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Management and innovation in primary care: challenges for Latin American public health

Gestión e innovación en el primer nivel de atención: desafíos de la salud pública latinoamericana

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ABSTRACT

This chapter examined the dynamics of management and innovation in primary health care (PHC) in Latin America, with the aim of understanding how health governance processes are configured in contexts marked by inequality, fragmentation, and post-pandemic transformations. Through a qualitative and interpretive document review, academic, technical, and regulatory sources published between 2015 and 2025 were analyzed, focusing on issues of primary care, health policies, organizational innovation, and community participation. The analysis identified four recurring structural challenges: precarious infrastructure, staff shortages, territorial inequality, and institutional fragmentation. It also documented innovative responses that integrate digital technologies, interprofessional education, participatory governance, and interculturality as transformative axes of the system. The review showed that the most resilient and equitable models are those that combine social innovation with institutional legitimacy and collaborative processes between state, community, and professional actors. It was concluded that innovation in health should be understood as an ethical, social, and political process, beyond its technological dimension. Strengthening the PNA in the region requires integrated governance that is context-sensitive and oriented toward social justice. The chapter contributes to the construction of a critical Latin American approach to public health system management, proposing analytical frameworks that combine theory, evidence, and experience to promote equity, sustainability, and participation in primary care.

Keywords: Primary Care; Health Innovation; Participatory Governance; Primary Care; Latin America; Health Systems.

RESUMEN

Este capítulo examinó las dinámicas de gestión e innovación en el primer nivel de atención en salud (PNA) en América Latina, con el objetivo de comprender cómo se configuran los procesos de gobernanza sanitaria en contextos marcados por desigualdad, fragmentación y transformaciones pospandemia. A través de una revisión documental cualitativa e interpretativa, se analizaron fuentes académicas, técnicas y normativas publicadas entre 2015 y 2025, enfocadas en temas de atención primaria, políticas de salud, innovación organizacional y participación comunitaria. El análisis permitió identificar cuatro desafíos estructurales recurrentes: infraestructura precaria, escasez de personal, inequidad territorial y fragmentación institucional. Asimismo,

se documentaron respuestas innovadoras que integran tecnologías digitales, educación interprofesional, gobernanza participativa e interculturalidad como ejes transformadores del sistema. La revisión evidenció que los modelos más resilientes y equitativos son aquellos que articulan innovación social con legitimidad institucional y procesos colaborativos entre actores estatales, comunitarios y profesionales. Se concluyó que la innovación en salud debe comprenderse como un proceso ético, social y político, más allá de su dimensión tecnológica. El fortalecimiento del PNA en la región requiere una gobernanza integrada, sensible al contexto y orientada a la justicia social. El capítulo aporta a la construcción de un enfoque crítico y latinoamericano sobre la gestión de sistemas de salud públicos, proponiendo marcos analíticos que articulan teoría, evidencia y experiencia para promover la equidad, sostenibilidad y participación en la atención primaria.

Palabras clave: Primer Nivel de Atención; Innovación en Salud; Gobernanza Participativa; Atención Primaria; América Latina; Sistemas de Salud.

INTRODUCTION

Since the Alma-Ata Declaration in 1978, primary health care (PHC) has been the conceptual and operational axis for achieving health equity and universal coverage in Latin American health systems.[1] This model, focused on comprehensive care, community participation, and intersectorality, has become a pillar of public policies aimed at social justice and health sustainability in contexts characterized by profound inequalities.[2]

In recent decades, Latin American countries have undergone health reform processes inspired by the principles of primary health care (PHC), seeking to overcome institutional fragmentation, resource scarcity, and hospital concentration, which have historically limited equitable coverage of services.[3,4] In the region, experiences in Argentina, Brazil, Chile, Colombia, Mexico, and Peru have shown significant progress in strengthening PHC. Still, they also reveal political and structural tensions that hinder its consolidation.[5,6]

Health innovation, understood as the ability to generate adaptive and contextually relevant responses, has emerged as an essential tool for managing the PNAS. This innovation not only entails the incorporation of digital technologies or processes, but also the reconfiguration of governance —the way in which different actors—the state, communities, professionals, and civil organizations—collectively build solutions and make decisions around care.[7,8]

In this context, health governance is presented as a social and political process that articulates interests, resources, and knowledge in a framework of power, legitimacy, and shared responsibility.[9] Recent studies emphasize that the most resilient and equitable systems are those that combine managerial innovation, social participation, and the strengthening of primary care as a structural strategy.[10,11]

The post-COVID-19 pandemic landscape has underscored the need to rethink the PNAS's role in Latin America. The health crisis revealed institutional fragility and territorial inequality, but it also drove unprecedented processes of social creativity, collaboration, and digitization of services.[12] In this context, innovation becomes a transformative force not only for health systems but also for the governance of public health in the 21st century.[13,14]

This chapter seeks to understand, from a qualitative and regional perspective, how the

dynamics of innovation and governance are configured at the primary care level in Latin America. Through an interpretive review of scientific literature, technical reports, and local experiences, we analyze the challenges, lessons learned, and tensions that contemporary health management processes face. This analysis aims to contribute to the construction of a Latin American critical thinking on health administration and innovation, oriented towards equity, participation, and the sustainability of public systems.

Theoretical-conceptual framework

Primary health care (PHC) is a dynamic field of interaction between public policies, community practices, and institutional management. Understanding it requires an approach that goes beyond the technical limits of health administration to recognize the political and social dimensions that underpin it. In Latin America, PNAS has been the scene of historical tensions between centralization and decentralization, universality and exclusion, and, more recently, between traditional management and new forms of governance and innovation.

The concept of health governance has become central to analyzing primary care systems in the region. Hufty, Báscolo, and Bazzani propose an analytical framework in which governance is understood as a process of interaction among actors, rules, and resources that guide the formulation, implementation, and control of health policies, emphasizing its political and relational rather than normative nature.[15] This perspective moves away from the classic notion of "governance" centered on hierarchy and emphasizes the roles of cooperation and conflict in shaping the PNAS's institutional framework.

