







## Special report

# Expanding team-based care for hypertension and cardiovascular risk management with HEARTS in the Americas

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## ABSTRACT

Cardiovascular diseases remain the leading cause of premature morbidity and mortality globally, with hypertension as their main modifiable risk factor. In Latin America and the Caribbean, hypertension affects more than 30% of adults, yet control rates remain alarmingly low. The HEARTS in the Americas Initiative, led by the Pan American Health Organization, promotes a model of team-based care to enhance risk management for hypertension and cardiovascular diseases within primary health care. Team-based care leverages the skills of diverse health professionals, including nurses, pharmacists and community health workers, to optimize resource allocation, task-sharing and care delivery. Evidence underscores the effectiveness of team-based care in improving blood pressure control, reducing hospitalizations and enhancing quality of life through strategies such as periodic follow up and medication titration. Despite its benefits, implementing team-based care faces cultural and systemic barriers. This special report outlines a policy framework to scale team-based care across the Region of the Americas, ensuring equitable access to high-quality, cost-effective prevention and care for cardiovascular diseases.

## Keywords

Cardiovascular diseases; primary health care; hypertension.

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Cardiovascular disease (CVD) is the leading cause of premature morbidity and mortality globally, and hypertension is the most important modifiable risk factor for CVD and death, with more than 50% of CVD events and 17% of deaths overall being attributed to elevated blood pressure in Latin American and Caribbean countries (1). In Latin America and the Caribbean, more than 25% of women and 40% of men aged 30–79 years have hypertension, and yet only 35% of women and 23% of men with hypertension have their blood pressure controlled (i.e. <140/90 mmHg) (2). Such figures are a cause for concern, revealing serious issues with access to and the quality of care (3, 4).

The World Health Organization's (WHO) Global Hearts Initiative assists ministries of health in developing strategies to prevent and manage CVD within primary health care (PHC), with a particular focus on hypertension management (5). Highly important for Latin America and the Caribbean, HEARTS in the Americas, the regional adaptation coordinated by the Pan American Health Organization (PAHO), has been adopted by 33 countries in the Region of the Americas so far (4).

Team-based care is a key component of HEARTS in the Americas and has emerged as a pivotal strategy to tackle the growing CVD epidemic (4). Team-based care refers to a collaborative model in which diverse health professionals and community actors share responsibilities and tasks to improve health care (6). This model not only increases the efficiency, reach and accessibility of health care services but also enhances the effectiveness of interventions by utilizing a diverse range of skills and perspectives (7–10). Hence, team-based care is essential to accelerating the HEARTS program's implementation across the Region of the Americas (11). In this regard, team-based care is a paradigm shift in CVD prevention and management strategies that holds value for both high-income and lower-income countries. However, the implementation of HEARTS in the Americas faces significant challenges. Cultural traditions, societal norms, labor laws and established practices act as barriers, hindering the development of a more effective and efficient approach to team-based care (4, 5).

The aim of this special report is to present a concise review of team-based care, its evidence base and its applicability within the HEARTS Initiative. Additionally, we propose a policy framework to guide actions and support countries in adopting and strengthening team-based care as a core component of their health systems.

## OVERVIEW OF TEAM-BASED CARE

Team-based care involves diverse health professionals working together to provide patient-centered care, with roles that are often adjusted to maximize each professional's reach, scope and expertise. Through team-based care, health care systems can become more effective and efficient by allocating tasks to the appropriate level of expertise, optimizing the use of resources and achieving broader reach as well as more coordinated and effective care (12).

Team-based care improves the quality of care and patients' outcomes, especially in PHC settings where chronic disease management demands regular follow up and comprehensive lifestyle and medication support (13–16).

## Non-physician health care workers: key actors in team-based care

Effective management of hypertension and CVD requires a comprehensive approach that leverages the full potential of the health care team. Non-physician health care workers – including nurses, pharmacists, community health workers and others – play a pivotal role in models of team-based care, expanding access to preventive and management services. Several randomized controlled trials have reported that interventions led by non-physician health care workers were effective not only in reducing blood pressure and improving hypertension control but also in reducing the incidence of CVD and mortality (17). However, there remains a need for more implementation research focused on the adoption, feasibility and acceptability of team-based care in different contexts.

