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Heartbeat of Hope: Advancing Cardiovascular Care Across Latin America

Delivering equitable and impactful solutions that sustainably improve cardiovascular patient outcomes

September 2024

Contents

About this publication:

This paper was co-sponsored by Novartis AG. The views expressed herein were independently created by Deloitte and are based on external research and interviews conducted with key healthcare system stakeholders.

The official language of this paper is English. Any translation of the content into another language is provided for informational purposes only. In the event of a discrepancy between any of the translated languages and the English version, the English version shall prevail as the authoritative source.

Introduction

In 2022 Deloitte published the paper "Take Heart and Stop the Silent Killer: Prevent death from Atherosclerotic Cardiovascular Disease (ASCVD)", bringing to light the significant health challenges posed by Cardiovascular Disease (CVD) in Latin America (LATAM). Despite being the leading cause of death in the region, there was not enough attention given to addressing secondary prevention, quality of care and long-term disease management.

In 2021 it was estimated that there are **48 million people living with a heart and circulatory disease in Latin America**[1] and globally CVD was responsible for one in three deaths, equating to an estimated **20.5 million fatalities**. This averages to **56,000 deaths each day or one death every 1.5 seconds**[2], underscoring the **urgent need for action against what is arguably the world's most significant silent killer.**

The initial paper specifically outlined the situation in Mexico, Colombia, Brazil, Chile and Argentina, and also shared a regional perspective on the key healthcare themes identified through the research. For each country it focused on the setup of the healthcare systems, the causes of CVD, the treatments available and the challenges impacting positive patient outcomes. Additionally, it examined solutions from other disease areas that could be replicated to address CVD and also outlined further recommendations for medium- and long-term improvements in CVD care.

Purpose of this paper

This second paper serves as a follow up, reviewing the current situation regarding CVD in the same five countries, evaluating progress and ongoing challenges, while also detailing two specific factors for CVD care: health equity and women's equitable healthcare. Each country chapter then concludes with a five-year vision of the most critical challenges to prioritize and proposing actions to address them.

While each country has its unique context, there are shared challenges across the region, and country specific successes that should be considered for scaling across the region. Ultimately, the purpose of this paper is to continue to create an opportunity for stakeholders to come together to drive impactful change that will benefit the patient, the carer, the healthcare system and the overall socio-economic potential of the countries and wider LATAM region.

Regional Overview

Non-communicable diseases, particularly CVD, are the primary drivers of reduced life expectancy in LATAM, stemming from lifestyle changes, disparities in access to healthy living conditions and quality of medical care. More specifically, the key barriers across the LATAM region, constraining improved CVD patient outcomes are:

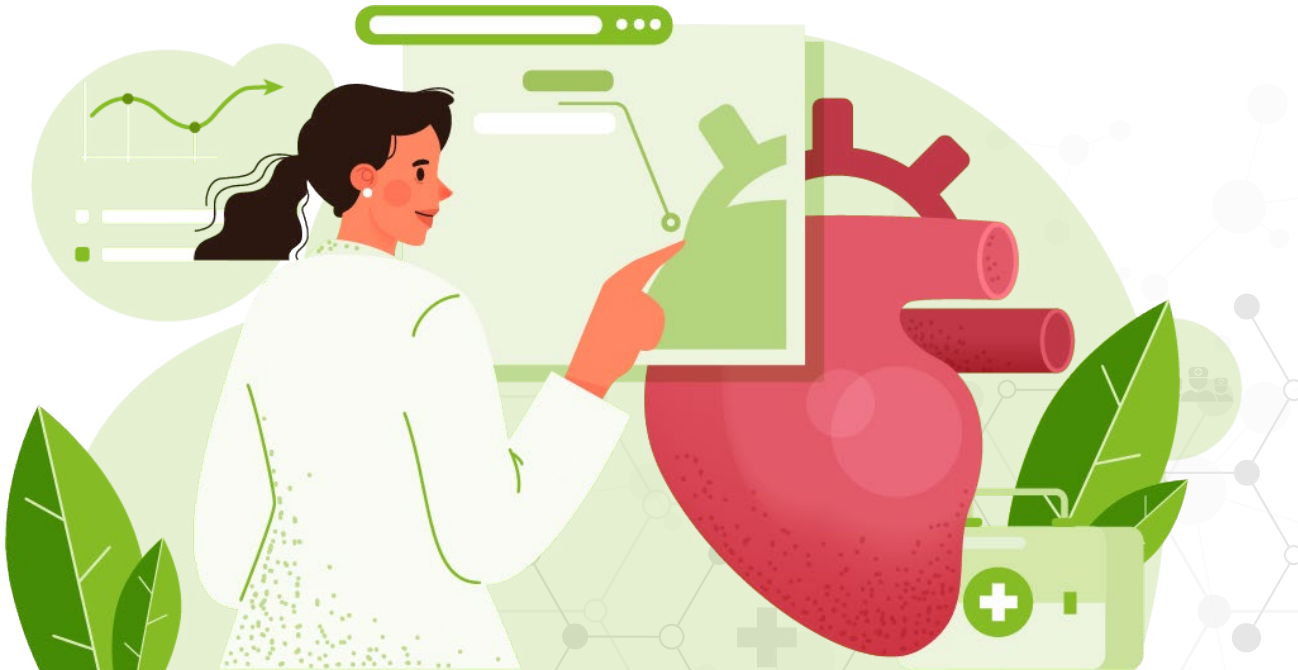
Low level of awareness among the general population and lack of communication from physicians about the seriousness of untreated CVD and ASCVD, and associated risk factors, such as diabetes, hypertension, obesity, and smoking