In a complementary analysis, Rodríguez and Lamothe interpret governance as a space where equity, participation, and legitimacy are articulated to sustain decision-making processes within the health system.[16] Their theoretical contribution, grounded in Giddens' structural duality approach, enables us to understand how formal structures (institutions, norms) and social practices (values, leadership, alliances) coexist and mutually transform one another. This vision is particularly relevant in Latin America, where health governance faces the challenge of coordinating various actors—the state, communities, the private sector, and international cooperation—in contexts of inequality and fragmentation.

In operational terms, Báscolo describes three modes of governance—hierarchical, incentive-based, and community-based—that can coexist within the PNAS.[17] The effectiveness of these modes depends on their ability to distribute resources, regulate behavior, and generate social legitimacy. In practice, effective governance at the first level requires combining institutional authority with participatory mechanisms and citizen co-responsibility.

On the other hand, health innovation has positioned itself as a transformative component of healthcare management and care. Holzer and Mastroleo propose an ethical and contextual reading of the concept, in which innovation is conceived as a practice that responds to regulatory or technical gaps by creating new forms of care adapted to local contexts.[18] This approach emphasizes "responsible innovation," understood as innovation that, even in conditions of uncertainty, seeks to maintain principles of equity, safety, and respect for autonomy.

Along the same lines, Duque-Paz and Castro-Arroyave highlight social innovation in health as an emerging field that promotes co-creation between communities, professionals, and managers, driving sustainable institutional transformations.[19] According to their analysis, experiences of social innovation in the region tend to strengthen the PNAS by incorporating user voices,

fostering community ownership, and improving the system's response to local inequalities.

Contemporary perspectives also highlight the relationship between technological innovation and governance. The OECD report on resilient health systems in Latin America identifies technological innovation—particularly digitization and telemedicine—as an opportunity to strengthen continuity of care and coordination between levels of care.[20] However, it warns that these innovations only have an impact when they are linked to coherent public policies and continuous training processes for human talent.

Complementarily, Ccosi Paucar et al. analyze the integration of technology into Latin American health policies within the framework of the Sustainable Development Goals (SDGs), emphasizing that innovation only acquires transformative meaning when it is oriented toward equity, accessibility, and institutional sustainability.[21] In this sense, the PNAS represents not only an operational level of the health system, but also a space for social and technological innovation in constant adaptation.

Thus, the conceptual review affirms that strengthening the PNAS in Latin America requires understanding governance and innovation as interdependent processes. The former provides the mechanisms for coordination and legitimacy, while the latter introduces the flexibility necessary to respond to changing contexts. This integration is essential for building resilient, participatory health systems oriented toward social justice.

METHOD

This chapter is based on a qualitative approach to document review, aimed at understanding and interpreting the discourses, practices, and policies that shape innovation and governance in primary health care in Latin America. This approach is part of the hermeneutic and interpretive tradition, which conceives of knowledge as a process of constructing meaning rather than empirical verification.[22]

The review was conceived as a reflective, analytical process grounded in a critical reading of academic, institutional, and regulatory sources. This type of design is appropriate when the objective is not to quantify findings, but to understand the diversity of perspectives and the evolution of health management approaches in complex sociopolitical contexts.[23,24]

The methodology was developed in three main stages:

a) Exploration and selection of sources: a systematic and narrative search was conducted between January and September 2025. Academic databases such as SciELO, RedALyC, and Scopus were consulted, as were institutional repositories of the Pan American Health Organization (PAHO), the World Health Organization (WHO), and the Inter-American Development Bank (IDB). The inclusion criteria considered documents published between 2015 and 2025, in Spanish, Portuguese, and English, that addressed issues of innovation, governance, primary care, public management, and health policies in Latin America.

b) Comprehensive reading and thematic categorization: following the qualitative content analysis method proposed by Bardin,[25] units of meaning were identified in each text. These units were then organized into emerging categories related to the study's central themes: structural and human challenges, innovation and adaptation processes, and participatory governance.

c) Interpretive synthesis: the information was integrated through theoretical and

conceptual triangulation,[26] enabling us to construct a comparative narrative of regional trends in primary care management. This procedure sought to ensure credibility and analytical consistency, fundamental principles of qualitative rigor.[27,28]

The analysis is framed within the postulates of qualitative research applied to health,[29] which recognize that health management phenomena cannot be reduced to quantitative indicators but must be understood through the interaction among actors, institutions, and contexts. Priority was given to in-depth interpretation over frequency, diversity of voices over homogeneity, and reflective coherence over statistical replicability.

The validity of this review was based on interpretive coherence and theoretical transferability,[30] guaranteed by the use of multiple sources, comparative reading, and critical review of the selected texts. Thus, the methodology adopted provides a comprehensive view of health management, innovation, and governance processes in Latin America, understood as dynamic and context-specific expressions of contemporary health systems.

RESULTS

Structural and human challenges in primary care

Recent literature on primary care or primary level of care (PNA) in Latin America identifies a series of persistent structural and organizational tensions that hinder the consolidation of equitable and resilient health systems. Interpretative analysis of the sources reveals four recurring core problems: poor infrastructure, staff shortages and precariousness, territorial and population inequality, and organizational and governance fragmentation. These categories emerge as interrelated dimensions, even more visible during the COVID-19 pandemic, which highlighted the fragility of primary care.[31,32]

Poor infrastructure

Many Latin American countries, such as Peru, Mexico, and Chile, face poor infrastructure in primary care centers, particularly in rural and peri-urban areas. The COVID-19 pandemic revealed that the systems were not resilient: Peru recorded a 50 % drop in diagnosed cancer cases, and Chile reduced cervical cancer treatments by more than 50 % in 2020.[33]

The lack of investment in digital and physical infrastructure prevents the provision of continuous services, hindering epidemiological surveillance and preventive care.