This section explores the contributions of various approaches to team-based care, their proven effectiveness in CVD prevention and management, and how they can be integrated into routine care strategies to support the HEARTS Initiative and beyond.

**Community health workers.** Studies highlight the effectiveness of community health workers in improving blood pressure control through different roles and interventions, offering a scalable model for urban, rural and semiurban populations. Evidence from a study by He et al. indicates that interventions in which community health workers visit homes to provide counseling and monitor blood pressure have been effective in various settings (18). By addressing cultural barriers and serving as a bridge between patients and the health care system, community health workers play an essential role in intervention delivery, ensuring that care is accessible and culturally responsive. For example, a study conducted in New York City showed that a health coaching intervention led by community health workers was effective in helping patients control their blood pressure in primary care settings (19). Notably, reductions in adverse CVD outcomes and all-cause mortality were observed in the study by He et al. (18). In a cluster-randomized controlled trial conducted in a rural population in China, hypertensive patients in the intervention group received care from trained community health workers who initiated and titrated antihypertensive medication following a simple stepped-care protocol to achieve blood pressure goals under the supervision of a primary care physician (17). This strategy closely aligns with the HEARTS clinical pathway.

**Nurses.** Evidence suggests that nurse-led management for hypertension helps patients achieve significant improvements in blood pressure control. In a meta-analysis that included 37 trials and 9 731 participants, nurse-led interventions, such as monitoring blood pressure, educational outreach, home visits and support for behavioral change, were shown to be effective in improving general lifestyle measures, medication adherence and blood pressure control (20). For example, the Cuban health system's success in achieving population-level hypertension control has been largely attributed to its PHC model centered on practices with family doctors and nurses that uses a model of team-based care (21).

Evidence also suggests that an important role of nurses within the PHC team is to prescribe medications (8). A meta-analysis demonstrated that nurse-led interventions, in which nurses

prescribed medications and initiated or adjusted treatment following a structured protocol or in consultation with a physician, resulted in significantly greater reductions in both systolic and diastolic blood pressure compared with usual care (13).

**Pharmacists.** Pharmacists can contribute to case-finding, medication management, patient counseling and adherence monitoring. Evidence shows that pharmacist involvement in models of team-based care reduces medication errors, improves adherence and ultimately leads to better hypertension control (22–24). A meta-analysis that included 39 studies involving 14 224 outpatients demonstrated positive results and supported the use of pharmacist-led interventions for enhancing systolic and diastolic blood pressure control. These findings align with two previous systematic reviews, further substantiating the role of pharmacists in managing blood pressure among outpatients (25, 26). Strategies involving medication titration by pharmacists have proven to be highly effective and cost effective for the management of hypertension in different settings (16, 22, 27, 28). Indeed, a meta-analysis conducted by Mills et al. (8) that compared the effectiveness of team-based care interventions, found that pharmacist-led interventions involving medication titration are among the most effective. In a study conducted in Mexico, pharmacist-led interventions demonstrated their potential for scalability in other countries in the Region (29).

**Dentists.** Although less commonly included in team-based care, dentists can play an essential role in early screening and referrals for hypertension. While some studies have identified gaps in knowledge and training related to hypertension detection by dentists (30), some small studies have suggested that incorporating routine blood pressure screening into dental clinics may lead to early detection and timely referral for hypertension management (31, 32).

**Nutritionists.** Interventions led by nutritionists, which include counseling about nutrition and healthy habits, as well as educational programs, have been shown to be effective in improving health outcomes (33). A systematic review conducted by Benson et al. provides evidence that nutritionist-led medication management using physician-approved protocols or treatment algorithms can result in clinically significant improvements in the management of diabetes, dyslipidemia and hypertension, and proved to be as effective as or superior to usual care (34).

