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COMPETÊNCIAS DOS ENFERMEIROS GESTORES EM UNIDADES DE CUIDADOS INTEGRADOS: SCOPING REVIEW
COMPETENCIES OF NURSE MANAGERS IN INTEGRATED CARE UNITS: SCOPING REVIEW
COMPETENCIAS DE LOS ENFERMEROS GERENTES EN UNIDADES DE CUIDADOS INTEGRADOS: SCOPING REVIEW

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RESUMO

Introdução: A gestão eficaz dos cuidados de saúde é essencial para assegurar qualidade, continuidade e coordenação, sobretudo em modelos integrados. Em Portugal, as Unidades Locais de Saúde constituem uma reforma para articular cuidados primários e hospitalares. Os gestores de enfermagem assumem um papel central, mas as suas competências específicas permanecem pouco definidas.

Objetivo: 1) Identificar as competências essenciais exigidas aos gestores de enfermagem em contextos de cuidados integrados; 2) Caracterizar essas competências essenciais quanto à sua natureza, dimensão e âmbito de aplicação em contextos de cuidados integrados.

Métodos: Realizou-se uma revisão de escopo, como fase inicial de um estudo de métodos mistos, de acordo com a metodologia do *Joanna Briggs Institute* e reportada através da estrutura PRISMA-ScR. Com base no modelo PCC, pesquisaram-se as bases de dados PubMed/MEDLINE, CINAHL, Scopus, Web of Science, LILACS e literatura cinzenta. Dois revisores, de forma independente, selecionaram os estudos e extraíram os dados. As competências foram sintetizadas por análise temática, recorrendo a codificação híbrida dedutivo-indutiva ancorada na Teoria do Cuidado Burocrático de Ray.

Resultados: Identificaram-se seis domínios de competências: técnico, comportamental, interprofissional, gestor, educacional/desenvolvimental e clínico. As diferenças entre cuidados primários e hospitalares evidenciaram a necessidade de perfis diferenciados e estratégias de adaptação. As principais barreiras à integração foram a resistência cultural, a fragmentação dos sistemas e escassez de recursos; os facilitadores incluíram a comunicação eficaz, os valores partilhados e os sistemas de informação integrados. Destacou-se a relevância do desenvolvimento contínuo, planeamento da sucessão e apoio organizacional.

Conclusão: As funções dos enfermeiros gestores em cuidados integrados são complexas. O seu reforço exige investimento em competências, apoio institucional e alinhamento com os valores da integração. Estes resultados oferecem base para programas de formação que promovam liderança, coordenação de equipas e sustentabilidade dos sistemas de saúde integrados.

Palavras-chave: enfermeiros administradores, cuidados de saúde primários, liderança, gestão de recursos humanos

ABSTRACT

Introduction: Effective healthcare management is essential to ensure quality, continuity, and coordination, especially in integrated models. In Portugal, Local Health Units are a reform designed to coordinate primary and hospital care. Nursing managers play a central role, but their specific competencies remain poorly defined.

Objective: 1) To identify the essential competencies required of nurse managers in integrated care settings; 2) To characterize those essential competencies in terms of their nature, scope, and context of application in integrated care settings.

Methods: A scoping review was conducted as the initial phase of a mixed-methods study, in accordance with the Joanna Briggs Institute methodology and reported using the PRISMA-ScR framework. Based on the PCC framework, the databases PubMed/MEDLINE, CINAHL, Scopus, Web of Science, LILACS, and grey literature were searched. Two reviewers independently selected the studies and extracted the data. The competencies were synthesized through thematic analysis, using a hybrid deductive-inductive coding approach grounded in Ray's Theory of Bureaucratic Caring.

Results: Six domains of competencies were identified: technical, behavioral, interprofessional, managerial, educational/developmental, and clinical. The differences between primary and hospital care highlighted the need for differentiated profiles and adaptation strategies. The main barriers to integration were cultural resistance, fragmentation of systems, and scarcity of resources; facilitators included effective communication, shared values, and integrated information systems. The relevance of continuous development, succession planning, and organizational support was highlighted.

Conclusion: The roles of nurse managers in integrated care are complex. Strengthening them requires investment in skills, institutional support, and alignment with integration values. These findings provide a basis for training programs that promote leadership, team coordination, and sustainability of integrated health systems.

Keywords: nurse administrators, primary health care, leadership, personnel management

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RESUMEN

Introducción: La gestión eficaz de la atención sanitaria es esencial para garantizar la calidad, la continuidad y la coordinación, especialmente en los modelos integrados. En Portugal, las Unidades Locales de Salud constituyen una reforma para articular la atención primaria y hospitalaria. Los gestores de enfermería asumen un papel central, pero sus competencias específicas siguen estando poco definidas.

Objetivos: 1) Identificar las competencias esenciales exigidas a los gestores de enfermería en contextos de cuidados integrados; 2) Caracterizar esas competencias esenciales en cuanto a su naturaleza, dimensión y ámbito de aplicación en contextos de cuidados integrados.

Métodos: Se realizó una revisión de alcance como fase inicial de un estudio de métodos mixtos, de acuerdo con la metodología del Instituto Joanna Briggs y presentado siguiendo el marco PRISMA-ScR. A partir del modelo PCC, se buscaron las bases de datos PubMed/MEDLINE, CINAHL, Scopus, Web of Science, LILACS y literatura gris. Dos revisores seleccionaron de forma independiente los estudios y extrajeron los datos. Las competencias se sintetizaron mediante análisis temático, utilizando una codificación híbrida deductivo-inductiva basada en la Teoría del Cuidado Burocrático de Ray.

Resultados: Se identificaron seis ámbitos de competencias: técnico, conductual, interprofesional, gerencial, educativo/de desarrollo y clínico. Las diferencias entre la atención primaria y la hospitalaria pusieron de manifiesto la necesidad de perfiles diferenciados y estrategias de adaptación. Las principales barreras para la integración fueron la resistencia cultural, la fragmentación de los sistemas y la escasez de recursos; los facilitadores incluyeron la comunicación eficaz, los valores compartidos y los sistemas de información integrados. Se destacó la importancia del desarrollo continuo, la planificación de la sucesión y el apoyo organizativo.

Conclusión: Las funciones de los enfermeros gestores en la atención integrada son complejas. Su refuerzo requiere inversión en competencias, apoyo institucional y alineación con los valores de la integración. Estos resultados ofrecen una base para programas de formación que promuevan el liderazgo, la coordinación de equipos y la sostenibilidad de los sistemas de salud integrados.

Palabras clave: enfermeras administradoras, atención primaria, liderazgo, administración de personal

INTRODUCTION

Effective health care management is essential to ensuring the quality, accessibility, and continuity of services delivered by the Portuguese National Health Service (SNS). In Portugal, the SNS Statute (República Portuguesa, 2022) establishes proximity, integration, and coordination of care as fundamental principles for the functioning of public health entities. Within this framework, Local Health Units (LHU) have emerged as an innovative organizational model, introduced by Decree-Law Nº 102/2023 (República Portuguesa, 2023), designed to improve coordination between primary and hospital care. Simultaneously, the decentralization of responsibilities to local municipalities, as mandated by Decree-Law Nº 23/2019 (República Portuguesa, 2019), has reshaped administrative dynamics within Primary Health Care Groupings, with direct implications for the provision of primary care services (Cantante et al., 2020; Ray, 2024). However, despite these structural and policy changes, there is still a limited understanding of the specific competencies required of nurse managers to operate effectively in integrated care settings. Existing evidence remains dispersed and often focuses on general management or leadership skills, without systematically mapping the competencies most relevant to the articulation between primary and hospital care. This gap constrains the development of targeted training and organizational strategies for nurse managers within integrated health systems.

This new organizational paradigm and associated cultural Shift, marked by the development of an interinstitutional care network, presents complex challenges, particularly in identifying and mobilizing the essential competencies required for effective leadership and management within LHU. In these integrated and person-centered care settings, nurse managers play a strategic role in team coordination, policy implementation, and quality improvement (Cantante et al., 2020). However, the literature remains fragmented in several respects: studies use different competency frameworks, emphasize different skill domains, and rarely focus specifically on nurse managers working across primary and hospital care within integrated systems. As a result, the competencies underpinning these roles have not yet been systematically mapped or consolidated.