Several studies agree that limited investment in infrastructure and equipment has affected the primary care response capacity during health emergencies and in the daily provision of services. The pandemic has accentuated structural weaknesses in health facilities, which in many cases lack basic resources or sufficient technological connectivity.[31]

In Chile and Peru, for example, significant gaps in coverage of essential therapies and treatments have been documented, forcing users to pay out of pocket. These limitations reflect not only infrastructure deficits—such as the availability of medicines and equipment—but also problems in the planning and financial sustainability of the health network.[34] These shortcomings result in delays, unnecessary referrals, and discontinuity in clinical follow-up, which directly affects the quality of care and health outcomes.[31,32,33]

Staff shortages and working conditions

The insufficiency and precariousness of healthcare personnel are among the main bottlenecks

to the PNA in the region. The literature reviewed highlights both quantitative deficits (lack of professionals in rural or peripheral areas) and qualitative deficits (insufficient training for community and multidisciplinary work).[32,35] In addition, adverse working conditions—temporary contracts, excessive workloads, and psychosocial exposure—have been identified as factors that increase stress, absenteeism, and staff turnover.[36]

Research recommends promoting interprofessional education that brings university training closer to local realities and strengthening human talent management in health.[35] Cases such as Villa El Salvador in Peru show that the demand for care, especially from women of reproductive age, far exceeds the capacity of the available teams, leading to overload and inequality in the distribution of work.[37]

Territorial and population inequality

Territorial inequalities remain a structural obstacle to universal access to health. In countries such as Peru, Brazil, and Chile, the contrasts between urban and rural areas are reflected in differences in coverage, service availability, and the prevalence of untreated diseases.[38] The literature on maternal and mental health shows that women in rural areas face greater barriers to accessing prenatal or postpartum care and to receiving treatment for depression.[39]

Access to primary health care services is markedly unequal. In a comparative study across Colombia, Mexico, Peru, and Uruguay, only one-third of respondents reported having access to high-quality care, and there was a strong correlation between higher income and better care.[42]

Inadequate health infrastructure in rural areas, coupled with the concentration of specialists in urban areas, reinforces the social and territorial divide.[43]

These inequalities reinforce health exclusion and erode the primary level's role as the universal gateway to the system. Geographic distance, transportation costs, and the lack of professionals in remote communities contribute to fragmented and discontinuous care.[31,33,34]

System fragmentation and governance

Institutional fragmentation is a characteristic feature of Latin American health systems. In many countries, multiple subsystems coexist with different financing regimes, regulations, and coverage, which hinders coordination and continuity of care.[40] During the pandemic, this fragmentation led to failures in patient referrals across levels and to unequal resource management, as observed in Mexico, where admissions were redistributed to non-COVID-19 centers in an improvised manner.[41]

The fragmentation of the health system is one of the most significant structural challenges. In Mexico, the coexistence of subsystems (IMSS, ISSSTE, Seguro Popular, state services) leads to duplication of functions, inefficiency, and inequality in coverage and quality.[44]

The literature also associates governance deficiencies with a weak organizational culture of patient safety, where the lack of reporting and feedback mechanisms limits transparency and institutional learning.[32,33] In this sense, fragmentation not only weakens administrative efficiency but also the ability to generate homogeneous policies and interoperable information systems, which are essential conditions for integrated management.[32,35,40]

Combined impact and emerging responses

The challenges described interact, cumulatively affecting service quality and health governance. The lack of equipment pushes patients to higher levels; staff shortages reduce local response capacity; territorial inequity limits coverage of vulnerable populations; and fragmentation prevents efficient flow between levels.[31,32,33]

However, some Latin American experiences show innovative responses. Integrated care networks in Chile and family health programs in Brazil have demonstrated improvements in continuity of care and user satisfaction.[34,35] These strategies, focused on interinstitutional collaboration and community management, reinforce the idea that organizational innovation and participatory governance are pillars of a stronger, more equitable primary level.[32,33,35]

Implications and lines of action

Qualitative analysis suggests several priority lines of action for the region:

a) Increase investment in essential infrastructure and logistics chains;[31,34]

b) Strengthen interprofessional training and improve working conditions for health personnel;[32,35,36]

c) Implement active policies for territorial and population equity that reduce structural barriers.[38,39]

d) Promote integrated governance models that favor coordination between levels of care and institutional transparency.[32,35,40]

These recommendations are aligned with evidence linking effective governance to better clinical outcomes and greater institutional resilience in the face of health crises.[32,33]

Innovation and adaptation in health systems

The Latin American and Caribbean Region exhibits remarkable diversity in its health organization models, which translates into a heterogeneity of innovation and adaptation strategies aimed at improving the quality, coverage, and resilience of services. These innovations transcend the technological sphere and incorporate organizational, social, and cultural dimensions, in which primary care, human talent development, and community participation are consolidated as axes of transformation.[42,43,44,45]

Telemedicine and digital management: adoption, contributions, and limitations

During the COVID-19 pandemic, telemedicine emerged as a crucial tool for maintaining continuity of care. Several studies document that information and communication technologies (ICT) facilitated health education, coordination between levels, and the reorganization of care provision, especially in contexts of confinement and mobility restrictions.[46,47,48]

In PHC and family medicine, teleconsultation enabled reorganization of schedules and prioritization of care for vulnerable patients; however, the literature warns that its implementation must safeguard person-centered care, recognizing the ethical and clinical limitations of remote practice.[49,50] Research on telecare in child and adolescent mental health reported positive perceptions of accessibility and perceived quality, but also warned of digital equity gaps in less advantaged socioeconomic groups.[51]

At the same time, administrative digitization and process management are identified as organizational innovations that strengthen efficiency and inter-service coordination.[52,53] Taken together, the evidence suggests that telemedicine contributes to continuity of care and

territorial reach, although its sustainability depends on integration with training policies, digital infrastructure, and technological equity.[46,48,53]

Human capital development and professional education as strategic innovation

The transformation of Latin American healthcare requires a profound reorientation in the training of healthcare personnel. The literature reviewed highlights interprofessional education and contextualized training as priority strategies for strengthening PHC and responding to contemporary challenges.[44,49,54]