Lack of information and insufficient importance placed on managing diagnosed high risk levels of LDL and other related risk factors

Unaffordability and **inconvenience** of proactive health check ups

Unequal access to effective treatment and care following CVD risk symptoms diagnosis

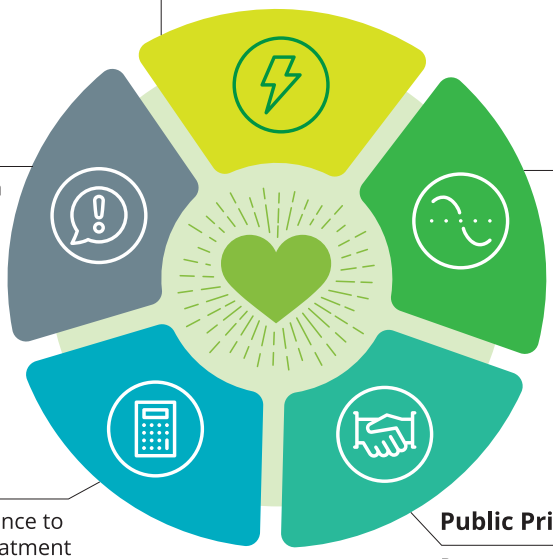
Limited research into the treatment of women with CVD, including the adverse impacts on pregnancy relating to the increased risk of CVD in mothers and their babies. The women at risk also extend to both the younger and older populations where, in Chile[3] for example, the root cause is lack of awareness of the severity of CVD and therefore inaction in effectively diagnosing and treating the risk factors.



The initial paper in 2022, emphasized the need for solutions to address key areas: implementing treatment guidelines consistently, increasing awareness of CVD risk factors across all communities (especially for secondary prevention), supporting treatment adherence for patients & caregivers, and enhancing interoperable data collection on CVD prevalence and challenges throughout the patient journey. The following illustration summarizes the outlined action themes across the region.

Measure

Impact of CVD in each country
1. Mortality (effectiveness)
2. CVD hospital stay (efficiency)
3. Time to see doctor (responsiveness)
4. Cost of care (equity)
5. Treatment rate (guideliness)



