations involved, the external environment, and the interactions among organizations. The theory suggests that health integration is nonlinear and is subject to constant change, as new structures and patterns of behaviour emerge.

Both theories suggest that health integration is complex and influenced by various factors, such as the characteristics of the organizations involved and the external environment. Both theories suggest that health integration involves cooperation and interdependence among organizations. Additionally, both emphasize communication and technological connectivity among organizations for successful health integration. However, in *the Integration Degree theory*, communication and

technological connectivity is suggested to be important for achieving different levels of integration, while in the *Complex Adaptive System (CAS) theory* [36], communication and technological connectivity are important for facilitating the adaptive process, to create more rapid responses for new situations and challenges and the emergence of new structures and patterns of behaviour [32,35].

Integration degree theory may be easier to adapt to each health system integration context or specific programs, as suggested by McVicar [37]. However, *CAS theory* emphasizes the importance of all stakeholders in the process, the analysis of the preestablished hierarchy and the relevance of adaptability for future events.

4.3. Similarities and differences in health system integration models

Most of the models identified ($n = 15$) (Table 2) emphasized the importance of cooperation and interdependence among organizations to achieve effective health integration. Some differences between models included the specific focus or goal of the model, the intensity of integration it aims to achieve [40], the type of integration it emphasizes (such as functional, structural, or operational) [57], the specific components or elements it includes, the type of organizations or stakeholders it targets, the level of adaptability or flexibility it allows for, the data or metrics used to measure successful integration, the underpinning theoretical or conceptual framework, and the level of complexity or simplicity of the model. For example, *Network integration* [39] emphasizes the role of networks in facilitating communication and cooperation among organizations. In contrast, *The Landscape of Physician–System Integration (LOPSI) model* [2] covers all components but was highly focused on the integration of physicians into the healthcare system, which may not be appropriate for all organizations or goals. The *3C's Model* [40] emphasizes the integration, coordination, and continuity of care, providing a comprehensive approach to health system integration.

4.4. Similarities and differences in health system integration frameworks

Eight frameworks were identified in this review which appear to have similarities (Table 3). All the identified frameworks focus on analyzing and evaluating different aspects of integration in health systems, facilitating integration within health systems, assessing performance, and understanding the different forms of integration in health systems. However, they differ in their specific elements, activities, domains, and approaches used to evaluate and analyze integration. For example, *The Analytical Framework for Integration* [50] focuses on governance, financing, service delivery, human resources, and information systems. Comparatively, *the 5As framework* focuses on five activities (Awareness, adjustment, assistance, alignment, and advocacy) [51] while the *4DIH framework* [52] focuses on four domains of integration, such as the nature of the problem, the structure of the health system, systems of care and global priorities. The *Theoretical Framework of Different Forms of Integration* [53] provides a theoretical understanding, based on Axelsson and Bihari Axelsson [54], outlining different strategies to be used in integration processes. *The M&E framework* [55] provides a structure for monitoring and evaluating the progress and impact of integration in health systems. This includes defining health challenges specific to the country, identifying crucial points of contact for care, creating logic models to outline possible causal pathways, and enhancing the health information system and data utilization.

4.5. Exploring the key components of theories, models or frameworks used in health systems integration

All the components identified may be applicable at varying intensity to all actors in the integration process. For example, from a politician's perspective when developing a policy, policy makers might prioritize 'stakeholder management' and 'adequate funding' due to the need for political support and fiscal purposes. Meanwhile, for an administrator, 'governance', 'community engagement' and 'technological connectivity' might be more relevant due to organisational reasons.

4.5.1. Stakeholder management

Building relationships and finding ways to bring together various and different perspectives to create a shared understanding among all parties is of major significance [46,51]. Several experts [31,37] argue that changes to the organizational structure and management culture may be necessary to promote stakeholder participation. For example, Shortell et al. [47] suggests a shift towards a "new management culture" which could involve creating more decentralized and participatory decision-making processes, in addition to establishing clear lines of communication and accountability between different stakeholders.

Other strategies for promoting stakeholder participation in health integration systems may include incentivizing collaboration through financial or non-financial rewards, providing training and support for effective teamwork and communication, and fostering a shared sense of mission and purpose among stakeholders. Ultimately, success of health system integration appears to depend on active engagement and participation of all stakeholders, and ongoing efforts are needed to promote this collaboration and cooperation.

4.5.2. Adequate funding

Effective integration of health systems requires changes in organizational structures and processes and sufficient financial resources for sustainability. Inadequate funding limits the success of integration efforts, as organizations may not have the necessary resources to support new activities and roles. Several studies emphasize the need for identifying the optimal regulation and budgetary support to fully realize the value of health system integration [31]. Various types and sources of funding were identified in this review, including global hospital budgets, pay-for-performance, medical offsets or even a combination of monetary and non-monetary incentives [32].