In critical areas such as mental health, implementing guidelines such as mhGAP has faced barriers related to human resources and cultural adaptation, highlighting the need for training models that integrate practical and sociocultural content.[49,55] On the other hand, the incorporation of environmental and territorial health into nursing curricula reflects the expansion of the professional profile toward competencies related to planetary health and management in contexts of socioecological crisis.[56]

Likewise, the literature on epidemic outbreaks and vaccination highlights the importance of continuing education programs and strengthening epidemiological capacities to deal with health emergencies.[57,58] In short, educational innovation—focused on interprofessionality, contextual relevance, and continuous updating—is a strategic lever for institutional sustainability.[49,56]

Community participation emerges as one of the most consistent and transformative innovations in Latin American health systems. Participatory governance and social empowerment are recognized as improving the effectiveness of health interventions, from vaccination campaigns to vector control programs.[45,59]

Experiences such as the Moravia Health Tables (Medellín) or migrant leadership in primary care networks illustrate how the systematization of participatory practices strengthens trust, institutional legitimacy, and local resilience.[60,61] However, cultural and linguistic barriers persist that affect indigenous and rural communities, requiring policies of intercultural health care and training in cultural competencies for health personnel.[62,63]

In diseases such as Chagas, the mismatch between biomedical policies and local knowledge underscores the need for transdisciplinary approaches that integrate education, communication, and community participation.[64] Similarly, social resistance to vaccination programs—motivated by mistrust and misinformation—underscores the need for health innovation to be accompanied by culturally sensitive dialogue and communication strategies.[58,65]

These experiences demonstrate that social and cultural innovation, based on popular education, intercultural dialogue, and the co-production of knowledge, is as crucial as technological innovation in achieving population impact.[45,63]

Organizational innovation and governance: decentralization, processes, and bioethics

The region has also developed organizational innovations focused on process management, functional decentralization, and the inclusion of bioethics as principles of institutional legitimacy. Studies on process management highlight improvements in efficiency and traceability when reforms are tailored to the local context and capacities.[52]

However, decentralization processes have revealed tensions: while municipalities assume

operational responsibilities, central levels maintain fiscal and regulatory control, generating misalignments and risks of fragmentation.[66,67] At the same time, incorporating public bioethics and social participation as pillars of governance seeks to redefine the relationship between the state and its citizens, promoting deliberative, co-responsible public health.[68,67]

The evidence analyzed allows us to affirm that health innovation in Latin America is multidimensional and interdependent. Telemedicine and digital management expand coverage, but require support in training, organization, and digital equity. Contextualized professional education ensures sustainability; community participation and interculturality contribute to social legitimacy; and organizational and ethical management consolidates institutional trust.[46,49,52,60,63]

The guidelines derived from the review are:

- Implement technologies, supported by organizational protocols and continuous training, to ensure clinical quality and digital equity.[46,52]
- Strengthen community education and interculturality to promote trust and acceptance of health interventions.[58,63,64]
- Consolidate process management and territorial governance with mechanisms for intergovernmental dialogue, avoiding fragmentation due to poorly planned decentralization.[52,66,67]
- Institutionalize spaces for deliberative participation and community promoters that link health services with local knowledge and trajectories.[59,60,61]

The Latin American experience shows that practical innovation does not reside solely in technologies, but in the balanced integration of technical, human, and cultural dimensions.[42,44,60,63,68]

Participatory governance and public leadership

Participatory governance in Latin American health systems is conceived as a network of relationships among public, professional, and community actors who deliberate and jointly decide on health policies, priorities, and strategies. This approach transcends traditional hierarchical models, moving toward collaborative, horizontal processes of public governance in which public problems are defined collectively and solutions are designed and implemented through interaction among sectors, disciplines, and levels of government.[68,69,70,71,72] In this framework, intersectorality and Health in All Policies (HiAP) policies are institutionalized expressions of participatory governance, anchored in the principles of Primary Health Care and the Alma-Ata tradition.[70]

The literature highlights that this type of governance reconfigures public leadership: leaders no longer act as figures of unidirectional control, but as facilitators, mediators, and articulators of diverse interests. During the pandemic, the most effective leaders were those who could bring together multiple actors, integrate scientific evidence, manage clinical capacity, and promote social support for vulnerable populations.[69,70] Health-in-All-Policies frameworks require leaders with the skills to navigate institutional boundaries, negotiate resources, translate evidence into policy action, and sustain long-term intersectoral arrangements.[70,71] Experiences such as the Latin American Brain Health Institute, which coordinates research and training networks to address dementia in the region, demonstrate catalytic, cooperative leadership focused on capacity building rather than hierarchical control.[72]

In shared decision-making processes, the sources reviewed identify a range of complementary mechanisms. The multisectoral platforms created during the pandemic, comprising ministries, universities, international agencies, and civil society, exemplify spaces for co-producing clinical guidelines and social strategies.[69] Health in All Policies (HiAP) policies institutionalize interministerial dialogues that incorporate social determinants of health into sectoral planning.[70] Integrated surveillance using the One Health approach expands collaboration between human, animal, and environmental health, strengthening transnational coordination in the face of zoonoses and ecological threats.[71] In addition, professional forums such as the Forum for the Regulation of Nursing Practice in the Americas (2023) institutionalize dialogues among ministries, professional associations, and civil society, demonstrating participatory regulation and consensus-building. At the local level, rural intersectoral collaborations promote the co-management of productive and public health projects, integrating local governments, community organizations, and private actors in designs adapted to the territory.

These decentralized models are expressed in multiple concrete examples: multisectoral responses to COVID-19 in different countries in the region; HiAP initiatives that incorporate health into housing or transportation agendas; integrated One Health surveillance systems in twelve Latin American countries; the Latin American Institute for Brain Health as a regional scientific cooperation network; and regional forums for professional regulation, all based on distributed leadership and interinstitutional cooperation.[69,70,71,72] Added to these are experiences of governance in intersectoral rural enterprises and disaster risk reduction, where coordination between subnational levels has strengthened local management and resilient planning.