Awareness

Public awareness campaign for primary and secondary prevention of CVD

Equity

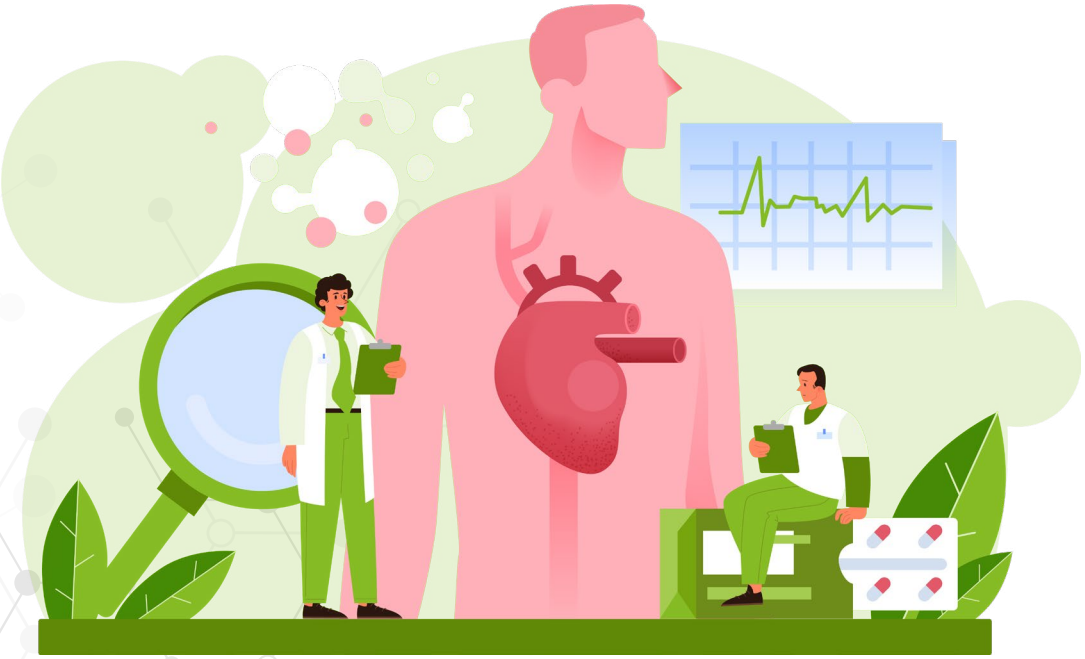
Recognise and target specific groups (e.g. women) to ensure more equal treatment

Adherence

Incentivise adherence to guidelines and treatment

Public Private Relations

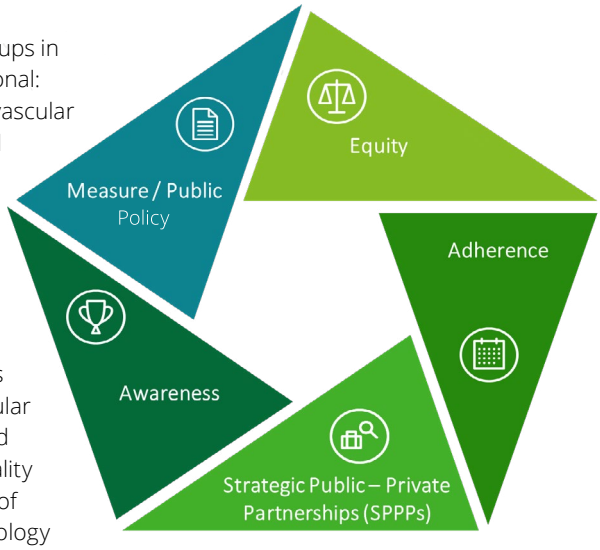
Promote public private partnerships for CVD health (e.g. employers role in CVD)



Leveraging success in one country for another and potentially scaling across the region

In the past 2 years, there have been significant and real achievements in the five countries we studied, showcasing the power of determination and collaboration. These milestones are more than individual country successes; they can be leveraged as blueprints for driving regional transformation for reducing CVD prevalence, improving secondary prevention and improving patient outcomes. Here is a selection of the key achievements:

Measure / Public Policy: Brazil formed two new parliamentary groups in 2023 with the objective of combating the challenges of CVD: the national: 'Combat Cardiovascular Diseases' and the regional 'Brain and Cardiovascular Diseases' group. These groups are committed to finding effective and viable solutions in the fight against brain/cardiovascular diseases.



Equity: In Argentina, the Argentine Society of Cardiology (Sociedad Argentina de Cardiología - SAC) is promoting a proposal to designate a National Awareness of Cardiovascular Disease Day for women – this proposal is designed to enhance public understanding of cardiovascular disease (CVD), focusing on prevention and the management of related risk factors. This is intended to improve both the lifespan and the quality of life for women; which will benefit the society, given the critical role of women in managing the family needs. The Argentine Society of Cardiology resubmitted this proposal to the Argentine National Senate in April 2024 for its review.

Adherence: Mexico's Coalición por el Corazón set up in 2023 is an initiative that seeks to promote cardiovascular health and improve adherence to treatment and overall quality of life through the collaboration between consumer goods industry, academia, technology, scientific organisations, and patient associations. The work of this alliance is divided among four working groups focusing on different topics: social awareness, data, education, and public policy. Moreover, efforts from both the public and private sectors are being combined to drive a progressive change in the health and behavior of the Mexican population and reduce deaths from CVD.