4.5.3. Technological connectivity

Technological connectivity plays a crucial role in the success of health system integration. Different solutions to resolve technological connectivity were found, particularly a common platform, technology or system [32,42,43] to share data and information. This was identified to improve clinical decision-making, reduce errors, improve patient outcomes, achieve certainty in interprofessional teamwork, facilitate communication [32], improve service delivery systematization and predictability [56], prevent delays in care, avoid duplication of efforts, and ensure patients receive the most appropriate and timely care.

4.5.4. Roles

Health system integration required clarity of roles [44,46] in the majority of the theories, models and frameworks found in the literature ($n = 18$). Health providers require role delineation [15,42] and an understanding of the role of each provider, i.e., the establishment of clear responsibilities for providers responsible for the same patient's care. Singer et al. [44] suggest that defining of roles and duties may shift from "little appreciation of other's role" to "in-depth understanding of others roles" [16]. However, the *CAS theory* [32] suggests that roles should not be strictly defined because the competencies required for a task belong not to an individual agent but to the cooperation of the different agents and the focus should be more on agreed actions.

4.5.5. Governance

Several of the theories, models and frameworks for health systems integration presented a governance or leadership structure with all stakeholders represented [50] to sustain the progress of the integration process [42]. Furthermore, shared accountability [46], and managing "competing interests" were also highlighted as important for strong governance [50]. Sims et al. [58] highlighted that a shared mission/vision, supportive relationships, trust and effective communication

are required for effective governance. Management, governance, and clinical practice elements should be developed and aligned to fully support integration efforts [17,24].

4.5.6. Communication

Communication was a central component among theories, models and frameworks of this review. It was suggested that effective communication may transform into less bureaucracy and administrative work [24,47,48], increase efficiency [33,34], and interprofessional enhanced trust, to arrive to a shared concept of team-based care [16]. Many different ways to promote communication were suggested, such as regular meetings, joint planning and decision-making, face-to-face interactions, implementing shared patient electronic health records, formal communication protocols and practices or informal conversations [35,49,53].

4.5.7. Shared vision, values and goals

Overall, the identified theories, models and frameworks highlighted the value of a shared vision among health providers are required to align values, goals and reasons such as an improvement in health outcomes [16], a reduction in costs [15], address health disparities, enhance quality of life, decrease wait time, and improve access to care [41]. It was suggested that consensus may be reached through care-planning meetings [50,53,54], and programs for policy decision makers [55] to ensure a clear understanding on the objectives of the system [56].

4.5.8. Context

Individual countries have different economic, political and business [59] contexts or legal conditions that impact health system integration [21]. For instance, the economic landscape, political priorities, and legal frameworks can shape the strategies and outcomes of integration efforts Singer et al. [44] suggest that context can be understood as internal and external organizational characteristics, whereas internal context is related to the size of the health system, number of practice sites or specialty mix, whereas external context is related to the structure of the health market, which also has an influence on the integration process [45].

4.5.9. Culture

A need for including a component on cultural transformation in health system integration was identified in the theories, models and frameworks through the adoption of norms and with an understanding of the environment of work is advocated [46]. It is shown that the adoption of new ideas and technologies are impacted by dominant cultural norms and principles held by organizations in the integration process [4]. It is suggested that organizations should cultivate a learning culture that considers both individual and group needs. Organizational narratives play a role in shaping culture, and personal stories are important in building group solidarity and creating a shared vision. Stories can be used to bring together the multiple professional identities within an organization into a shared cultural identity that can drive improvement [30].

4.5.10. Community engagement

Community engagement is a crucial aspect of health system integration as it involves the involvement of the population and patients in the integration process and the assessment of their health needs [4,55]. Different strategies to promote community engagement have been identified, such as community outreach, community meetings, partnerships, advisory groups, health literacy and education [41,54]. These strategies provide feedback and guidance for quality improvement, communication between providers and patients, and alignment of local solutions to local problems [40]. The involvement of the community, as a whole, is significant because it helps to overcome limited awareness and understanding across organizations and professionals [52]. Through community engagement, it is suggested that health providers can better understand the specific needs and priorities of the communities they serve [44,60]. Sharing information at the local level fosters integration and engagement [36].

4.5.11. Co-location

Co-location was the least mentioned component for health system integration and rather identified as a “collaboration facilitator” [37] for improved communication and information exchange among team members. When individuals work in proximity, they are more likely to engage in face-to-face communication and build relationships based on trust, shared purpose, and mutual understanding. This can help to break down silos and improve coordination and integration between different health providers and organizations [42]. Co-location is also suggested to facilitate the sharing of resources and expertise, allowing for more efficient and effective delivery of care [44]. However, other authors [56] argue that there is no empirical evidence to support the effectiveness of co-location in the integration process and that the services could be functioning normally in individual facilities, without any focus on coordinating with other locations. Face-to-face contact, regular meetings and use of technology may help to overcome this barrier of sharing space or physical proximity.