Comparative analysis suggests that the legitimacy and sustainability of health policies depend on the quality of governance processes. When intersectoral collaborations become institutionalized—that is, when they cease to be ad hoc responses and are incorporated into administrative routines—accountability, continuity, and policy durability are strengthened.[69,70] Transparency and the exchange of evidence between sectors increase social and professional acceptance, providing a factual basis and normative legitimacy for decisions.[69,71] Regional and local capacity building, such as in research or integrated surveillance initiatives, generates ownership and sustainability.[71,72] Likewise, the inclusion of diverse actors—ministries, trade unions, professional associations, and citizens—broadens representation. It reinforces the normative legitimacy of decisions, while institutional fragmentation or lack of funding undermines policy coherence and continuity.

Based on these contributions, participatory governance in Latin America and the Caribbean transforms public management into networked leadership that brings together science, institutions, and communities. Its effectiveness and legitimacy derive not only from formal inclusion but also from the ability to generate dialogue, transparency, equity, and financial coherence. The sustainability of health policies is therefore closely linked to the degree of institutionalization, participation, and equity achieved by intersectoral governance arrangements.[69,70,71,72]

DISCUSSION

The analysis in this chapter shows that strengthening the NHA in Latin America cannot be separated from a systemic, intersectoral approach, in which governance and innovation serve as structural axes for transforming health systems. The review identified persistent tensions—such as structural precariousness, territorial inequality, and institutional fragmentation—that limit the PNA's ability to operate as an effective, decisive, and equitable gateway to the health

system. These challenges, although already documented before the pandemic, gained renewed visibility and urgency from the COVID-19 crisis, which exposed the accumulated weaknesses of primary care systems.

Consistent with previous studies,[8,12] the findings reaffirm that investment in infrastructure, training of human talent, and interinstitutional coordination are necessary but not sufficient conditions. The evidence reviewed suggests that the effective integration of these dimensions is critical to the PNA's resilience. In this sense, health innovation must be understood beyond the technological dimension: as a social and cultural process aimed at generating contextually relevant, sustainable, and ethically grounded responses.[18,19]

Likewise, it has been observed that the most adaptive systems are those that promote models of participatory, decentralized governance based on shared responsibility. Governance can no longer be reduced to vertical state management but must incorporate deliberative frameworks that integrate community, professional, and sectoral actors into shared decision-making processes. As shown by the experiences of the Health Roundtables in Colombia or the family health programs in Brazil, social participation not only strengthens institutional legitimacy but also expands the capacity to respond to local and emerging needs.[45,61]

A key finding is the coexistence of multiple modes of governance (hierarchical, incentive-based, community-based), whose effectiveness depends on the degree of institutional coordination and recognition of local practices. Hybrid forms of management are a distinctive feature of Latin American systems, requiring analytical approaches that are sensitive to the diversity of institutional, cultural, and territorial arrangements.[15,17]

On the other hand, the review also warns of the risks of "innovation without equity," especially in telemedicine and digitization. Although these tools have proven effective in expanding coverage and sustaining care in critical contexts, their disjointed implementation or lack of a digital justice approach can reinforce existing gaps, as is the case in rural or indigenous communities with low connectivity or technological literacy.[46,62]

This reinforces the need for policies that link technological innovation with continuous training, equitable infrastructure, and sociocultural adaptation. Finally, the chapter contributes to the current debate on the need to build conceptual and operational frameworks specific to the region. The Latin American experience shows that practical innovation is not achieved through uncritical importation of external models, but through the co-construction of solutions grounded in local knowledge, intercultural dialogue, and the institutionalization of participatory practices. In this sense, the findings support the idea that health governance should be seen as a situated political construction, in which leadership is exercised not through imposition, but through the facilitation of collaborative processes oriented toward the common good.[45,68]

CONCLUSIONS

The purpose of this chapter was to understand, from a qualitative and interpretive approach, how the dynamics of innovation and governance are configured at the primary health care level in Latin America. Through a critical review of academic literature, technical reports, and regional experiences, we analyzed the structural challenges, organizational tensions, and adaptive responses that management processes face in the post-pandemic health context. This approach enabled the identification of common patterns and emerging experiences that contribute to a deeper, more contextualized understanding of the strengthening of primary care

as a strategic axis for equity and sustainability in health systems.

The findings show that significant structural obstacles persist that limit the consolidation of the PNA, such as precarious infrastructure, a shortage of trained personnel, institutional fragmentation, and territorial inequalities.[31,32,33,34,40,43] These factors interact cumulatively, weakening the primary level's response capacity and widening gaps in access to and quality of care. However, innovative practices were also identified that, from an organizational, social, and technological perspective, have contributed to improving the system's resilience, highlighting the importance of integrated and participatory approaches.[46,52,59]

It is concluded that health innovation should be understood as a multidimensional process that encompasses not only technological tools but also transformations in governance, talent development, and community relations.[18,19,20,56,63] The Latin American experience shows that the most effective strategies integrate social participation, interculturality, interprofessional education, and process management, with an ethical and contextualized perspective. These elements are key to advancing toward health governance that articulates institutional legitimacy, social equity, and the capacity to adapt to present and future crises.[19,45,68]

Finally, strengthening primary care in the region requires institutionalizing collaborative and intersectoral governance mechanisms, with distributed leadership, sustained financing, and local capacity building.[69,70,71,72] The sustainability of these transformations will depend on health systems' capacity to integrate innovation with social justice, recognize community knowledge, and overcome vertical and fragmented approaches. This chapter contributes to this reflection by proposing a framework for analysis that articulates theory, evidence, and regional experience to advance toward more equitable, participatory, and resilient health systems in Latin America.