Accordingly, this study aims to map and characterize the leadership, organizational, and technical competencies required of nurse managers in primary and hospital care settings operating under integrated care models. The analysis is guided by Marilyn Anne Ray's Theory of Bureaucratic Caring, because this framework captures the dual demands placed on nurse managers in integrated care settings: they must ensure organizational coordination, administrative responsiveness, and resource management while simultaneously sustaining ethical, relational, and person-centered care. This makes the theory particularly appropriate for examining the competencies required to navigate leadership, coordination, and decision-making across primary and hospital care interfaces. The theory further supports a values-based organizational culture that seeks to reconcile institutional demands with high-quality, person-centered care delivery (Cantante et al., 2020; Silva et al., 2024; Ray, 1989; Ray, 2018; Ray, 2021; Ray, 2024). Despite the adoption of integrated care models, many health systems remain fragmented. In today's complex and demanding health care environment, redefining the competencies required for effective nurse management is imperative. The evidence-

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based evaluation of integrated care strategies has proven critical not only for transforming practice and replicating effective models, but also for identifying structural and organizational barriers to implementation (Borgermans et al., 2017). Moreover, societal shifts, advances in health innovation, digital transformation, artificial intelligence, and greater patient access to information continue to shape the development and implementation of integrated care (Minkman et al., 2025).

Although technical competencies receive considerable attention, integrated care cannot be effectively delivered without addressing the interactive and relational processes that occur across levels and networks of care. The sustainability of these models depends directly on nurse managers' competencies, particularly their capacity to balance resource constraints, coordinate service delivery, maintain continuity across care settings, and lead adaptive change over time. Such care models demand coordinated efforts among multiple professionals and institutions, requiring nurse managers to demonstrate complex relational, organizational, and clinical leadership (Zonneveld et al., 2022).

With the national rollout of this organizational model in Portugal, new challenges have emerged - particularly concerning performance-driven management, achievement of contractual targets, and the financial sustainability of care provision. These challenges mirror those observed in other health systems undergoing similar reforms (Busetto et al., 2018; Busetto et al., 2021; Struckmann et al., 2018; Grooten et al., 2018). This scoping review is guided by the following research question: What are the essential competencies required by nurse managers in primary and hospital care within integrated care settings? The study aims to support the development of future guidelines for education and professional training in this emerging field.

1. METHODS

The research objective was approached through a scoping review, chosen for its suitability in mapping key concepts and evidence in complex and emerging fields.

1.1 Study design

This study represents the initial phase of a broader mixed-methods research project and was conducted as a scoping review. The adopted methodological approach allowed for the mapping and characterization of leadership, organizational, and technical competencies required of nurse managers in primary health care and hospital settings within vertically integrated care models. The scoping review was conducted in accordance with the methodology outlined by the Joanna Briggs Institute (JBI) and reported following the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines (Page et al., 2023). The protocol was prospectively registered on the Open Science Framework (osf.io/t4g3h), ensuring transparency and reproducibility. The research question was formulated using the PCC framework (Population, Concept, Context) (Arksey & O'Malley, 2005), with the following parameters: Population: Nurse managers; Concept: Competencies required for health care management; Context: Primary and hospital care within vertically integrated health systems.

1.2 Eligibility criteria

Inclusion criteria were defined based on the PCC framework (Table 1). Studies that did not specifically address nurse manager competencies within LHU or equivalent vertically integrated health care settings were excluded.

Table 1 - Inclusion Criteria

Criteria	Description
Population	Nurse managers working in PHC and hospital services.
Concept	All the skills needed for healthcare management.
Context	Primary health care and hospital services with vertical integration of care (in Portugal, they are called ULS).
Types of studies	Qualitative, quantitative, and mixed studies, review articles, policy reports, dissertations and theses.
Languages	Publications in Portuguese, French, Spanish and English.
Publication period	Preference for more recent articles, considering relevance and impact factor.
Additional criteria	Studies from countries where there is vertical integration of care.

1.3 Critical appraisal of sources of evidence

In accordance with the JBI methodology for scoping reviews, which indicates that critical appraisal of individual sources is generally not required for this type of synthesis (JBI, 2024; Peters et al., 2020), we did not conduct a formal methodological quality assessment (e.g., MMAT or JBI checklists). This decision is also aligned with PRISMA-ScR, which treats critical appraisal as optional and requires only that it be reported if undertaken (Tricco et al., 2018). Accordingly, we prioritized the broad and systematic mapping of the body of evidence, the characterization of competencies, and the identification of gaps, without excluding studies on the basis of quality.

1.4 Information sources and search strategy

The literature search was conducted from October 2024 to February 2025; the last search was run on 15 February 2025. Databases included PubMed/MEDLINE, CINAHL, Scopus, Web of Science, and LILACS. Grey literature sources comprised Google Scholar, RCAA, institutional reports, reference lists, and theses/dissertations. We used Portuguese, English, French, and Spanish as search languages for ease of understanding. AI-assisted tools (Connected Papers, Consensus) were used only to identify potential

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additional records; all retrieved items were verified and screened against database searches. The search strategy combined descriptors and keywords extracted from titles, abstracts, and indexed terms, using Boolean operators to refine results. The initial strategy was developed for PubMed/MEDLINE (Table 2) and adapted for other databases. Search terms and MeSH descriptors included: “Nurse Administrators”, “Nurse managers”, “Primary Health Care”, “Leadership”, “Personnel Management”, “hospital ward”, “local health units”, “competencies”, “Patient-Centered Care”, and “Delivery of Health Care, Integrated”. These terms were combined using Boolean operators (AND/OR) to refine results according to the specific syntaxes of each database (e.g., combinations such as (nurs*) AND (competenc* OR skill*) AND (manage*) AND (“health system”).

Table 2 - Search Strategy - PubMed/MEDLINE

Research	Key words	Records found
#1	(nurs*)	1.210.666
#2	(competenc* OR skill*)	252.935
#3	(manage*)	2.364.041
#4	("health system")	149.046
#1#2#3#4	(nurs*) AND (competenc* OR skill*) AND (manage*) AND ("health system")	783

1.5 Study selection

Screening was conducted in Rayyan with blinded, independent decisions by two reviewers. Duplicates were removed in EndNote using automated and manual steps. In cases of disagreement, a third reviewer resolved the conflict. Eligible studies were then fully reviewed to confirm inclusion criteria were met (Ramos et al., 2014; Faria, 2019). The selection and screening process was documented using a PRISMA-ScR flow diagram (Figure 1), detailing each stage: identification, screening, eligibility, and inclusion. Data from the included studies were extracted independently by two reviewers using a structured form and analyzed thematically to identify recurring competency domains and patterns across different care settings. In accordance with the JBI methodological guidance for scoping reviews and the PRISMA-ScR guidelines, a formal assessment of the methodological quality or risk of bias of the included studies was not performed. The primary objective of this scoping review is to map the full breadth and extent of the available evidence regarding nurse managers' competencies, rather than to produce a critically appraised, synthesized estimate of effect. Therefore, all eligible sources were included to ensure a comprehensive conceptual overview of the field, regardless of their study design or methodological limitations. As this study involved the analysis of publicly available data and did not include human participants, ethical approval was not required.

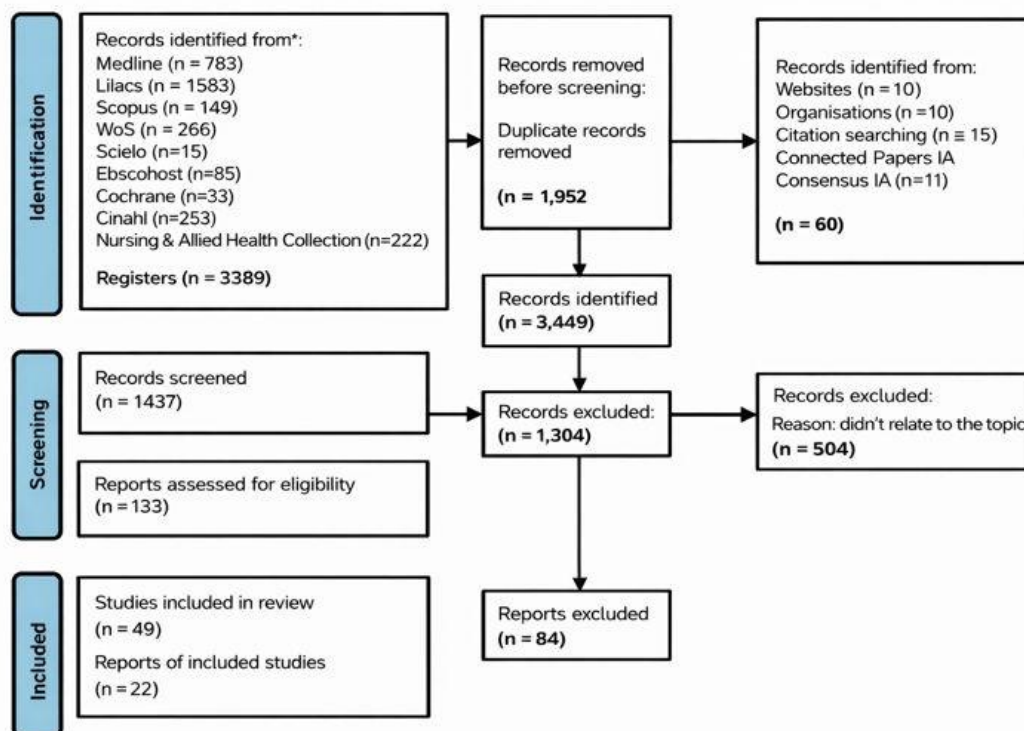


Figure 1 - PRISMA-ScR flow diagram

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1.6 Data extraction

Two reviewers independently piloted a standardized extraction form on a 10% sample to calibrate criteria. The final form captured: article ID, country/setting, aim, population, design/methods, data sources, key findings on nurse manager competencies, and notes on context/barriers/facilitators. Discrepancies were resolved by discussion or a third reviewer.