Strategic Public Private Partnerships: In **Colombia** Athero is a public-private alliance that has been active for the past two years. This alliance aims to control and reduce CVD by collaborating with other stakeholders, such as the Ministerio de Ciencia, Ministerio de Tecnologias de la Información, Connect Bogotá, American Heart Association, and Novartis, among others. The primary objective of the partnership is to co-create solutions based on 3 pillars, namely 'Implementation Science', 'Open Innovation' and 'Population Health'. Similarly, **Argentina** has formed a public-private alliance (e.g., in the province of Catamarca) aimed at preventing cardiovascular diseases through collaborative initiatives designed to sustainably improve the cardiovascular health of the population.

Awareness: Chile's "Conoce tus números" is one of the latest campaigns made by the Society and the Chilean Foundation of Cardiology and Cardiovascular Surgery to contribute to the prevention of cardiovascular diseases. It emphasizes the importance of knowing your health status to seek timely care, having regular check-ups, and taking action if health irregularities are detected. Despite the effort of this campaign, there was low visibility and reach of the campaign, highlighting the need for greater exposure to maximise its efficacy. Chile has also implemented the Labeling Law, which requires companies to place stamps on food products to warn consumers if the product contains an excess amount of sugar, or a high level of calories. While not directly targeting primary or secondary prevention of CVD, it significantly contributes to broader health awareness and promotes informed healthier choices.

Overview of CVD outcomes in 2020 - 2022 across Mexico, Brazil, Colombia, Chile & Argentina

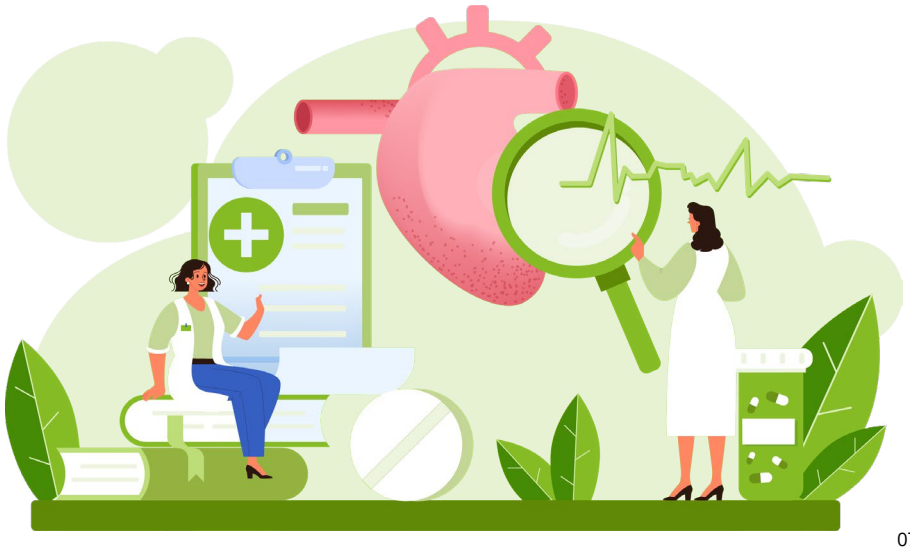
Cardiovascular disease (CVD) mortality rates in Latin America and the Caribbean (LATAM) have shown mixed trends from 2020 to 2022, with the impact of the COVID-19 pandemic playing a significant role. Prior to the pandemic, many LATAM countries were making progress in reducing CVD mortality due to improved healthcare access and public health initiatives. However, the onset of COVID-19 disrupted this progress.

The pandemic led to increased CVD mortality rates in LATAM, similar to global trends. The disruption in healthcare services, patient hesitancy to seek care, and the increased burden of acute and chronic CVD conditions among those infected with COVID-19 contributed to the setback in the fight against cardiovascular diseases.

Overall, while the pandemic has hindered progress, continued efforts, and renewed focus on cardiovascular health in the region are crucial for reversing the negative trends observed during these years.