REFERENCES

1. Muller F. Primary health care programs in Latin America. Rev Sanid Hig Publica. 1980;54(11-12):1277-1289. https://pubmed.ncbi.nlm.nih.gov/7348353/

2. Ghavamabad LH, Vosoogh-Moghaddam A, Zaboli R, Aarabi M. Establishing clinical governance model in primary health care: a systematic review. J Educ Health Promot. 2021;10:338. doi:10.4103/jehp.jehp_1299_20

3. Yavich N, Báscolo E. Current primary health care practices and research challenges in Latin America. Fam Pract. 2016;33(3):205-206. https://dx.doi.org/10.1093/fampra/cmw032

4. Rojas-Torres I, Gil Herrera RJ. Main challenges of primary health care in five Latin American countries. J Health Manag. 2023;25(4). https://dx.doi.org/10.1177/09720634231196950

5. Maceira D, Quintero REP, Suarez P, et al. Primary health care as a tool to promote equity and sustainability: a review of Latin American and Caribbean literature. Int J Equity Health. 2024;23:91. https://doi.org/10.1186/s12939-024-02149-9

6. Moncayo AL, Cavalcanti D, Ordoñez JA, et al. Can primary health care mitigate the effects of economic crises on child health in Latin America? Lancet Glob Health. 2024;12:e938-e946. https://dx.doi.org/10.1016/S2214-109X(24)00094-9

7. Duque-Paz LF, Castro-Arroyave D. Identification of social innovation in health criteria in Latin America. BMJ Open. 2022;12:e063205. https://doi.org/10.1136/bmjopen-2022-063205

8. Almeida PFD, Giovanella L, Schenkman S, Franco CM, Duarte PO, Houghton N, et al. Perspectives for primary health care public policy in South America. Cien Saude Colet. 2024;29:e03792024. https://doi.org/10.1590/1413-81232024297.03792024EN

9. Ruano AL, Rodríguez D, Gaitán Rossi P, Maceira D. Understanding inequities in health and health systems in Latin America and the Caribbean. Int J Equity Health. 2021;20. https://doi.org/10.1186/s12939-021-01426-1

10. Gómez JFS, Uribe MM. Aproximaciones epistemológicas a la salud mental comunitaria e intersecciones con la fisioterapia. J Physiother Ment Health. 2025;2(1):96-106. https://doi.org/10.70205/jptmh.v2i1.8599

11. Holzer F, Mastroleo I. Innovative care in Latin America: definition, justification and ethical principles. In: Controversies in Latin American Bioethics. Springer; 2019. https://doi.org/10.1007/978-3-030-17963-2_9

12. Massuda A, Titton CMS, Poli P. Remembering Alma-Ata: challenges and innovations in primary health care in a middle-income city in Latin America. Rev Panam Salud Publica. 2018;42:157. https://doi.org/10.26633/RPSP.2018.157

13. Báscolo E, Yavich N, Denis JL. Analysis of the enablers of capacities to produce primary health care-based reforms in Latin America: a multiple case study. Fam Pract. 2016;33:207-218. https://doi.org/10.1093/fampra/cmw038

14. Rojas Torres I, Gil Herrera RJ. Estrategias de atención primaria en salud en cinco países latinoamericanos. 2021. http://doi.org/10.5281/zenodo.5752275

15. Hufty M, Báscolo E, Bazzani R. Gobernanza en salud: un aporte conceptual y analítico para la investigación. Cad Saude Publica. 2006;22(Suppl):S35-S45. doi:10.1590/S0102-311X2006001300013

16. Rodríguez C, Lamothe L, Barten F, Haggerty J. Governance and health: meaning and implications in Latin America. Rev Salud Publica (Bogota). 2010;12(Suppl 1):151-159. doi:10.1590/S0124-00642010000700011

17. Báscolo E. Governance of primary health-care-based health-care organization. Rev Salud Publica (Bogota). 2010;12(Suppl 1):8-27. doi:10.1590/S0124-00642010000700002

18. Organisation for Economic Co-operation and Development. Primary health care for resilient health systems in Latin America. OECD Health Policy Studies. 2022. doi:10.1787/743e6228-en

19. Ccosi Paucar DR, Ccosi Paucar GV, Ccosi Paucar EW, Ccosi Paucar HZ, Medina Sotelo CG. Innovation and technology in health: current perspectives from Latin American public policies and the SDGs. J Lifestyle SDGs Rev. 2024;5(1):e04090. doi:10.47172/2965-730x.sdgsreview.v5.n01.pe04090

20. Flick U. Introducción a la investigación cualitativa. 3a ed. Madrid: Morata; 2015.

21. Creswell JW, Poth CN. Qualitative inquiry and research design: choosing among five approaches. 4th ed. Thousand Oaks (CA): Sage Publications; 2018.

22. Hernández-Sampieri R, Mendoza Torres C. Metodología de la investigación: las rutas cuantitativa, cualitativa y mixta. 7a ed. Ciudad de México: McGraw-Hill; 2021.

23. Bardin L. Análisis de contenido. 4a ed. Madrid: Akal; 2020.

24. Denzin NK, Lincoln YS. The SAGE handbook of qualitative research. 5th ed. Thousand Oaks (CA): Sage Publications; 2018.

25. Guba EG, Lincoln YS. Competing paradigms in qualitative research. In: Denzin NK, Lincoln YS, editors. Handbook of qualitative research. Thousand Oaks: Sage; 1994. p. 105-117.

26. Morse JM. Critical analysis of strategies for determining rigor in qualitative inquiry. Qual Health Res. 2015;25(9):1212-1222.