**Patients and caregivers.** Engaging patients and caregivers as active participants in team-based care ensures better adherence to treatment regimens and lifestyle modifications. Research shows that home self-monitoring and family support significantly enhance blood pressure control, suggesting that empowering patients and their caregivers is an essential element of team-based care (35, 36). Indeed, home self-monitoring has been recommended in several clinical guidelines in recent years (37–39).

## APPLICABILITY TO THE HEARTS CLINICAL PATHWAY

Team-based care is a cornerstone of the HEARTS clinical pathway. This model minimizes inconsistencies and ensures uniformity in care delivery (40). As depicted in Figure 1, the pathway requires health authorities to guarantee the availability of essential components of care, such as affordable, high-quality medications; validated, automated blood pressure

monitors; other vital resources; and training and certification of the PHC team (41). In the HEARTS clinical pathway, the role of non-physician health care workers is key in managing patient follow up, tracking adherence, delivering lifestyle counseling, and titrating medication according to a standardized and simple treatment protocol, with supervision from primary care doctors, as recommended by WHO (42). Each role in the team-based care model has a place in the HEARTS clinical pathway, through which nurses and pharmacists, as well as other non-physician health care workers, can ensure that interventions are delivered consistently and effectively across different settings.

By contextualizing team-based care within the HEARTS clinical pathway, health care providers can tailor interventions to meet local needs, ensuring that each professional's contributions are optimized according to community health priorities and resources (4).

## Two case studies from the Region

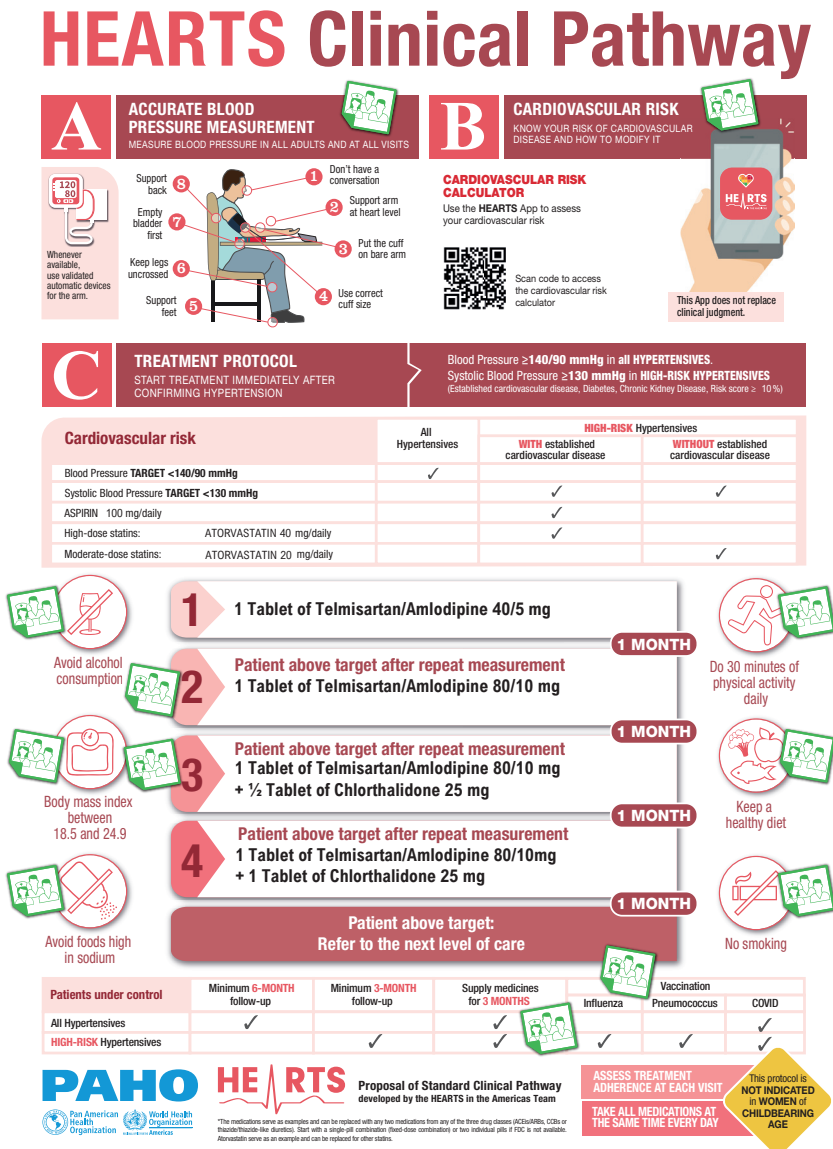
**Implementation of HEARTS in the Americas: El Salvador.** Key to the success of HEARTS in the Americas in El Salvador was strong political support and the commitment of multidisciplinary health care teams. The urgency for intervention arises because CVD is the leading cause of death in the country, driven largely by elevated blood pressure, with a prevalence of hypertension of 37% among the adult population (44). In August 2021, the Ministry of Health formalized its commitment to implementing HEARTS in the Americas, with technical support from PAHO. Early in 2022, a national technical steering team, representing the *Sistema Nacional Integrado de Salud* (National Integrated Health System), was established. The HEARTS clinical pathway (43) was adapted to the local context and followed by a needs assessment based on key drivers.