1.7 Framework-informed coding (Ray's Theory of Bureaucratic Caring)

We used Ray's Theory of Bureaucratic Caring as an a priori analytical framework to guide coding and interpretation. The theory conceptualizes caring in health organizations as the interplay between caring values and organizational domains (ethical–spiritual, sociocultural, educational, technological/physical, economic, legal, political). Accordingly, we adopted a hybrid deductive–inductive approach: an initial framework codebook with Ray's domains and operational definitions was applied deductively to text units reporting nurse manager competencies; within each domain, subthemes and competencies were developed inductively. Two reviewers piloted the framework on a 10% sample, refined code definitions, and then independently coded the full set with consensus resolution. An audit trail linked excerpts, codes, and domains. Beyond labelling, we specified mechanism statements linking each competency cluster to Ray's organizational domains (if–then–because logic). During synthesis, we wrote analytic memos to articulate how competencies enact caring within organizational constraints (e.g., technological/physical, economic), and we traced expected proximal outcomes in vertically integrated care.

1.8 Coding and synthesis

Qualitative findings were coded using a hybrid deductive–inductive approach anchored in Ray's domains; inductively derived subthemes were then aggregated into competency domains within each theoretical domain. Quantitative/descriptive data were synthesized using descriptive statistics (counts and proportions) and narrative synthesis. After calibration, the codebook was applied to the total set, and categories were aggregated into domains of competence. Quantitative/descriptive data were synthesized using descriptive statistics (counts and proportions) and narrative synthesis.

1.9 Reliability

We performed double independent extraction/coding with consensus resolution; no formal inter-rater metrics were calculated, consistent with scoping review guidance. Calibration steps and decision logs are available in Appendix C. Calibration and agreement were established on the framework-based codebook before full coding; discrepancies were resolved through discussion and iterative refinement.

2. RESULTS

The findings of this scoping review are presented in four main parts. First, we describe the study selection process and the overall characteristics of the included evidence base, providing an overview of the geographical, organizational, and methodological diversity of the 71 studies. Second, we report the framework-based synthesis informed by Ray's Theory of Bureaucratic Caring, outlining how nurse manager competencies map onto distinct organizational domains and mechanisms within integrated care settings. Third, we present a thematic and categorical analysis of competencies, highlighting shared and context-specific profiles across primary health care and hospital services. Finally, we summarize the main methods, models, and instruments used to assess nurse manager competencies, with a view to informing future educational, managerial, and policy strategies in integrated care.

2.1 Study selection

The search retrieved 3449 records (3389 from databases; 60 from gray literature). After removing 1952 duplicates, 1497 titles/abstracts were screened, of which 1364 were excluded because they did not meet the PCC criteria. One hundred and thirty-three articles were read in full, of which 62 were excluded (reasons in Appendix D), leaving 71 studies for the analysis.

2.2 Framework-based synthesis (mechanisms)

Competency domains were interpreted through Ray's Theory of Bureaucratic Caring by articulating how they produce caring effects within organizational domains, which can be found in Table 3. The relevance of each competency was determined by its capacity to harmonize humanistic care with bureaucratic efficiency, while its impact factor was evaluated based on the specific organizational and clinical outcomes, such as care coordination and resource optimization, reported in the literature.

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Table 3 - Crosswalk: Ray's domains → competency clusters → mechanisms → proximal outcomes.

Ray domain	Competency cluster	Mechanism (if-then-because)	Proximal outcome in integrated care
Technological/Physical	Informatics literacy; workflow redesign	If nurse managers optimize EHR/IS use and standardize workflows, then information flows reliably across levels, because technical/physical infrastructures are aligned with caring work.	Fewer handoff errors; faster referrals; continuity across PHC-hospital.
Educational	Coaching; CPD planning; supervision	If managers develop staff capability, then teams apply integrated care pathways consistently, because competence and confidence for new models are built.	Higher pathway adherence; safer transitions; reduced variation.
Sociocultural	Interprofessional communication; team climate	If managers cultivate psychological safety and shared goals, then teams coordinate across boundaries, because sociocultural conditions support collaborative caring.	Improved teamwork; timely multidisciplinary decisions.
Economic	Resource stewardship; staffing	If managers match resources to patient flows, then bottlenecks decrease, because economic constraints are actively negotiated to protect caring.	Shorter waits; balanced caseloads; fewer avoidable transfers.
Political	Stakeholder engagement; negotiation	If managers broker alignment with executives and external partners, then policies and pathways are implemented, because political capital legitimizes caring decisions.	Adoption of integrated protocols; cross-organization agreements.
Legal	Risk/governance; compliance	If managers translate regulation into workable routines, then teams act lawfully without paralyzing care, because legal constraints are made practicable.	Fewer incidents; audit compliance with minimal burden.
Ethical-Spiritual	Moral leadership; dignity; compassion	If managers model ethical deliberation and person-centered values, then staff prioritize dignity in trade-offs, because caring meaning anchors bureaucratic demands.	Better patient-reported respect; more equitable decisions under scarcity.

2.3 Data extraction and analysis

Data were extracted using a standardized form developed by the authors, capturing article identification, eligibility criteria, setting, population, aims, study design/methods, and key findings relevant to nurse manager competencies. Consistent with guidance for scoping reviews, no formal critical appraisal of individual sources was undertaken, and studies were not excluded on the basis of methodological quality. Evidence was summarized using descriptive statistics (e.g., counts and proportions) and narrative synthesis; qualitative findings were coded inductively and grouped into competency domains. Two reviewers performed extraction and coding independently, resolving discrepancies by discussion and consensus. For descriptive purposes only, studies were grouped by design (e.g., qualitative, descriptive quantitative, mixed methods); this grouping does not represent a quality or strength-of-evidence rating.”

The data extraction instrument included the following elements: article identification (title, author(s), year of publication, source - journal, conference, DOI or link); country of origin; context and type of institution where the study was conducted; study type, methodology, and objectives; population; identified competencies; methods used to assess competencies; main findings; contribution to the objectives of the review; and research gaps that justify further investigation. The extracted data were analyzed using a descriptive and qualitative approach, categorizing and synthesizing the main emerging themes. The results are presented below in both tabular and narrative formats, providing a clear and structured overview of the identified competencies.

2.4 Framework-based synthesis

Mapping competencies to Ray's domains showed that the Educational, Technological/Physical, and Sociocultural domains predominated across settings, whereas the Economic, Legal, Political, and Ethical-Spiritual domains were less explicit. The competencies are mapped in Table 4.

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Table 4 - Mapping of nurse manager competencies to Ray’s domains.

Ray domain	Operational definition	Competency themes (examples)
Educational	Actions that promote learning, training, and continuous development of the team.	Coaching and mentoring; onboarding; CPD planning; performance management; succession planning; clinical supervision.
Technological/Physical	Use and optimization of resources, environments, and information systems that support caregiving.	Digital literacy; EHR/SINUS integration; process redesign; patient safety; equipment management.
Sociocultural	Building relationships, culture, and team/interprofessional climate.	Interprofessional communication; conflict management; teamwork; inclusion and diversity; patient/family involvement.
Economic	Responsible resource management to add value and sustainability.	Budgeting; staffing; productivity/efficiency; cost-value analysis; resource prioritization.
Legal	Regulatory compliance and clinical/organizational governance.	Risk management; compliance with protocols; data protection; auditing; informed consent.
Political	Negotiation and alignment between levels/services and stakeholders.	Advocacy; negotiation with management and partners; policy translation; external relations/network management.
Ethical–Spiritual	Values, meaning, and person-centered care/professional ethics.	Moral leadership; compassion; dignity and respect; ethical decision-making; balance between bureaucratic requirements and care.

A) Analysis of Nurse Manager Competencies in the Context of LHU (Integrated Care Model)

This section presents the main findings from the analysis of the selected studies, organized by thematic categories, as defined in the methodological framework. Where appropriate, tables are used to support and facilitate the understanding of the results.

Thematic Mapping of Nurse Manager Competencies Related to the Integrated Care Model

Integrated care requires efficient and qualified management, in which nurse managers play a critical role. This section presents a thematic mapping of the competencies of these professionals, aligned with the core principles of the integrated care model, as identified through the analysis of the selected studies (Table 5).