Country	Total mortality due to CVD		Access to Health care		Number of patients discharged from hospitals after being treated for CVD	
	Men	Women	Men	Women	Men	Women
Mexico	126,983[4] (2022)	113,197[4] (2022)	44,171,954[4] (2020)	48,410,858[4] (2020)	69,942[5] (2022)	66,671[5] (2022)
Brazil	210,181[6] (2022)	189,946[6] (2022)	Private (2022): 23,572,299[7] Public (2022): 98,532,431[8]	Private (2022): 26,551,522[7] Public (2022): 104,545,325[8]	Public (2022): 282,87613[9]	
Colombia	28,509[10] (2021)	25,866[10] (2021)	51,422,914[10] (2022)		*Not publicly available*	*Not publicly available*
Chile	14,69211 (2020)	14,343[11] (2020)	19,960,889[12] (2023)*		16,165[13] (2022)	10,025[13] (2022)
Argentina	53,921[14] (2022)	56,137[14] (2022)	19,921,618[15] (2022)*		17,041[16] (2019)	14,999[16] (2019)

* considering the numbers of Cobertura Pública Exclusiva



Case for regional scaling of working solutions: Strategic Public Private Partnerships

Public-Private Partnerships (PPP) like Colombia's Athero are partnerships in healthcare that aim to tackle significant population health challenges. To be impactful they require a systemic and holistic approach, committed leadership, and operation at a scale that enhances both the cost-effectiveness, resilience, and efficiency of health systems. This approach is crucial to improve equitable access to health services, sustainably strengthening quality of care, and making the health care providers more responsive to societal needs. In addition, the approach can be replicated across other disease areas and adapted across the LATAM region for a wider impact for patients beyond those with CVD.

However, PPPs are only effective when they are integrated within the overall ecosystem. Without integration, PPPs risk remaining 'pilots' and not achieving their intended scale. The report from the Health Systems Innovation Lab at Harvard University introduces "Strategic PPPs" as a solution.[20] These partnerships are designed for (large)-scale, targeted initiatives to improve health outcomes and access to care, particularly for those most in need. Strategic PPPs involve a shared vision and collaborative approach among all stakeholders, emphasizing trust, integrity, and continuous improvement for tackling cardiovascular disease effectively.

The Health Systems Innovation Lab at Harvard University, Strategic PPPs suggests a 10-step process to shape the design, implementation and scale-up in health systems of PPPs:

01. **Ensure engagement of high-level leadership:** High-level support and leadership is required across both public and private partners to help agile decision making and inspire confidence.
02. **Define a shared problem:** All partners should jointly define and clearly articulate a compelling problem
03. **Agree on the shared value to be achieved:** Through collaborative and inclusive discussions, shape the proposed healthcare solution and agree on how it enables value creation for all key ecosystem stakeholders.
04. **Define the scope of the solution:** Partners co-define and co-develop the scope of the solution, reducing complexity and aligning with the health system.
05. **Design the partnership to deliver results at scale:** Ensure optimal configuration for inclusive engagement and shared decision-making, including ways to resolve disputes to enable SPPPs to deliver at scale.
06. **Build trust and transparency:** Trust from transparency is a critical component alongside openness and mutual respect.
07. **Balance opportunity with risk:** Explore mechanisms to link risk with performance to achieve desired results.
08. **Establish the financing model:** Clearly articulate how the SPPP is funded.
09. **Define outcomes:** Establish reliable measurement systems and draw actionable insights from the data regularly.
10. **Adopt an agile management approach:** Enable each partner to function with flexibility and to rapidly adapt to contextual changes.

Colombia's Athero Public-Private Partnership is a good example of how these 10-steps have become a reality, and thus serves as a good example for other SPPPs.

The Athero alliance was established in response to the significant impact that cardiovascular diseases (CVD) have on Colombia's public health, with CVD accounting for 29% of all deaths. Moreover, recent studies have shown that 60% of individuals who recover from COVID-19 experience some long-term health effects suggesting a global increase in cardiovascular disease rates by 45.1%.[18]

This initiative, launched at the end of 2020, is a collaboration between several organizations, including the Ministry of Science, Technology and Innovation; the Ministry of Information and Communications Technologies; INNPULSA; the Colombian Association of Internal Medicine; the American Heart Association; the Colombian Society of Cardiology; CONNECT Bogota; Novartis; and the iEX HUB of El Bosque University.

One of Athero's success has been in revolutionising cholesterol testing by introducing a clear, unified presentation of results, enabling primary care practitioners (PCPs) to identify cardiovascular risks early and tailor treatments accordingly.