Rapid progress was made in integrating single pill combinations of antihypertensive medicines, the use of high-dose statins and the deployment of validated digital blood pressure monitors. Since 2022, more than 8 000 health care professionals, including 2 628 primary care physicians, 3 081 nurses and 3 057 community health workers, have been trained in risk management for hypertension and CVD. Workshops on team-based care emphasized delivery of continuous care through integrated and comprehensive health networks, ensuring robust follow up for high-risk patients. Teleclinics were established to reach remote health care personnel, enhancing accessibility and reinforcing knowledge. Technical assistance supported implementation, monitoring and evaluation, fostering a culture of quality care and empowering PHC teams.

In 2024, a major policy change (45) allowed nurses to titrate medications under specific guidelines, boosting team capacity. Non-pharmacological interventions were also prioritized – such as the “exercise is medicine” program, patient education, self-help groups and dietary guidance – to reduce risk factors and empower patients. This policy change started to be implemented at the end of 2024, which will allow facilitators and barriers to be identified so that it can be scaled up.

**Fostering team-based care in Chile.** In 2019, HEARTS in the Americas was officially launched in Chile, starting with the implementation of a standardized protocol for treating

FIGURE 1. HEARTS clinical pathway and team-based care<sup>a</sup>





provide valuable insights to guide future decisions about continuous improvement and ensure nationwide expansion.

**TOWARDS A POLICY FRAMEWORK FOR TEAM-BASED CARE FOR HEARTS**

The expansion of team-based care for hypertension and CVD risk management requires a comprehensive health system approach. Guided by the Health Policy Triangle approach of Walt and Gilson (48), this report reflects on a robust understanding of the roles that various stakeholders must play to integrate team-based care into PHC systems across the Americas. This model emphasizes the importance of examining policy through four interconnected elements: actors (stakeholders), context (environmental factors), content (specific policy elements) and process (steps for policy formulation and implementation) (Figure 2).