Table 5 – Main nurse manager competencies

Competencies	Description	Integration of Care
Global vision of health policies and the organization: strategic thinking	Socio-political knowledge, knowledge of the complexity of the health system, and its objectives. Evaluating short- and long-term organizational goals. Knowing the organizational culture. Promoting the organization's vision. Strategic thinking.	It makes it possible to align care integration programs with the strategic objectives of the country and the organization, ensuring that services are relevant, networked and sustainable in the long term (Augusto & Rodrigues, 2014; Bainbridge et al., 2010; Burkman et al., 2012; COYLE & MILLS, 2000; Deyo et al., 2016; Duncan, 2019; Filomeno et al., 2024; González-García et al., 2021; Heinen et al., 2019; Kerfoot, 1994; Leach & McFarland, 2014; Maeda & Socha, 2021; Magri et al., 2024; Peres et al., 2021; Ramseur et al., 2018; Rueda, 2018; Scott et al., 2024; Sherring, 2012; Solbakken et al., 2019; Stefl, 2008; Sullivan et al., 2003; Trepanier & Crenshaw, 2013; van Duijn et al., 2021; Vergara et al., 2012; Vieira et al., 2018; Waring & Crompton, 2019).
Care centered on the person and their journey within the health system	Prioritizing users' needs and goals, involving them and their families in care decision-making.	It ensures that health services are adapted to users' individual needs, promoting adherence to treatment and satisfaction with care. Allows the user to circulate within the system in an integrated and efficient manner (Bainbridge et al., 2010; Barraclough et al., 2024; Burkman et al., 2012; COYLE & MILLS, 2000; Deyo et al., 2016; Duncan, 2019; Maeda & Socha, 2021; Smeets et al., 2020; Solbakken et al., 2019).

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Competencies	Description	Integration of Care
Change management	Leaders need to be highly adaptable, resilient, reflective, critical, capable of making decisions, but also involved and committed to being facilitators of change. Create a culture of care.	Establish a clinical governance model that favors collaboration between different levels of care. Identify barriers and facilitators to implementing change. Involve all stakeholders, including health professionals, users and family members (Augusto & Rodrigues, 2014; Bainbridge et al., 2010; Deyo et al., 2016; Framework, 2010; González García et al., 2021; Langins & Borgermans, 2015; Oliveira et al., 2023; Pestana et al., 2023; Rueda, 2018; Solbakken et al., 2022; Vergara et al., 2012).
Interprofessional teamwork, collaboration and cooperation	Collaborate effectively with other health professionals to provide coordinated and comprehensive care.	Facilitates communication and coordination between different specialists, services and levels of care, ensuring that users receive integrated and continuous treatment (Jubenville, 2023; Heinen et al., 2019; Burkman et al., 2012; Leach & McFarland, 2014; Peres et al., 2021; Augusto & Rodrigues, 2014; Vergara et al., 2012; Bainbridge et al., 2010; Deyo et al., 2016; Maeda & Socha, 2021; Kerfoot, 1994; Waring & Crompton, 2019; Smeets et al., 2020; Barraclough et al., 2024; Framework, 2010; Fonseca, 2019; García et al., 2020; Aiello & Mellor, 2019; Kämäräinen et al., 2024)
Coordination of teams and care/network management	Organizing, supervising and managing the service and the work of the team. Ensuring continuity and integration of health services, facilitating the transition of users between different levels of care. Ability to work in a network.	Reduces the fragmentation of care and improves the user experience. Optimizes care processes. Reduces duplication of interventions and unnecessary costs (Ferreira et al., 2019; Heinen et al., 2019; Peres et al., 2021; Augusto & Rodrigues, 2014; Vergara et al., 2012; Bainbridge et al., 2010; Vieira et al., 2018; Kerfoot, 1994; Waring & Crompton, 2019; van Duijn et al., 2021; Smeets et al., 2020; Barraclough et al., 2024; Oliveira et al., 2023; García et al., 2020; Kämäräinen et al., 2024; Farah et al., 2017; Chen et al., 2022).
Technical and scientific knowledge	Clinical governance, solid knowledge of evidence-based clinical practices.	Ensures team orientation towards best practices, better results, and more insurance (Heinen et al., 2019; Leach & McFarland, 2014; Augusto & Rodrigues, 2014; Solbakken et al., 2019; Ramseur et al., 2018; Chen et al., 2022).
Digital/technological skills/innovation	Using technologies to improve the provision of care. The nursing manager's role in incorporating artificial intelligence into practice and innovative practices.	It allows quick and easy access to user information and improves the efficiency, continuity, and security of services. Improve the bureaucratic efficiency of services and user management (Augusto & Rodrigues, 2014; Sullivan et al., 2003; González-García et al., 2021; Deyo et al., 2016; Maeda & Socha, 2021; Ramseur et al., 2018; Barraclough et al., 2024; Lo et al., 2021; Ross, 2024; Remus & Kennedy, 2012; Collins et al., 2017).
Health planning and prioritization	Ensuring the availability of effective and efficient care. The organization's ability to adapt to maximize the efficiency and quality of care.	Draws up the action plan for the organization or service, implements and monitors it. Optimizes resources and improves results for users (Busetto et al., 2021; Burkman et al., 2012; Peres et al., 2021; Augusto & Rodrigues, 2014; Sullivan et al., 2003; Vieira et al., 2018; Solbakken et al., 2019; Coyle & Mills, 2000; Kerfoot, 1994; Aiello & Mellor, 2019; Carriere et al., 2009).
Health promotion and disease prevention/public health impact management	Implementing strategies to improve the health of the population and evaluating the impact of these actions on the health of the population.	Reduces the incidence of chronic diseases and improves quality of life. Relieves pressure on health services and reduces long-term costs (Peres et al., 2021; Vergara et al., 2012).
Understanding the social determinants of health	Consider social, economic and environmental factors.	It makes it possible to identify and intervene in the specific needs of the population. Ensures that health services are equitable and effective for all (Peres et al., 2021; Vergara et al., 2012; Maeda & Socha, 2021; Barraclough et al., 2024).
Relational skills	Encouraging partnership and trust through empathy. Managing the relationship between team members. Relationship-centered care/services.	Promotes professional and user satisfaction (Steffl, 2008; Solbakken et al., 2019; González-García et al., 2021; Magri et al., 2024; Scott et al., 2024; Framework, 2010; García et al., 2020; Kämäräinen et al., 2024; Tomey, 2009; Warshawsky et al., 2020; MacPhee et al., 2014).
Communication skills	Listening actively, sharing information accurately and effectively with the team and the user.	Promotes a positive working environment for the team and the smooth transition of the patient between different levels of care. Facilitates conflict prevention (Ferreira et al., 2019; Duncan, 2019; Jubenville, 2023; Heinen et al., 2019; Fowler et al., 2021; Sherring, 2012; Burkman et al., 2012; Leach & McFarland, 2014; Peres et al., 2021; Augusto & Rodrigues, 2014; Sullivan et al., 2003; Vieira et al., 2018; Solbakken et al., 2019; Magri et al., 2024; Maeda & Socha, 2021; Kerfoot, 1994; Waring & Crompton, 2019; Smeets et al., 2020; Framework, 2010; Oliveira et al., 2023; García et al., 2020; Kämäräinen et al., 2024; Tomey, 2009; Kallas, 2014).