Developed in collaboration with ACMI and SCC, and deployed by Synlab, a leading lab network covering 80% of Colombia, this new protocol simplifies and scales up cardiovascular risk assessment. It can influence the medical decisions of 125,000 PCPs, potentially reaching 3 million patients and handling over 12 million lipid panels annually. With its adoption by 20% of PCPs within six months, this initiative promises significant improvements in Colombia's cardiovascular health, aiming to reduce disease burden and create a lasting healthcare legacy.

In summary, establishing strategic public-private partnerships within the healthcare ecosystem unlocks the potential to share costs, harness diverse expertise, repurpose solutions efficiently, and scale for broader impact. This collaborative model also boosts productivity, benefits patients, and healthcare providers, and profoundly impacts society as a whole. It is not easy to catalogue all PPPs in the region as there are many in diverse stages of maturity. As we explore the progress in each country, PPPs and the ten-step approach underscore the ongoing opportunities for all countries to unite stakeholders and catalyze significant improvements in CVD secondary prevention care.

Mexico

The current situation

According to a report published by the National Institute of Statistics and Geography, heart diseases were the cause of 200,535 deaths in Mexico in 2022 (the number of deaths due to cardiac conditions in 2022 exceeded projections by 38%), making it the main cause of mortality in the country.[2] The number of deaths per 100,000 inhabitants of Mexico increased at an average annual rate of 5.3% between 2013 and 2022, and at an annual rate of 6.9% between 2018 and 2022. Although the rate fell between 2020 and 2022, it remains high and a concern for the public in Mexico.[1]

About 75 percent of cardiovascular deaths occur among individuals aged 65 or older; but even among younger age groups (35-44, 45-54 and 55-64), CVD is either the second or third highest cause of deaths independent of gender. In 2022, 53% of those dying from CVD were men and 47% were women; and deaths specifically from ASCVD were slightly higher among women than among men.[1]

Significantly, death rates from CVD vary between states. In 2022, Veracruz had the highest rate (196.5 deaths per 100,000 of the population) and Quintana Roo had the lowest (74 per 100,000).[2]

Number of patients discharged from hospitals after being treated for CVD: 136,613 (2022)

It has been estimated that 80% of cardiovascular diseases can be prevented or controlled if people modified their behaviors to reduce or eliminate some of the risk factors. Modifiable risk behaviors include smoking and being overweight or obesity. Mexico has been ranked fifth in the world in terms of obesity. These behaviors can lead to conditions that increase the risk of heart disease, such as high blood pressure, high cholesterol, uncontrolled diabetes, and hypertension.[3]

Progress over the past year

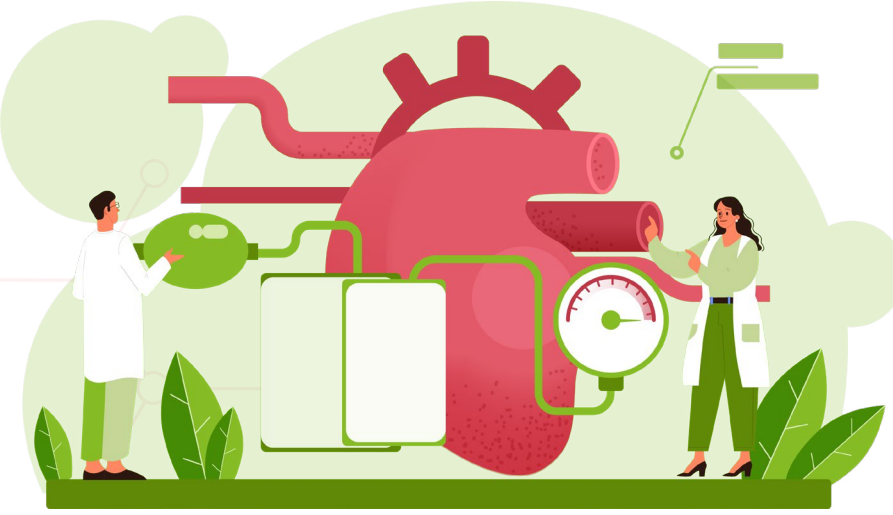
Short-term

The previous paper in 2022 suggested short-term measures to address ASCVD and other heart diseases including updating and implementing public policies, measuring the effectiveness of policies and, crucially, increasing public awareness of the risks from heart diseases and how to mitigate them.