27. Minayo MCS. El desafío del conocimiento: investigación cualitativa en salud. Buenos Aires: Lugar Editorial; 2017.

28. Sandelowski M. Whatever happened to qualitative description? Res Nurs Health. 2000;23(4):334-340.

29. Valencia-Contrera M, Süazo S. El valor relegado de la atención primaria durante la pandemia COVID-19: una de enfermería. Rev Salud Publica (Bogota). 2022;24(3):1-5. https://doi.org/10.15446/rsap.v24n3.97270

30. Fortuna C, Dias B, Laüs A, Mishima S, Cassiani S. Educación interprofesional en salud en la Región de las Américas desde la perspectiva de la enfermería. Rev Panam Salud Publica. 2022;46:1. https://doi.org/10.26633/rpsp.2022.69

31. Oliveira G, Almeida M, Artucio C, Espíndola L, Rivera M, Filho A, et al. Brazilian guideline on menopausal cardiovascular health – 2024. Rev Bras Ginecol Obstet. 2024;46. https://doi.org/10.61622/rbgo/2024rbgo100

32. Fajardo C, Belzu M, Benitez M, Hoyos Á, Patiño R, Monterrosa L, et al. Therapeutic hypothermia success for hypoxic-ischaemic encephalopathy in Latin America: eight-year experience in EpicLatino neonatal network. Acta Paediatr. 2024;114(5):922-928. https://doi.org/10.1111/apa.17504

33. López E, Cabrera R, Lecaros C. Targeted therapy for immune mediated skin diseases: what should a dermatologist know? An Bras Dermatol. 2024;99(4):546-567. https://doi.org/10.1016/j.abd.2023.10.002

34. Lucca S, Silva-Júnior J, Bandini M. Critical analysis of psychosocial factors at work within the risk management program of regulatory standard-1. Rev Bras Med Trab. 2025;23(1):1-8. https://doi.org/10.47626/1679-4435-2025-1425

35. Guevara Tirado A. Frecuencia de atenciones realizadas en el servicio de medicina general, según sexo, en el distrito de Villa El Salvador, Lima-Perú. Horiz Med (Lima). 2022;22(2):e1586. http://www.scielo.org.pe/scielo.php?pid=S1727-558X2022000200010&script=sci_abstract

36. Ceriani L, Lopez-Calva LF, Restrepo-Oyola SD. Territorial inequalities. 2025. https://openknowledge.worldbank.org/bitstreams/f78f5367-16f5-40d8-9ba0-bf7c46f45050/download

37. Rivas LMA, Merelo OLÁ. Gestión administrativa: desafíos en la salud pública. Cienc Lat Rev Cient Multidiscip. 2025;9(3):2749-2757. https://doi.org/10.37811/cl_rcm.v9i3.17900

38. Lipa-Tudela F. Abordaje de las características y la depresión posparto en puérperas del altiplano peruano. 2024:464-477. https://doi.org/10.35622/inudi.c.02.26

39. Ladera-Castañeda M, Sotelo C. Oral health in Latin America: a view from public policies. Salud Cienc Tecnol. 2023;3:340. https://doi.org/10.56294/saludcyt2023340

40. Betancurth-Loaiza DP, Vélez-Álvarez C, Sánchez-Palacio N, Jaramillo-Ángel CP. Atención primaria social en Colombia: una mirada desde una experiencia exitosa. Salud UIS. 2022;54. https://doi.org/10.18273/saluduis.54.e:22016

41. Kujawa H, Pinto R, Leles F, Machado F. Participação em saúde como elemento indissociável para o fortalecimento dos sistemas de atenção à saúde nas Américas. Rev Panam Salud Publica. 2023;47:1. https://doi.org/10.26633/rpsp.2023.109

42. Solarte Portilla ALS, Sanchez KA, Diaz YMA, López HMH. Aproximación general a la gestión por procesos en los servicios de salud en Latinoamérica: una revisión bibliográfica. Informes Psicol. 2024;24(1):69-89. https://doi.org/10.18566/infpsic.v24n1a05

43. Tavera Vilchis MA. Telemedicina… ¿la revolución de la consulta del médico familiar? Arch Med Fam. 2024;26(6):311-314. https://doi.org/10.62514/amf.v26i6.103

44. Suaza Cetina MA, Corredor Camargo AM, Mojica Figueroa AM. Innovación digital en salud: un desafío para la dirección estratégica en la era post-COVID-19. 2024. https://digitk.areandina.edu.co/bitstream/areandina/5991/1/Trabajo%20%20de%20%20Grado.pdf

45. Guedes H, Júnior J, Januário D, Trigueiro D, Leadebal O, Barrêto A. Tecnologías de la información como apoyo organizacional para luchar contra el COVID-19: el discurso de los enfermeros. Rev Lat Am Enfermagem. 2023;31. https://doi.org/10.1590/1518-8345.6202.3854

46. Puertas EB, Sotelo JM, Ramos G. Liderazgo y gestión estratégica en sistemas de salud basados en atención primaria de salud. Rev Panam Salud Publica. 2020;44. https://iris.paho.org/handle/10665.2/52895

47. Kyerematen R, Lynch M, Pinzón-Segura M, Osei-Bonsu A, Fortmann J, Wood D. What the children tell us: the COVID-19 pandemic and how the world should respond. BMJ Paediatr Open. 2022;6(1):e001481. https://doi.org/10.1136/bmjpo-2022-001481

48. Cuba Diaz AE, Cardenas Condori CR. Transformación digital y gestión financiera en la administración hospitalaria en una institución pública de salud, 2023. Dilemas Contemp Educ

Polit Valores. 2024. https://doi.org/10.46377/dilemas.v11i2.4028

49. Agudelo-Hernández F, Plata-Casas L, Vélez-Botero H, Vieira L, Mayorga B. Programa de acción para superar las brechas en salud mental: un modelo teórico de las barreras de implementación desde el personal de salud en Chocó, Colombia. Rev Panam Salud Publica. 2024;48:1. https://doi.org/10.26633/rpsp.2024.49

50. Véliz-Rojas L, González-Geraldo A, Torres A, Carvajal M, Arancibia C, Vivanco C. Una propuesta para incorporar el fenómeno de crisis ambiental global en la formación profesional de pregrado en enfermería. Cienc Enferm. 2023;29. https://doi.org/10.29393/ce29-13uplc60013

51. Rodríguez-Morales A, Lopardo G, Verbanaz S, Orduña T, Lloveras S, Azeñas-Burgoa J, et al. Latin America: situation and preparedness facing the multi-country human monkeypox outbreak. Lancet Reg Health Am. 2022;13:100318. https://doi.org/10.1016/j.lana.2022.100318

52. Alarcón-Braga E, Hernández-Bustamante E, Salazar-Valdivia F, Valdez-Cornejo V, Mosquera-Rojas M, Ulloque-Badaracco J, et al. Acceptance towards COVID-19 vaccination in Latin America and the Caribbean: a systematic review and meta-analysis. Travel Med Infect Dis. 2022;49:102369. https://doi.org/10.1016/j.tmaid.2022.102369