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Competencies	Description	Integration of Care
Negotiation skills	Diplomacy, shaping a shared vision, negotiating roles.	Facilitates collaboration between different stakeholders, conflict resolution, and consensus building around the objectives of care integration (Burkman et al., 2012; Stefl, 2008; Sullivan et al., 2003; Deyo et al., 2016; Trepanier & Crenshaw, 2013; Kerfoot, 1994; Waring & Crompton, 2019; Framework, 2010).
Decision-making	Making informed and ethical decisions in accordance with the well-being of the patient and the resources available. Sharing decision-making with other professionals.	Guarantees the quality and safety of care (Titzer & Shirey, 2013; Peres et al., 2021; Augusto & Rodrigues, 2014; Sullivan et al., 2003; Rueda, 2018; Ramseur et al., 2018; Framework, 2010; Farah et al., 2017; MacPhee et al., 2014).
Financial resource management	Knowledge of financial management and budget management. Ability to generate new revenue/savings and optimize workflows without jeopardizing the quality of care provided. Knowledge of health economics.	Fundamental to ensure the efficient allocation of resources and the financial sustainability of care integration programs Duncan, 2019; Heinen et al., 2019; Warshawsky & Cramer, 2019; Titzer & Shirey, 2013; Peres et al., 2021; Stefl, 2008; Vergara et al., 2012; Sullivan et al., 2003; Vieira et al., 2018; Solbakken et al., 2019; Coyle & Mills, 2000; Deyo et al., 2016; Ramseur et al., 2018; Kerfoot, 1994; Warshawsky et al., 2020).
Management of administrative and bureaucratic activities	Knowledge of the administrative and bureaucratic processes that support the provision of care and referral between services.	Ensures the effectiveness and efficiency of the teams' response to users and better coordination between services in complex care environments Jubinville, 2023; Burkman et al., 2012; Sullivan et al., 2003; Solbakken et al., 2022; MacPhee et al., 2014).
Leadership, emotional and relation intelligence	Inspire and motivate teams, promoting participation, innovation, autonomy and evidence-based practices. Promotes consistency and quality of care, as well as a positive working environment. Transformational leadership.	It creates a culture of collaboration and learning, encouraging teamwork, innovation and involvement in finding new solutions. Manages emotions and facilitates the team's creativity in overcoming the challenges of integrating care (Ferreira et al., 2019; Duncan, 2019; Wang et al., 2018; Heinen et al., 2019; Titzer & Shirey, 2013; Sherring, 2012; Longpré & Dubois, 2015; Leach & McFarland, 2014; Peres et al., 2021; Augusto & Rodrigues, 2014; Rueda, 2018; Vieira et al., 2018; Solbakken et al., 2019; Magri et al., 2024; Deyo et al., 2016; Trepanier & Crenshaw, 2013; Ramseur et al., 2018; Barraclough et al., 2024; Pestana et al., 2023; Langins & Borgermans, 2015; Oliveira et al., 2023; García et al., 2020; Aiello & Mellor, 2019; Tomey, 2009; Warshawsky et al., 2020; Kallas, 2014; Titzer et al., 2013; Tyczkowski et al., 2015).
Human resources management	Workload management and working conditions. Time management, empowerment, talent management. Recruitment and retention of professionals. Delegation. Performance evaluation. Team orientation towards results. Involving the team in decision-making and promoting empowerment. Caring for the team.	Promotes a positive and collaborative work environment, attracting and retaining qualified professionals for care integration (Duncan, 2019; Burkman et al., 2012; Peres et al., 2021; Augusto & Rodrigues, 2014; Vergara et al., 2012; Rueda, 2018; Vieira et al., 2018; González-García et al., 2021; Magri et al., 2024; Trepanier & Crenshaw, 2013; Ramseur et al., 2018; Farah et al., 2017; Warshawsky et al., 2020).
Professional attributes, social responsibility and ethics	Demonstrating integrity, empathy and social responsibility, ensuring that care is provided with respect and dignity. Guaranteeing users' rights. Ethical behavior.	Strengthens the trust of users and the community in health services, ensuring that care is provided ethically and professionally (Peres et al., 2021; Augusto & Rodrigues, 2014; Vieira et al., 2018; Solbakken et al., 2019; Ramseur et al., 2018; Barraclough et al., 2024; García et al., 2020).
Promoting personal and professional development	Developing future leaders. Continuously investing in personal training and supporting the professional development of the team and promoting networking. Knowledge transfer, coaching.	Ensures continuity of leadership, training and the dissemination of best practices in the integration of care (Heinen et al., 2019; Leach & McFarland, 2014; Augusto & Rodrigues, 2014; Sullivan et al., 2003; Trepanier & Crenshaw, 2013; Ramseur et al., 2018; Oliveira et al., 2023; Aiello & Mellor, 2019; Chen et al., 2022; Warshawsky et al., 2020).
Improving the quality of performance and accountability	Implementing a system of continuous improvement in the quality and safety of care. Responsible for the team's quality and health outcomes.	Plan, implement, monitor and evaluate care integration programs, identifying areas for improvement and promoting a culture of safety (Duncan, 2019; Jubinville, 2023; Heinen et al., 2019; Titzer & Shirey, 2013; Sherring, 2012; Leach & McFarland, 2014; Peres et al., 2021; Augusto & Rodrigues, 2014; Ramseur et al., 2018; Warshawsky et al., 2020; Kallas, 2014; Titzer et al., 2013).

In relation to team and care coordination, the identified competencies underscore the need to foster interprofessional communication and effective service management to prevent fragmentation in health care delivery. The nurse manager's ability to organize workflows, optimize resources, and integrate various specialties contributes significantly to the efficiency of the integrated care model. Collaborative practices, as well as the clarification and negotiation of roles within interprofessional teams, are also fundamental to the successful implementation of integrated care. Proficiency in digital tools enhances patient monitoring, promotes information security, and optimizes both clinical and administrative decision-making processes.

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In the domain of leadership and professional development, competencies related to emotional intelligence, Alban-Metcalf's model of transformational leadership, systems leadership (as opposed to unit-based leadership), and human resource management stand out. In addition, it is crucial to emphasize the importance of relational intelligence, which involves the ability to relate empathetically, collaboratively and effectively with team members, clients and other stakeholders. These competencies are essential for maintaining a motivating work environment, fostering innovation, and ensuring the retention of qualified professionals - factors that contribute to team stability and continuity of care.

Finally, the analysis reinforces the importance of administrative and financial management competencies, which are essential for ensuring service efficiency, appropriate resource allocation, and the implementation of continuous quality improvement strategies. The ability to manage bureaucratic processes, make ethical decisions, and promote evidence-based practices is fundamental to ensuring the equity and accessibility of health services.

Thus, the results demonstrate that, within the context of LHU, the nurse manager plays a strategic role in operationalizing the integrated care model, contributing to improved care processes, enhanced user satisfaction, and greater efficiency in health service delivery.

Categorization of Nurse Manager Competencies Related to the Integrated Care Model

Following the thematic mapping of competencies, we opted to group them into categories. The identification and categorization of nurse manager competencies -aligned with the core principles of the integrated care model and emerging from the analysis of the selected studies - are fundamental to optimizing coordination across levels of care, promoting continuity of services, and strengthening the quality of health care delivery. These competencies were grouped into six main categories:

Technical competencies:

- Systemic and long-term vision: Strategic planning, knowledge of the political context, the complexity of the health system, its organizational structure, and public health.
- Involvement with professional regulatory bodies and participation in institutional reforms.
- Holistic vision: understanding the integration between different levels of care to ensure continuity of patient care.
- Administrative and financial management: mastery of financial management principles: budgeting, cost control, financial reporting, and the ability to analyze performance indicators.
- Information systems and technologies: proficiency in health technologies and digital systems: knowledge and use of technological tools associated with care delivery (e.g., medical equipment) and health information systems for data recording, collection, analysis, and interpretation. Competence in leveraging these tools, including artificial intelligence, to support clinical and administrative decision-making. Implementation of technologies and innovation.
- Clinical decision-making: ability to interpret clinical data and diagnostic results, making safe and effective decisions grounded in evidence-based practice, while considering patient needs and available resources.
- Monitoring and improving quality.

Behavioral competencies:

- Participative/transformational leadership: ability to effectively communicate a vision, inspire, motivate, and influence others, while actively involving team members in decision-making processes.
- Promotes participation, collaboration, and professional development, and manages financial and human resources efficiently.
- The provision of mentoring and coaching services.
- Emotional and relational intelligence: enables the nurse manager to assess situations with emotional balance, reduce impulsivity, and make strategic decisions. Supports the creation of a positive work environment, conflict management, team motivation, and staff commitment. Emotional intelligence is a critical factor that positively influences transformational leadership.
- Effective communication: ability to communicate clearly, objectively, and empathetically with patients, families, teams, and other healthcare professionals through multiple communication channels.
- Adaptability and resilience: flexibility, commitment to the organization, and resilience are essential management competencies in integrated care contexts.
- Ethics and commitment: capacity to make sound and effective decisions based on ethical principles and social responsibility.
- Advocacy by professionals/ontology.

Interprofessional competencies:

- Collaboration: ability to work effectively with other health professionals, fostering communication and mutual respect. Emphasizes the integration of efforts through shared responsibilities, knowledge, and skills.
- Cooperation: capacity to promote joint efforts within the organization to achieve a common goal - namely, the delivery of high-quality integrated care to patients - while maintaining the autonomy of services and without requiring direct interdependence. It involves working in parallel and offering mutual support when needed, management of care transitions.
- Coordination between levels of care.
- Teamwork: ability to build and maintain positive interpersonal relationships, promoting a collaborative and respectful work environment focused on achieving shared goals.

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Management skills:

- Strategic planning: the ability to define objectives and goals, as well as to develop action plans to achieve the desired results, taking into account the available resources and the needs of the population.
- Project management: ability to plan, implement, monitor and evaluate continuous improvement projects, using appropriate methodologies and management tools.
- Quality management: knowledge and application of quality management principles and tools to guarantee user safety, process efficiency and user satisfaction.
- Resource management: knowing and making the most of available resources in accordance with current regulations. Ability to negotiate and balance a vision of care with administrative requirements. Mobilizing these skills favors changing environments.

Education and development skills:

- Permanent education: commitment to continuous learning and professional updating, seeking to develop new skills and competencies.
- Skills development: the ability to identify staff development needs and implement training actions to improve technical, behavioral and management skills, as well as user empowerment. Being able to teach and guide clinical teams.

Clinical skills:

Technical-scientific: clinical governance, monitoring clinical outcomes, risk management and care coordination. These refer to technical-scientific knowledge, care skills and clinical decision-making. Management is important in strategies that impact on care conditions and teamwork.