In Mexico, the recent focus has been mostly directed towards updating and implementing public policies for managing CVD. According to the University of Guadalajara[4], policy implementation has been affected by a reduction in the government's health budget leading to limited progress. Nevertheless, Mexico has significantly advanced setting targets and measuring policy effectiveness within the country.

However, even this progress has been affected by a shortage of medicines in the country and increases in waiting times for patients in the public healthcare service.

Encouragingly, examples where progress has been achieved include the PrevenIMSS[5], a program of the Mexican Social Security Institute (a federal government agency), which was established with the objective of preventing chronic non-communicable diseases, including CVD, and detecting them at an early stage.



Additionally, the Coalición por el Corazón de México, an alliance of several organizations, is working to develop strategies and programs that promote prevention, early diagnosis and appropriate treatment of CVD.[6,7] It has set up four working groups, and plans to launch an awareness campaign in the coming year, targeting different age groups via a range of platforms and channels. The four working groups of the initiative are (i) social awareness, (ii) data, (iii) education, and (iv) public policy. The Coalición por el Corazón de México as a whole is based on six initiatives:

- Promote education and awareness of the importance of cardiovascular health in the Mexican population and raise awareness that CVD is one of the main causes of death in the country
- Promote the education and training of health professionals, through collaboration with academic institutions and the creation of ongoing education programs on CVD
- Promote research and the development of new technologies in the cardiovascular field, in collaboration with scientific/medical research organisations
- Collaborate with patient associations to promote participation by patients in decision-making related to their cardiovascular health
- Establish strategic alliances with consumer goods industry to promote healthy lifestyles and the adoption of behaviors that contribute to preventing of CVD
- Work with government authorities and health agencies to influence the formulation of public policies that promote the prevention and appropriate treatment of cardiovascular diseases.

These initiatives are key to driving the long-term improved patient outcomes, and with the right intereventions in place, preventable diseases like CVD are better managed.

Besides the strategies and prevention programs that the Coalición por el Corazón de México has established; they have been able to achieve certain objectives. For example, on the Day of the Heart, they managed to illuminate 19 main venues and/or monuments in Mexico City in red to create awareness about cardiovascular diseases.[8] Additionally, the Coalición por el Corazón recently completed a clinical study (ongoing work to be published), in which they used information from more than 10,000 people to visualize the impact of cardiovascular diseases in the country.

Medium to long-term

Progress towards longer-term goals has been modest. The reduction of the government's healthcare budget allocation since 2022 is a contributor. In 2023, Mexico approved its highest health care budget in history, but this figure was reduced by 5% compared to the budgets of previous years such as 2018, 2021, and 2022. This reduction led to cuts in various health care programs, making the 2023 budget the most significantly reduced since 2009.[9]

The federal budget for 2024 allocates only 2.8% of Mexico's GDP to health care, indicating low public investment compared to OECD countries, which allocated to health care spending around 9.2% of GDP in 2022.[10] The elimination of Seguro Popular (public health service) is a primary barrier to health care improvements in Mexico for 2024, impacting the uninsured population by decreasing access to health care.[9] After the Seguro Popular, INSABI which is another health care program, was implemented. Nonetheless, these two programs were discontinued, and a new program was implemented, IMSS Bienester but again here more resources need to be allocated to ensure equitable and seamless access to quality health services.

The Deloitte paper published in 2022 recommended the use of telemedicine as a means of improving healthcare for CVD. Telemedicine is already offered in Mexico's public health service, but the implementation has faced some resistance to using it among healthcare professionals, who lack familiarity with the technology, or who prefer face-to-face consultations.

Another recommendation was the development of an interoperable IT system for medical records, to ease the process of sharing medical data for healthcare professionals. However, issues around protection of patient data, systems integration and limited investment and resources have limited progress – issues which are of course topical in even very advanced health systems. Nevertheless, there have been proposals to implement Health Level 7 (HL7), a standard for the exchange of information between healthcare providers, which a group of private hospitals have already put into operation.

Health equity

Health equity ensures equal access to necessary health treatments for all individuals, regardless of gender, race, geography, or social status. It is about enabling everybody's basic human right to achieving their best state of physical and mental well-being.