4.6. Implications for future practice, policy, and research

This scoping review provides insights for researchers, decision-makers and political leaders in designing integration strategies that suit the specific characteristics of their health systems. Integration of health organizations and professional groups such as physicians [2], nurses [4,42], pharmacists [61], social workers [51], administrative staff [16] and patients [41,60], can lead to better use of resources, improved health outcomes, and reduced administrative workload [17, 40]. While organizational and process-focused strategies such as governance, information technology, and data are important, they alone seem insufficient [30].

This review found that there is no dominant health system integration theory, model or framework suggesting that a one-size-fits-all solution may be ineffective [62]. The eleven components identified in theories, models and frameworks have different applicability and intensity for the three levels (i.e. micro at a local practice level, meso at a state level, macro at a national level) of health system. ‘Adequate funding’, ‘stakeholder management’ and ‘governance’ may apply to all levels. ‘Roles’ and ‘co-location’ are particularly more relevant to the micro level. However, what is clear is that it is crucial to consider the social and political dimensions of health systems and involve healthcare providers in the process to promote a grass-roots professional movement, foster a commitment to a common purpose, and build a trusted network. The findings of this review highlight the need for further research into health system integration, particularly in terms of developing and evaluating effective theories, models and frameworks.

4.7. Limitations

There are several limitations to this review. First, there is no agreement on a definition of the term "integration" in the literature, and as such not all studies may have been identified because of the search strategy applied. Secondly, as the focus of this review is on the published scientific literature, relevant information in the grey literature may have been omitted. Additionally, although only one author (CP) reviewed titles and abstracts, and this acknowledged as a limitation, there were many general discussions with other authors (SB). Furthermore, while the review identified key components for integration, it did not delve into specific barriers and facilitators influencing the effectiveness of integration across different settings. The identified theories, models, and frameworks were not thoroughly categorized based on the particular health professionals involved in the integration process. Finally, this study did not explore methods for quantifying the intensity or degree of

integration and its various components.

5. Conclusions

This review suggests that health system integration is a complex and multifaceted process that requires the management and participation of multiple stakeholders. The theories, models and frameworks identified in this review may be used to develop integrated health systems that provide, amongst other outputs, seamless care across different providers and settings, such as specialist care and primary care.

The identification of 11 key components provides a useful starting point for policymakers and practitioners to understand the factors that are essential for successful integration. These components have a broad range of potential applications, which can span the various levels (micro, meso, and macro), geographic scopes (local, regional, and national), and organizational boundaries (within or across organizations). In addition, the maturity of health care systems may be an important contextual issue to consider. They offer flexibility and applicability to diverse contexts and settings, enabling their use across a wide spectrum of healthcare integration initiatives.

These components help understand, select models, initiate integration, and implement integrative approaches effectively. They apply at different stages of integration, from planning to ongoing improvement. However, they may have some application in other forms outside integration of health systems.

Further research into the application of these findings have the potential for health system integration which subsequently may lead to improving the overall quality of care and outcomes for patients.

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CRediT authorship contribution statement

Celia Piquer-Martinez: Conceptualization, Formal analysis, Writing – original draft, Writing – review & editing. **Amaia Urionagüena:** Conceptualization, Writing – review & editing. **Shalom I. Benrimoj:** Formal analysis, Supervision, Writing – original draft, Writing – review & editing, Conceptualization. **Begoña Calvo:** Writing – review & editing. **Sarah Dineen-Griffin:** Writing – review & editing. **Victoria Garcia-Cardenas:** Writing – review & editing. **Fernando Fernandez-Llimos:** Writing – review & editing. **Fernando Martinez-Martinez:** Supervision, Writing – review & editing. **Miguel Angel Gastelurrutia:** Supervision, Writing – review & editing.

Declaration of competing interest

The authors report no conflict of interest.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.healthpol.2024.104997.

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Appendix 1. Search strategies

Medline: (integrated delivery system OR organized delivery system) AND (systems integration) AND (integrated health care OR integrated services OR integrated system OR integrated delivery)

Scopus: (("integrated delivery system" OR "organized delivery system") AND ("systems integration") AND ("integrated health care" OR "integrated services" OR "integrated system" OR "integrated delivery")) (("integrated delivery system" OR "organized delivery system") AND ("systems integration") AND ("integrated health care" OR "integrated services" OR "integrated system" OR "integrated delivery"))

PsycInfo: (integrated delivery system OR organized delivery system) AND (systems integration) AND (integrated health care OR integrated services OR integrated system OR integrated delivery) Filter: 2013-2023

Cochrane: (integrated delivery system) (organized delivery system) (systems integration) (integrated health care) (integrated services) (integrated system) (integrated delivery)
(#14 OR #15) AND (#16) AND (#17 OR #18 OR #19 OR #20) (Word variations have been searched)

WOS: (("integrated delivery system" OR "organized delivery system") AND ("systems integration") AND ("integrated health care" OR "integrated services" OR "integrated system" OR "integrated delivery"))