**Actors**

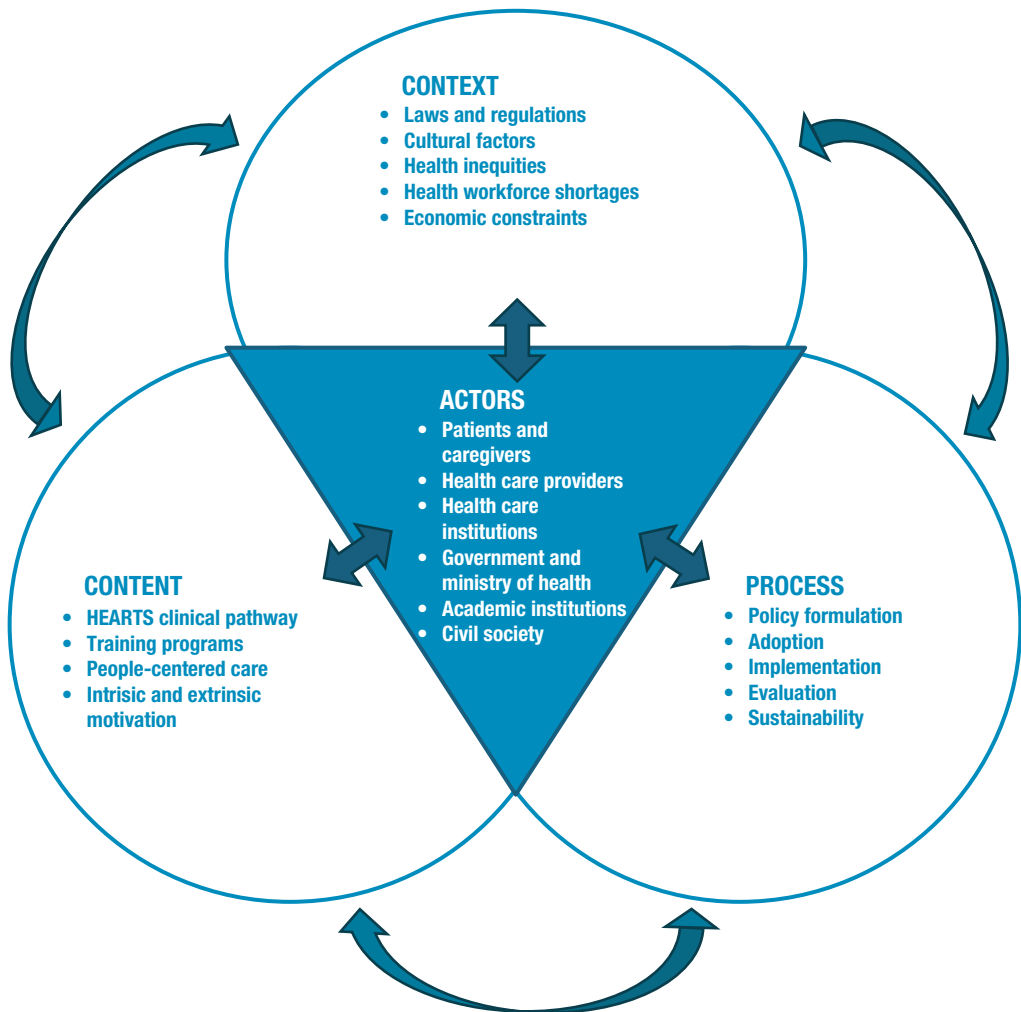
Actors include all stakeholders who directly or indirectly influence the development, support, and implementation of policies for team-based care. Each actor plays a unique

role in advancing team-based care as part of HEARTS in the Americas.

**Government bodies.** National governments and government bodies or entities play a central role in formulating health policies that endorse team-based care for managing CVD and other chronic conditions. Governments should set the legislative foundation and allocate financial resources to support team-based care initiatives. Their support is crucial for removing regulatory barriers that restrict task-sharing or limit the scope of practice for non-physician health care workers. For example, in many countries these workers are not allowed to take point-of-care lab measurements or titrate medication, even under standardized protocols and supervision, while in other cases nurses can manage medication for conditions such as tuberculosis or HIV infection but not hypertension (3, 49, 50). By prioritizing team-based care in health agendas, governments can empower the health workforce to effectively implement HEARTS in the Americas.

**Ministries of health.** These are key operational actors responsible for developing guidelines and protocols that shape team-based care practices. Ministries of health can use the HEARTS clinical pathway to promote and facilitate

**FIGURE 2. Policy framework for team-based care based on the Health Policy Triangle**



Source: Figure prepared by the authors based on the model developed by Walt and Gilson (48).

task-sharing, define clear roles for health care providers and ensure that team-based care aligns with national health strategies. Additionally, they can support professional training programs and promote the use of the open, online training modules developed by PAHO (51), incentivizing health workers to adopt team-based care approaches to manage hypertension and CVD. Ministries of health also have significant financing functions (for example, budgetary allocation, disbursement, procurement and remuneration of health workers) that may further support the operationalization of team-based care.