The categorization of nurse manager competencies within the context of integrated care and LHU reflects the complexity and multidimensional nature of their role in the integrated care model. Organizing the competencies into six broad domains - technical, behavioral, interprofessional, managerial, educational and developmental, and clinical - provides a comprehensive understanding of the required profile to ensure effective management and continuity of care.

The distinction between technical and behavioral competencies highlights the need for a balance between specialized knowledge and interpersonal skills. While systemic vision, financial management, and technological proficiency are essential for service organization and efficiency, emotional and relational intelligence, effective communication, and transformational leadership emerge as critical factors for team motivation and the creation of a collaborative work environment.

The inclusion of interprofessional competencies as a standalone category underscores the importance of collaboration and cooperation in the integration of services. However, it may be argued that these competencies could be incorporated within behavioral competencies, as communication, teamwork, and mutual respect are key elements in building effective interprofessional relationships. Cooperation and communication across different levels of care and among diverse actors are essential for the successful implementation of the integrated care and service model, as is the ability to embrace new roles and responsibilities. In this context, it is necessary to develop skills in leading organizational change.

Management competencies are critical to the successful implementation of integrated care models, particularly in areas such as strategic planning, project management, and resource optimization. Their interdependence with technical and behavioral competencies highlights the need for nurse managers who can reconcile a care-oriented vision with administrative and financial demands. Anne Ray's Theory of Bureaucratic Caring suggests that balancing bureaucratic processes with humanized care is a constant challenge, requiring the integration of rigid protocols with patient-centered approaches. Achieving this balance is especially crucial in complex organizations such as LHU.

Educational and developmental competencies emphasize the commitment to continuous learning and team capacity-building - essential elements for fostering innovation and improving service quality. In this context, continuing education becomes a key strategy to ensure professional upskilling and adaptation to evolving models of care delivery.

Finally, clinical competencies demonstrate that, despite their managerial role, nurse managers must retain strong technical and scientific knowledge to ensure patient safety, clinical governance, and effective coordination of care. The interconnection between management and clinical practice reflects the specific nature of the leadership exercised by these professionals within the healthcare context.

The growing complexity of healthcare systems, marked by digital innovation, financial pressure, regulatory requirements, and sustainability challenges, requires leaders who are capable of innovating, adapting, and managing change in dynamic contexts. These leaders will need to be able to build cultures of continuous innovation to improve the quality of care.

Analysis of Specific Competencies According to Different Levels of Health Care

The management of PHC and hospital services differs across several dimensions, including care focus, organizational structure, service delivery models, and funding mechanisms. Efficient PHC and public health management requires a strategic approach based on service coordination, resource optimization. Achieving efficiency also depends on the integration of different levels of care and the provision of accessible, equitable, and high-quality services for the population.

Efficient hospital management requires a balance between care quality, cost control, and the optimization of human and technological resources. The focus must be on patient safety, innovation, and the integration of care and health services, ensuring high-quality and sustainable service delivery within the institution.

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It is evident that Primary Health Care Centers and Hospitals have distinct missions, areas of intervention, and organizational cultures. The analysis of the selected studies also suggests that certain nurse manager competencies are more specific to the particular level of care in which they are exercised.

Based on the review of the studies, the following context-specific competencies were identified for each care setting (Tables 6 and 7).

Table 6 – Primary health care

PHC competence	Description
Management with a focus on prevention and health promotion	Prioritization of disease prevention, health promotion and continuous monitoring of the population, reducing complications and unnecessary hospitalizations (Peresat et al., 2021; Vergara et al., 2012; Barraclough et al., 2024; Oliveira et al., 2023).
Understanding the social determinants of health and knowledge of the community	Ability to analyze factors such as socio-economic conditions, education, environment and access to services that impact on the health of the population, promoting actions to reduce inequalities (Peresat et al., 2021; Barraclough et al., 2024; Oliveira et al., 2023).
Systemic, long-term vision, political skills, strategic planning and prioritization in health	Ability to understand the impact of decisions on the health system as a whole, ensuring sustainability and coherence between policies and actions (Terry et al., 2024; Peresat et al., 2021; Vergara et al., 2012; Barraclough et al., 2024; Oliveira et al., 2023).
Managing the impact of health actions on the population	Continuous monitoring and evaluation of the results of health interventions, ensuring that they meet the real needs of the population and promote effective improvements in quality of life (Peresat et al., 2021; Vergara et al., 2012).
Proximity management and longitudinality	Organization of health care in an accessible and continuous manner, guaranteeing close monitoring of the patient and family over time (Peresat et al., 2021; Oliveira et al., 2023).
Communication and negotiation skills with community partners	Essential skills for interacting with different stakeholders in the community, facilitating partnerships, mobilizing resources and implementing public health strategies (Peresat et al., 2021; Vergara et al., 2012; Oliveira et al., 2023).
Coordination of care involving users, families and the community	Implementation of effective communication strategies to ensure adherence to treatment and the active involvement of patients and their families. Network management of community resources (Terry et al., 2024; Peresat et al., 2021; Oliveira et al., 2023).
Accessibility management, community resources and networked care	Organization of services based on public health principles, ensuring efficient use of community resources, networking, inter-institutional collaboration to maximize the impact of care, strengthening the user's support network (Peresat et al., 2021; Vergara et al., 2012; Framework, 2010; Oliveira et al., 2023).
Multidisciplinary work	Collaboration between different health professionals (doctors, nurses, psychologists, nutritionists, social workers, among others) for a holistic, personalized and integrated approach to the user's needs and in a network (Vergara et al., 2012; Barraclough et al., 2024; Framework, 2010; Oliveira et al., 2023; Lewis et al., 2024).
Transition management and post-discharge follow-up	Structured monitoring of patients after discharge, preventing complications and reducing the risk of readmissions and complications (Vergara et al., 2012).
Use of epidemiological data and risk management	Planning based on epidemiological data that allows for a more effective and preventive response, reducing negative impacts on the population's health (Peresat et al., 2021).
Community participation, collaboration with local authorities, planning educational campaigns	Active involvement of the community in the formulation of health policies. Ensures that health actions are adapted to local needs, increasing the effectiveness of integration programs. Reinforces prevention and empowers the population to take care of themselves, reducing the demand for hospital care (Terry et al., 2024; Peresat et al., 2021; Oliveira et al., 2023).
Implementation of risk and contingency management/crisis management plans	Development of strategies and protocols to respond to public health emergencies, ensuring rapid and effective action (Peresat et al., 2021).

Table 7 – Hospital care

Competence	Description
Hospital management and service coordination	Strategic management of multidisciplinary teams, resources and hospital processes to ensure efficiency and quality of care. Developing a portfolio of services, defining and organizing the services offered by the hospital (Ferreira et al., 2019; Vergara et al., 2012; Magri et al., 2024; Fonseca, 2019; Higgins, 2016).
Managing hospital capacity and organizing care	Optimization of beds, length of stay and patient flow, ensuring better use of hospital resources (Ferreira et al., 2019; Jubinville, 2023; Fonseca, 2019; Higgins, 2016).
Waiting list management and clinical decision-making	Prioritization and organization of hospital care to improve efficiency and reduce waiting times (Ferreira et al., 2019; Vergara et al., 2012; Magri et al., 2024; Higgins, 2016).
Development of standardized clinical protocols and quality standards	Implementation of care guidelines that guarantee patient safety and optimize the quality of care. (Fischer, 2016; Jubinville, 2023; Nursing, 2014; Waring & Crompton, 2020)
Management of a high volume of specialized human, material and technological resources	Efficient organization and distribution of health professionals, equipment and technology to ensure safe, high-quality care (Ferreira et al., 2019; Fonseca, 2019; Higgins, 2016).
Integration/articulation between PHC, hospital and long-term care	Implementation of an integrated system that favors continuity of care and efficient transition between different levels of care and between services (Jubinville, 2023; Vergara et al., 2012; Framework, 2010).
Focus on financial management	Cost planning and control, budget optimization and the search for operational efficiency to ensure the hospital's financial sustainability (Ferreira et al., 2019; Vergara et al., 2012).
Leadership skills, transformational leadership	Ability to inspire and motivate teams in high-pressure environments, promoting innovation, commitment and excellence in the care provided (Ferreira et al., 2019; Fonseca, 2019; Tyczkowski et al., 2015).
Crisis management and rapid decision-making	Developing agile and effective strategies for responding to emergencies, dealing with high-pressure situations and ensuring continuity of care (Magri et al., 2024).
Administrative and bureaucratic skills	Coordinating schedules, controlling material resources, preparing care reports, complying with rules and regulations, as well as managing contracts and hospital documentation (Ferreira et al., 2019; Jubinville, 2023; Magri et al., 2024; Farah et al., 2017).