53. Machado F, Rech C, Pinto R, Romão W, Matias M, Freitas G, et al. Participación en salud en las Américas: mapeo bibliométrico de producción, impacto, visibilidad y colaboración. Cien Saude Colet. 2023;28(2):487-500. https://doi.org/10.1590/1413-81232023282.11412022esp

54. Molina P, Cerda R, Rojas D, Véjar L, Gálvez P. 'Un nexo, un poco de todo': perspectivas sobre la práctica del promotor comunitario de salud en Chile. Glob Health Promot. 2022;29(4):150-160. https://doi.org/10.1177/17579759221076583

55. Ordoñez L, Niño-Gutiérrez E, Casanova M, Campo F, Rodríguez A, Robayo D. Participación y empoderamiento comunitario en la atención primaria en salud en América Latina: revisión sistemática exploratoria. Rev Panam Salud Publica. 2024;48:1. https://doi.org/10.26633/rpsp.2024.135

56. Restrepo Villa RO, Gómez Builes GM. Participación comunitaria en salud: sistematización de las experiencias de la Mesa en Salud de Moravia, Medellín 2017-2021. Rev Fac Nac Salud Publica. 2022;41(1):e348891. https://doi.org/10.17533/udea.rfnsp.e348891

57. Paredes Haro HD, Quezada AEG, Segura COT. Desafíos en el acceso a servicios de salud en comunidades indígenas de Chimborazo: análisis de barreras y posibles soluciones. VitalyScience Rev Cient Multidiscip. 2025;3(7):45-54. https://doi.org/10.56519/qykcww80

58. Villasana López PE, García Gualda SM. Política de salud intercultural de Chile y Argentina: análisis crítico a partir del Convenio 169 de la OIT. Religacion. 2024;9(43):e2401327. https://doi.org/10.46652/rgn.v9i43.1327

59. Aké-Chan M, Sanmartino M, Castillo-Burguete M, Martínez A, Ibarra-Cerdeña C. (In) coherence between Chagas disease policy and the experiences of those affected in Mexico: the need for a transdisciplinary approach. PLoS Negl Trop Dis. 2025;19(5):e0013052. https://doi.org/10.1371/journal.pntd.0013052

60. Hernández-Silva C, Ramírez-de-Arellano A, Pereira-Suárez A, Ramírez-López I. HPV and cervical cancer: molecular and immunological aspects, epidemiology and effect of vaccination in Latin American women. Viruses. 2024;16(3):327. https://doi.org/10.3390/v16030327

61. Sukhampha R. Promise or peril? 'Devolution as modality' for decentralisation in primary healthcare in Thailand. 2024:64-86. https://doi.org/10.56687/9781447373605-007

62. Mella P, Narváez C. Análisis del sistema de salud chileno y su estructura en la participación social. Saude Debate. 2022;46(spe4):94-106. https://doi.org/10.1590/0103-11042022e407

63. Guerrero-Nancuante C, Sánchez N. Participación social en el sistema de salud de Chile: aportes reflexivos desde la bioética. Salud Colect. 2023;19:e4486. https://doi.org/10.18294/sc.2023.4486

64. Haldane V, Morales-Vazquez M, Jamieson M, Veillard J, Marchildon GP, Allin S. Learning from the first wave of the COVID-19 pandemic: comparing policy responses in Uruguay with 10 other Latin American and Caribbean countries. Health Policy Open. 2022;3:100081. https://doi.org/10.1016/j.hpopen.2022.100081

65. Simeon D, Cuba V, Hunte S, Barker K, Habich M. Intersectoral collaboration in the COVID-19 response in Latin America and the Caribbean. Int J Equity Health. 2024;23(1). https://doi.org/10.1186/s12939-024-02233-0

66. Escobar Díaz FA, Rodriguez Corredor ZA. Salud en todas las políticas e intersectorialidad en América Latina y el Caribe, 2011-2021: revisión de alcance. Rev Salud Publica (Cordoba). 2023;29(2). https://doi.org/10.31052/1853.1180.v29.n2.42180

67. Rodríguez A, Couto P, Acevedo A, Herrera B, Astudillo O, Avaro M, et al. Strengthening the surveillance and response to public health events with a one health approach: a perspective from 12 countries in Latin America and the Caribbean. J Infect Dis. 2025;231(Suppl 2):S108-S113. https://doi.org/10.1093/infdis/jiae629

68. Duran-Aniotz C, Sanhueza J, Grinberg L, Slachevsky A, Valcour V, Robertson I, et al. The Latin American Brain Health Institute, a regional initiative to reduce the scale and impact of dementia. Alzheimers Dement. 2022;18(9):1696-1698. https://doi.org/10.1002/alz.12710

69. Pineo R. The young democracies of Latin America and the Caribbean. J Dev Soc. 2024;40(2):127-149. https://doi.org/10.1177/0169796X241253312

70. Cassiani SHDB, Dias BM, Durães MD, Almeida BG, Palha PF, Ventura CAA, Gir E, et al. Final report from the forum on nursing practice regulation in the Region of the Americas March 15-16, 2023. Enferm Foco. 2023;14(S1):e-202301ESP1. https://dx.doi.org/10.21675/2357-707X.2022.v14.e-202301ESP12

71. Román-Acosta D. Intersectoral collaboration for the development of rural entrepreneurship in Latin America and the Caribbean. SCT Proc Interdiscip Insights Innov. 2023;1:224. https://doi.org/10.56294/piii2023224

72. Lavell A, Arenas N, Brito-Morales I. Advances and challenges in DRR investment and

financing: an analysis in three parts – part I. Introduction and section 1: capitalising on history to address challenges in disaster risk reduction investment and build our common future (a UNDRR–RAR 2024 epilogue). Disaster Prev Manag. 2025;:1-12. https://doi.org/10.1108/DPM-04-2025-0128

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