**Health care institutions.** It is not only PHC centers and health posts that serve as the frontline for implementing team-based care but also hospitals and other health care facilities. They are responsible for fostering collaborative environments that support task-sharing among physicians, nurses, pharmacists, community health workers and other non-physician health care workers, ensuring that they fulfill their roles effectively.

**Academic institutions.** Academic institutions and training programs for medical, nursing, and public health students must adapt their curricula to prepare graduates for roles in providing team-based care. Despite some advances made by the Dominican Republic, this approach is lacking in the Region (52). These institutions also have a key role in generating evidence about team-based care to inform policy and practice. Importantly, support and recognition from scientific societies are also crucial to acknowledging the value and importance of team-based care. Such support can help overcome resistance rooted in prestige or economic incentives, ultimately fostering wider adoption of team-based care.

**Health care providers and professional associations.** Community health workers are often the primary liaison between communities and the formal health care system. They usually come from the communities they serve and share cultural, socio-economic and linguistic traits with that community. Recognizing community health workers as essential actors in team-based care requires policy support for their training, remuneration and inclusion in the formal health workforce. Additionally, associations of nurses, physicians, pharmacists and others, can play major roles in supporting legislative changes.

**Patients and caregivers.** As active participants in team-based care, patients and caregivers are essential to self-management and ensuring adherence to care plans (53). Policies that promote patient empowerment and shared decision-making enhance the effectiveness of team-based care. By recognizing patients and caregivers as integral members of the team, health care providers can improve hypertension and CVD outcomes.

**Civil society and advocacy groups.** These organizations have a role to play in supporting team-based care. They can exert some influence over government decision-makers and regulatory agencies, ensuring the welfare of patients and fighting for the rights of patients to access optimum care for noncommunicable diseases.

## Context

The context involves the broader sociopolitical, economic and health system factors that shape the feasibility and effectiveness of policies for team-based care. Several contextual factors might impact this care in the Americas.

**Regulatory environment.** The regulatory context influences the scope of practice for non-physician health care workers.

In some countries, regulations restrict task-sharing or limit the autonomy of health care workers to engage in team-based care practices. Reforming these regulations is crucial to allow a broader range of providers to actively participate in managing the risks from hypertension and CVD (54).

**Cultural factors.** Cultural beliefs, social norms and values significantly influence how health care services are received and utilized across the Americas. For team-based care to be effective, it must be culturally sensitive and responsive to the norms and beliefs of diverse populations. Cultural factors impact both health care providers' perceptions of their colleagues on the care team and the level of trust users have in the health care system. In many parts of Latin America and the Caribbean, the health care paradigm remains largely physician-centered. This perspective is held by many physicians, who may resist sharing responsibilities with other health care workers, and by patients, who may lack trust in non-physician team members. Communication campaigns directed towards the community, along with integrated training for health care providers, can help address these barriers and foster acceptance of team-based care.

**Economic constraints.** Many countries in the Americas face budget limitations in health care that impact the resources available for chronic disease management. Team-based care has proven to be cost effective, making it a viable model even in resource-constrained settings (16, 27, 28, 55). However, the economic context requires policies that allocate funding specifically for training in team-based care, relevant infrastructure and incentives for health workers.

**Health inequities.** Disparities in health care access and outcomes are significant across the Americas, affecting both rural and urban communities (56). Policies that promote team-based care can help mitigate these inequities by extending services to underserved populations through community health workers. Addressing these disparities requires commitment to policies that support the inclusive and equitable distribution of health resources.

**Integrated, interoperable information systems.** Information systems, including electronic medical records, facilitate team-based care by enabling the continuity of care to be tracked by various members of the health care team, as well as being useful for monitoring health outcomes and the trajectory of care.

## Content

Policies for team-based care must include guidelines, protocols and specific interventions that support its integration into service delivery. Essential components, detailed in the HEARTS technical package (57), should include the following.