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The analysis of articles on nurse manager competencies reveals shared areas across settings, but also highlights significant differences between PHC and hospital care, reflecting the specific demands of each service context. Nevertheless, both settings converge on the need for integrated management to ensure continuity of care and the optimal use of available resources.

In PHC, proximity management and continuity of care emerge as essential elements, as ensuring long-term follow-up is key to preventing unnecessary hospitalizations and reducing health access inequalities. The need to understand the social determinants of health reinforces the role of the nurse manager as a key liaison between services and the community, promoting holistic care and collaborative network-based assistance. The importance of possessing political competencies to effectively operate within the health sector is also emphasized.

In hospital care, emphasis is placed on vertical, more hierarchical management structures. These are critical competencies for ensuring the sustainability of the hospital system and maintaining quality and safety in care delivery.

Within the context of integrated care, coordination between these two levels of service is essential to ensure smooth patient transitions. Competencies related to care coordination and network-based collaboration are critical to preventing gaps in continuity, reducing avoidable readmissions, and ensuring structured post-discharge follow-up. Interprofessional collaboration and effective communication with diverse stakeholders are key to aligning efforts and providing a timely and efficient response to patient needs. Nevertheless, it is increasingly acknowledged that successful implementation is a highly complex and dynamic process, heavily influenced by the specific context in which it occurs.

Based on Ray's Theory of Bureaucratic Caring, it is possible to infer and understand that within complex institutions - such as those operating under integrated care models - the humanistic and bureaucratic dimensions of care continue to coexist and influence the practice of nurse managers. In PHC, proximity to the community tends to foster a more relational and preventive approach, while in hospital care, hierarchical structures and the need for operational efficiency reinforce a more technocratic and protocol-driven logic. Nevertheless, both contexts require nurse managers to act as mediators between process management and the humanization of care, ensuring that patients receive high-quality assistance within an integrated and efficient health system. This perspective is echoed by other authors, who emphasize the importance of balancing leadership priorities between the competing paradigms of care and economics.

The studies show the existence of common competences, which lead to the mobilization and training of more specific competences for each level of care, depending on the care context and the care organization model. Thus, the identified competencies highlight not only the differences between care contexts but also the importance of integrated management in building a more efficient, accessible, and person-centered health system.

The delivery of integrated care requires a balance of activities that respond to motivational, cultural, organizational, and infrastructural factors over time. Evidence from integrated care initiatives suggests that both their effectiveness and the factors that enable or hinder success are highly context-dependent. Therefore, efforts to integrate care must always be examined in conjunction with their specific clinical, geographical, financial, and political contexts, and it is important that professionals receive additional education and training in transitional care.

3. DISCUSSION

The results of this scoping review highlight that nurse managers play a crucial role in the successful implementation of integrated care, particularly within LHU, where coordination between primary and hospital care requires specific competencies and a strategic vision. Transformational, empathetic, and collaborative leadership emerges as a key dimension (Duncan, 2019; Miles & Scott, 2019), as it fosters organizational environments that promote shared goals, team motivation, and continuous improvement. Nurse managers are required to possess a broad spectrum of competencies encompassing technical, clinical, behavioral, interprofessional, educational, and managerial domains. Among these, leadership emerges as the cornerstone competency, exerting a transversal and critical influence across both hospital and primary healthcare settings.

However, it is important to note that leadership styles and competencies are not universal. Studies such as those by Wang et al. (2018) and Terry et al. (2024) emphasize that organizational context, institutional culture, and the level of integration maturity significantly influence the effectiveness of adopted leadership models. Therefore, nurse manager training should incorporate situational approaches that are responsive to local specificities. Communication was identified as a key competence, strongly associated with patient safety, team performance, and the effective reporting of adverse events. Transparent and timely information sharing among healthcare professionals, service users, managers, and policymakers is essential for constructing integrated, person-centered systems of care. In this regard, shared values, a common vision, and clear, competent leadership serve as foundational pillars for successful integration.

Organizational and cultural barriers

Tensions between distinct institutional logics - such as the administrative control of hospitals and the autonomy of primary care centers - remain a critical barrier to full integration. These tensions, previously described by Ling et al. (2012), perpetuate

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organizational silos, hinder interprofessional collaboration, and generate resistance to change. Promoting an organizational culture based on trust, shared leadership, and a common vision is identified as a key condition for overcoming these barriers (Zonneveld et al., 2022; Jubinville, 2023). Despite the potential benefits of integration, several structural and cultural barriers persist. These include fragmented organizational cultures, disparities in remuneration systems, limited professional engagement, insufficient monitoring and evaluation of integration progress and managerial effectiveness, resource constraints, and resistance to change. Additionally, the lack of articulation between levels of care necessitates profound structural and cultural transformations.

Moreover, communication between different levels of care remains fragmented, often hindered by non-interoperable information systems, which compromise care continuity and patient safety. Investments in technology must be accompanied by digital literacy strategies, targeted training, and a systemic vision of information management (Ling et al., 2012). The review also identified several priority areas for improvement, including the effective deployment of interoperable information systems, implementation of continuous quality assurance mechanisms, enhancement of inter-institutional coordination, promotion of reflective and innovative practices, and the establishment of new routines and behaviors aligned with emerging organizational cultures.

Theoretical Integration and Operational Mechanisms via Bureaucratic Caring Theory

The integration of Ray's Framework of Bureaucratic Caring moves beyond descriptive labeling by clarifying how competencies are structurally situated and enacted within complex organizational dynamics. Synthesizing these domains reveals specific operational mechanisms: technological and educational competencies enable caring by ensuring care continuity and building capacity for integrated pathways, whereas sociocultural competencies sustain collaboration across healthcare levels through relational and communicative skills. Conversely, the relative scarcity of competencies mapped to legal and political domains highlights critical opportunities for governance literacy and cross-level negotiation. Within this framework, economic and political competencies function as essential enablers that stabilize operational effects under systemic resource and governance pressures, while ethical-spiritual leadership ensures that administrative and clinical value judgments remain strictly anchored in person-centered aims.

Implications for education and professional development

The qualification of nurse managers requires more than technical competencies in planning and evaluation. Relational, reflective, and ethical competencies are also essential, with an emphasis on leading through influence rather than solely through formal authority (Reichenpfader et al., 2015; Everett & Farber, 2022; Heinen et al., 2019). Continuing education programs grounded in the principles of Permanent Health Education (PHE) can strengthen these competencies and support adaptation to the dynamic demands of integrated care (Minkman et al., 2025). In line with this, organizational support plays a critical role in the effectiveness of nurse managers, encompassing not only strategic planning but also robust succession planning during leadership transitions. The stability of healthcare teams and governance structures, together with support for the evolving nature of professional roles, is essential to sustaining long-term transformation. Clinical, managerial, and operational competencies - when combined with confident and context-aware decision-making - enhance informed leadership, strengthen team coordination, and enable effective responses to institutional demands. In this context, strategic succession planning for nurse managers is crucial to ensure leadership continuity and preserve institutional knowledge necessary for organizational resilience and development. The inclusion of these competencies in formal curricula and in-service development programs can help ensure that they are not merely theoretical constructs but are translated into concrete practices within real-world settings. In addition to postgraduate training in leadership, professional experience is strongly associated with nurse manager competency (Schlotzhauer et al., 2023; Warshawsky et al., 2022). Studies indicate that transitioning to a new nurse manager role, particularly in a different context, may lead to a temporary decline in perceived or actual competency levels (Warshawsky & Cramer, 2019).

User perspective and health outcomes

Although the reviewed literature focuses predominantly on organizational dynamics and managerial competencies, it is essential to consider the impact of these variables on the user experience. Effective leadership may contribute to improved continuity of care, greater patient satisfaction, enhanced clinical safety, and more appropriate responses to biopsychosocial needs - particularly among vulnerable populations. However, few of the studies included in the review directly address these connections, representing a significant gap to be addressed in future research.

Ethical dimension and public policy

Health management practices must be framed within a robust ethical perspective. Core values such as equitable access, organizational justice, respect for patient autonomy, and commitment to the common good should underpin all decision-making processes in integrated care settings. These ethical dimensions become particularly salient in scenarios involving the allocation of scarce resources, the establishment of care priorities, or interactions with professional regulatory authorities. Ethical leadership in these contexts ensures that managerial actions remain aligned with both institutional mandates and the broader social

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responsibility of healthcare systems (Heinen et al., 2019). Emotional and relational intelligence were highlighted as critical attributes, particularly in the context of transformational leadership. These competencies foster collaborative organizational climates and facilitate the integration of care processes across sectors.

Furthermore, strengthening management competencies requires not only institutional initiative but also political support and sustained funding. The development of public policies that acknowledge the strategic importance of nurse managers is essential for consolidating more effective and equitable integrated health systems (Minkman et al, 2025; Heinen et al., 2019). Achieving effective integration further requires the deconstruction of the traditional dichotomy between clinical care and administrative management, recognizing management as a coordination mechanism rather than a control function. This paradigm shift entails a rebalancing of power dynamics, predicated on shared leadership, ethical and collaborative governance, and the construction of strong inter-institutional networks.