**Guidelines for task-sharing and task-shifting.** Policies must clearly define roles and responsibilities for each team member involved in hypertension and CVD care, ensuring a structured approach to team-based care. The HEARTS clinical pathway and the "T" module of the HEARTS technical package guide nurses, pharmacists and community health workers to perform key tasks traditionally reserved for physicians, including prescribing and titrating medications according to well-established protocols and under supervision.

**Training programs.** Policies for team-based care should include standardized training programs that equip health care providers with the skills needed to deliver collaborative care. Training should cover core competencies in hypertension and

CVD risk management, patient counseling and culturally sensitive care to support diverse populations across the Americas. Such training programs and technical support are currently offered by HEARTS in the Americas (54).

**Patient-centered care models.** Policies for team-based care must emphasize patient-centered care as a foundational element. This should include protocols for engaging patients in decision-making, promoting self-management and incorporating feedback from patients into care plans. Policies should support education programs that empower patients and caregivers to actively participate in managing their health or their loved one's health.

**Intrinsic and extrinsic motivation.** Policies should incorporate financial and non-financial incentives for health workers who participate in team-based care models, such as financial rewards for achieving goals, career development opportunities and professional recognition. Along with increasing the visibility of health care workers in the communities they serve, these structures can motivate health workers to embrace team-based care, ensuring sustainable implementation and retaining staff in these roles.

## Process

The process is contingent on the steps involved in policy formulation, adoption, implementation, evaluation and sustainability. Together, these steps form the policy life cycle, flowing into one another in an ongoing circle.

**Stakeholder engagement and policy formulation.** Effective policies for team-based care require collaboration and input from a broad range of stakeholders, including government officials, health care providers, academic institutions and patient advocacy groups, among others. This collaborative process ensures that policies reflect diverse perspectives, values and expectations. Team-based care implies a change in the health care paradigm and should be adaptable to the specific needs of each community.

**Policy adoption and resource allocation.** Once formulated, policies should be officially adopted by the ministry of health and backed by dedicated funding streams. Adopting team-based care policies as part of HEARTS in the Americas requires resources to be allocated for training, infrastructure and human resources to ensure it is feasible to implement in a variety of health care settings.

**Capacity-building and implementation.** Ministries of health should provide technical support and resources to health care institutions to build the capacity needed for team-based care. This includes implementing training workshops, and providing educational materials and support for community health workers and other health care workers who operate in community settings. Local adaptation of team-based care can be facilitated by leveraging regional partnerships and sharing best practices. The HEARTS in the Americas training tools provide useful resources (58, 59).

**Monitoring and evaluation.** A monitoring and evaluation framework is essential for tracking the progress and impact of team-based care policies. Ensuring there is regular evaluation allows stakeholders to identify challenges, assess policy effectiveness and make adjustments, as needed. Monitoring and evaluation efforts should include both process and outcome indicators for patients' outcomes, provider satisfaction and cost effectiveness to offer comprehensive insights into the performance of models of team-based care in different contexts. HEARTS in the Americas has developed the District

Health Information Software 2 (or DHIS-2) HEARTS platform for PHC facilities, a user-friendly dashboard for hypertension management that can be used to monitor patients and program performance (60).

**Continuous improvement, adaptation and sustainability.** Policies for team-based care should be viewed as dynamic and subject to continuous refinement based on data from evaluations and emerging research, and evolving health system and community needs. Regular feedback loops, through which health care providers, patients, and policy-makers communicate about their experiences with team-based care and outcomes, can inform ongoing improvements. Adaptable policies allow health care systems to respond to challenges, ensuring that team-based care remains effective and sustainable in managing the risks from hypertension and CVD.

## Conclusions and call to action

Expanding team-based care is essential for addressing the CVD epidemic in the Americas. This special report highlights the benefits of this approach, particularly within HEARTS in the Americas, for improving hypertension and CVD risk management in PHC settings.

We urge all stakeholders to prioritize the development of interdisciplinary team-based care across primary care networks. To translate evidence into action, practical steps must be taken at each level. At the macro level, the framework in this paper is essential for advancing policy reforms to allow trained non-physician health care workers to titrate antihypertensive medications by following a standard protocol. At the mid-level, health authorities should establish multidisciplinary teams and promote team-based care as the standard in PHC. At the micro level, health workers and primary care leaders should ensure the effective implementation of the HEARTS clinical pathway in everyday practice. Expanding team-based care will not only accelerate the implementation of HEARTS in the Americas but also create a sustainable approach to hypertension and CVD risk management across the Region.

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## Ampliación de la atención en equipo para la hipertensión y el manejo del riesgo cardiovascular por medio de HEARTS en las Américas

### RESUMEN

Las enfermedades cardiovasculares siguen siendo la principal causa de morbilidad y mortalidad prematuras en todo el mundo, y la hipertensión es su principal factor de riesgo modificable. En América Latina y el Caribe, aunque la hipertensión afecta a más del 30% de las personas adultas, las tasas de control siguen siendo alarmantemente bajas. La iniciativa HEARTS en las Américas, liderada por la Organización Panamericana de la Salud, promueve un modelo de atención basada en el trabajo en equipo para mejorar el manejo del riesgo de hipertensión y enfermedades cardiovasculares en la atención primaria de salud. En la atención basada en el trabajo en equipo se aprovechan las competencias de diversos profesionales de la salud —por ejemplo, profesionales de la enfermería, personal farmacéutico y agentes comunitarios de salud— para optimizar la asignación de recursos, la división de tareas y la prestación de cuidados. La evidencia subraya la eficacia de la atención basada en el trabajo en equipo para mejorar el control de la presión arterial, reducir el número de hospitalizaciones y mejorar la calidad de vida mediante estrategias como el seguimiento periódico y el ajuste de la medicación. A pesar de sus ventajas, la implantación de la atención basada en el trabajo en equipo enfrenta obstáculos culturales y sistémicos. En este informe especial se presenta un marco de política para ampliar la atención basada en el trabajo en equipo en toda la Región de las Américas, garantizando un acceso equitativo a una prevención y atención de buena calidad y costoeficaz de las enfermedades cardiovasculares.

**Palabras clave** Enfermedades cardiovasculares; atención primaria de salud; hipertensión.

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## Ampliação da atenção baseada em equipe para a gestão do risco de hipertensão arterial e doenças cardiovasculares com a iniciativa HEARTS nas Américas

### RESUMO

As doenças cardiovasculares continuam sendo a principal causa de morbimortalidade prematura no mundo, e a hipertensão arterial é o principal fator de risco modificável. Na América Latina e no Caribe, a hipertensão arterial afeta mais de 30% dos adultos, mas as taxas de controle permanecem assustadoramente baixas. A iniciativa HEARTS nas Américas, liderada pela Organização Pan-Americana da Saúde, promove um modelo de atenção baseada em equipe para aprimorar a gestão do risco de hipertensão arterial e doenças cardiovasculares na atenção primária à saúde. A atenção baseada em equipe procura aproveitar as habilidades de diversos profissionais da saúde, como profissionais de enfermagem e farmácia e agentes comunitários de saúde, para otimizar a alocação de recursos, o compartilhamento de tarefas e a prestação de cuidados. As evidências destacam a efetividade da atenção baseada em equipe para melhorar o controle da pressão arterial, reduzir as internações hospitalares e melhorar a qualidade de vida, por meio de estratégias como o acompanhamento periódico e o ajuste da dose dos medicamentos. Apesar de seus benefícios, a implementação da atenção baseada em equipe enfrenta barreiras culturais e sistêmicas. Este relatório especial descreve uma estrutura de política para ampliar a atenção baseada em equipe em toda a Região das Américas, garantindo acesso equitativo a serviços custo-efetivos de alta qualidade para prevenção e cuidado de doenças cardiovasculares.

**Palavras-chave** Doenças cardiovasculares; atenção primária à saúde; hipertensão.

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