Performance evaluation and innovation

Another challenge identified relates to the revision of performance evaluation systems for nurse managers. Current models, often focused on quantitative targets and administrative indicators, should be rethought in light of the principles of integrated care. Performance assessments that value the ability to lead interdisciplinary teams, foster organizational innovation, and improve health outcomes are essential for truly person-centered management. The performance of nurse managers also significantly influences the empowerment, engagement, organizational commitment, job satisfaction, burnout, and turnover intentions of direct care nurses (Schlotzhauer et al., 2023).

Limitations of the review

It is important to acknowledge that this scoping review was primarily based on studies conducted in Anglo-Saxon contexts, such as the United Kingdom, the United States, New Zealand, Canada, and Australia. This may limit the transferability of the findings to settings such as Portugal, where integrated care is at different stages of maturity and where funding mechanisms and organizational structures differ significantly. Additionally, the absence of a systematic assessment of the methodological quality of the included studies prevents a deeper analysis of the level of evidence, which is an inherent limitation of the scoping review methodology.

Final considerations

The consolidation of collaborative management models - grounded in qualified leadership and supported by a culture of safety and shared accountability - emerges as a key strategy for building more resilient, responsive, and person-centered health systems that address the real needs of users and communities. This transformation requires political commitment, structured investment in training, and an integrative vision that recognizes nurse managers as key actors in driving health innovation. In this regard, the advancement of innovative practices and the adoption of supportive technologies are imperative for improving care quality. Network governance, built on robust interpersonal relationships among organizational leaders, joint planning strategies, appropriate funding mechanisms, and the active engagement of care teams in role definition, emerges as a foundational pillar for integrated service delivery.

Challenges and future directions

The findings of this scoping review reveal significant practical and research implications, outlining relevant pathways for the future of nursing management within the context of integrated care, particularly in LHM. One of the main challenges identified concerns the effective implementation of core nurse manager competencies - not merely as theoretical constructs, but as applied capabilities embedded within practice settings and incorporated into both initial and continuing education programs (Duncan, 2019; Miles & Scott, 2019).

Continuous education and professional development emerge as strategic pillars. Structured training programs, grounded in the principles of Permanent Health Education, can not only enhance the responsiveness to the demands of integrated care contexts but also contribute to improved outcomes for service users (Minkman et al, 2025). This approach enables the adaptation of professional competencies to the ongoing evolution of organizational and clinical challenges. Despite the importance of education, the experience of nurse managers remains critical to success and cannot be fully replaced by training programs. Organizations should prioritize succession planning, role transition support, and the development of robust mentorship structures for emerging nurse leaders (Schlotzhauer et al., 2023).

In parallel, strengthening integrated information systems constitutes a key priority. Data fragmentation and the lack of interoperability between platforms continue to undermine interprofessional communication and coordination across levels of care, ultimately compromising continuity and the quality-of-service delivery (Zonneveld et al., 2022; Ling et al., 2012).

From a research perspective, there is a clear need for studies that more robustly explore the direct impact of nurse manager competencies on health outcomes - particularly regarding indicators of quality, safety, and patient experience (Wang, 2004;

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Fowler et al., 2021). Moreover, the diversity of integrated care models and organizational realities underscores the importance of comparative research that considers the tensions between decentralization and collaboration, as well as specific cultural and socioeconomic factors (Terry et al., 2024).

Cultural and organizational barriers continue to limit the effective integration of care. Overcoming these challenges requires the promotion of organizational cultures grounded in trust, shared leadership, transparency, and a common vision (Jubenville, 2023; Ling et al., 2012). This transformation cannot occur without the active involvement of policymakers and government support, through integrative public policies and adequate funding that recognize management as a strategic component of health systems. Finally, it is essential to revise performance evaluation models for nurse managers. These models should be aligned with scientific management principles and the goals of integrated care, incorporating indicators that value collaboration, innovation, and impact on health outcomes. Addressing these challenges and investing in the proposed directions will be essential to consolidating a nursing leadership that is prepared, collaborative, and committed to the continuous improvement of health care delivery.

Future research directions in integrated care governance

To address these systemic gaps, future research must move beyond theoretical labeling and focus on empirical investigations of governance literacy and policy implementation within integrated care settings. Specifically, there is an urgent need for studies evaluating how nurse managers navigate cross-level policy negotiations, manage legal liabilities in integrated health units, and deploy political-economic competencies to secure resource stability. Investigating these specific areas will provide the evidence base required to design target-oriented leadership curricula and support role transitions in evolving healthcare networks.

Practical implications for healthcare organizations and nursing education

The mapping of nurse managers' competencies within integrated care pathways yields critical, actionable implications for distinct healthcare and academic stakeholders: 1) for Local Health Units (LHS) and Integrated Care Networks: Leadership must transition from traditional, siloed hospital management to a cross-boundary governance model. Executive boards must grant nurse managers clinical and financial autonomy, shifting their focus from mere budget compliance to strategic resource allocation across primary and secondary care. ULS should implement standardized, cross-level communication protocols and integrated information systems to reduce legal liabilities and ease the collaborative burden on nursing leaders; 2) for Hospitals and Acute Care Settings: Hospital boards must reshape the organizational culture to dismantle institutional walls. Nurse managers in acute wards need targeted onboarding programs that emphasize transitional care, ensuring that hospital discharge planning is structurally aligned with community-based primary care goals, thereby reducing readmission rates; 3) for Nursing Schools and Academic Institutions: Undergraduate and postgraduate curricula require radical revision. Education must move beyond basic clinical management and introduce mandatory modules on healthcare economics, political literacy, governance, and cross-level negotiation. Rather than preparing nurses for static institutional roles, academic institutions must foster competency in managing systemic complexity and leading multi-professional networks.

CONCLUSION

Integrated care management within LHU represents a strategic model aimed at optimizing coordination across multiple levels of care, thereby enhancing continuity and efficiency in healthcare service delivery. Within this framework, nurse managers assume a pivotal role, leading interdisciplinary teams and ensuring that patient needs are addressed in a timely, responsive, and person-centered manner. Despite persistent challenges - including resource limitations, systemic fragmentation, and operational complexity. Ultimately, while integrated management models represent a critical pathway to enhancing care quality and patient satisfaction, their successful implementation cannot be detached from the development of advanced nursing leadership. Rather than assuming automatic effectiveness, contemporary evidence underscores that driving service integration and overcoming structural barriers across care levels depend inherently on the specific political, economic, and collaborative competencies of nurse managers.

The success of such organizations increasingly depends on how resources are strategically planned and managed to support change and innovation (Longpré & Dubois, 2015). Organizational culture management is now widely recognized as an essential component of health system reform. Meaningful cultural transformations must be planned alongside structural and procedural changes to achieve improvements in quality, performance, and the development of a positive organizational climate within healthcare systems (Burkman et al., 2012; Leach & McFarland, 2014; Peres et al., 2021).

Given the complexity and dynamism of care environments, nurse managers must make decisions on a daily basis, each with practical implications that can directly influence the organization's outcomes. It is therefore essential that they understand how organizational characteristics, structure, technology, and the complexity of work environments affect decision-making processes. Successfully delivering integrated care requires careful attention to motivational, cultural, organizational, and infrastructural factors (Warshawsky & Cramer, 2019)(Spanos et al., 2024).

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In this context, the continuous development of nurse managers' competencies emerges as a strategic priority. Integrated care settings demand a combination of technical, relational, ethical, and organizational skills that enable nurse managers to lead effectively, coordinate complex care processes, and adapt to rapidly changing environments. Investing in their training and professional development is therefore essential to ensure not only the sustainability of integrated care models but also the quality, safety, and equity of the services provided.

These findings highlight the need to strengthen leadership development strategies and create supportive systems that empower nurse managers to lead transformational change in integrated care contexts.

Relevance to clinical practice

The implementation of the identified best practices may, in the future, positively influence both clinical and organizational outcomes within LHU, as well as their overall sustainability.

AUTHORS' CONTRIBUTION

Conceptualization, C.F., N.G. and M.M.M.; data curation, C.F., G.C., N.G. and M.M.M.; formal analysis, C.F., G.C., N.G. and M.M.M.; investigation, C.F., N.G. and M.M.M.; methodology, C.F., N.G. and M.M.M.; project administration, C.F., N.G. and M.M.M.; resources, C.F., N.G. and M.M.M.; software, C.F., G.C., N.G. and M.M.M.; supervision, N.G. and M.M.M.; validation, C.F., N.G. and M.M.M.; visualization, C.F., G.C., N.G. and M.M.M.; writing – original draft, C.F., G.C., N.G. and M.M.M.; writing – redação e edição, C.F., G.C., N.G. and M.M.M.

CONFLICT OF INTERESTS

The authors declare no conflict of interests.

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