According to the National Health and Nutrition Survey (ENSANUT), 48.8% of the population in Mexico do not have any form of social security. This implies that 48.8% of the population is not in the public records system and therefore cannot access public healthcare facilities and are subject to higher treatment costs. Of the 51.2% who do have social security and as a result public medical coverage, most are covered by the Mexican Social Security Institute IMSS (about 41% of the population) or the Institute of Security and Social Services for State Workers ISSSTE (about 8%).[11]

This situation underscores the critical need for expanded health coverage across the population, as its implications on the well-being of Mexican society are profound. Enhanced access to health services not only facilitates early detection and consistent follow- up of medical conditions, such as cardiovascular diseases (CVD), but also ensures timely treatment and thereby significantly improving health outcomes. Moreover, the absence of affiliation with institutions like IMSS, combined with the lack of access to private healthcare facilities, leaves individuals vulnerable to preventable or manageable conditions such as diabetes. This vulnerability can escalate into severe cardiac health issues, leading to heart disease. In the gravest scenarios, individuals may remain unaware of their heart conditions until it is too late for effective treatment or risk reduction, highlighting the dire consequences of inadequate healthcare access.

Furthermore, the ending of the Seguro Popular medical insurance system and its successor the INSABI institute for medical insurance (in 2023) has resulted in an increase in the number of people (particularly impoverished people) without or with limited access to healthcare services.[12,13,14]

Amongst those with access to medical services, only 52% are treated in the public health system: 48% choose treatment in a private medical facility and 36% choose consultation in a clinic adjacent to a pharmacy.

The total exceeds 100% as some individuals may receive treatment in more than one way. The ENSANUT survey found that when it comes to choosing a healthcare facility, the primary consideration for most people is accessibility (rather than quality of treatment).[11,15]

Access to primary health care is a problem for many people, especially those living in rural regions (about 30% of the population). There is a much higher concentration of hospitals in urban areas than in rural areas (up to 15 times more in 2021).[16] The unaffordable cost of healthcare, coupled with Mexico's limited healthcare coverage, restricts many from accessing timely medical treatments.

For instance, within the public sector, patients often face long wait-times, and these can be from a couple of weeks to months for an appointment and confirmatory tests.[17] This delay is not limited to cardiovascular disease (CVD) cases but extends to general medical evaluations across public health centers in Mexico. In emergency situations, the inability to secure prompt care often forces individuals to turn to private hospitals, driven by the urgent need for immediate treatment.

Social determinants of health inequalities – such as poverty, lack of education, poor nutrition, poor quality housing, obesity, and smoking – increase the risk of CVD risk factors. Addressing these root causes throughout the CVD patient journey is essential not only for prevention and management but also for lowering mortality rates associated with CVD. While the challenge remains significant, simple awareness of primary and secondary CVD risk factors, and the action for prevention (e.g. better nutrition) will already make a difference. In the case of building nutritional and activity awareness, it is especially beneficial given that in Mexico the prevalence of overweight adults is 38.3%, and of obesity is 36.9%, which are key risk factors contributing to ASCVD.[18] According to the scorecard published by the World Heart Federation in 2022 the total mortality due to CVD was 31.3% for male and 34.5 for women.[19]

Women's health

The main cause of death among women in Mexico is heart disease. According to data from the National Institute of Statistics and Geography (INEGI) six out of every ten women have either a cardiovascular disease or suffer from hypertension (which can lead to CVD) before the age of 55.[20]

According to IMSS, a woman dies from heart disease every five minutes in Mexico, but 80% of these deaths could be prevented.[21]

The 2021 ENSANUT survey also found that a large proportion of women aged 20 or over had conditions that increased the risk of CVD: obesity (40% of women), arterial hypertension (15.7%) and diabetes (11.6%). Among females aged 5 – 11 and 12 – 19, the prevalence of overweight or obesity increased between 2006 and 2022.[22]

For women in Mexico, there are particular problems with access to healthcare and education about the risk factors associated with CVD. Risks from diabetes, hypertension and obesity can be addressed from an early age. It is important to educate women about the risks of heart disease and to encourage them to adopt a healthy lifestyle from an early age.

In order to have access through the state system, a person must be working in an 'officially declared' job. Many women work under undeclared informal agreements or in the home and therefore do not have access to social security. According to the National Council for the Evaluation of Social Development Policy (CONEVAL), in 2022 49% of women lacked access to social security. The percentage of women without access to healthcare services (i.e., the right to receive medical services via an institution such as IMSS or ISSSTE) increased from 13% in 2016 to 37% in 2022, for reasons such as lack of formal employment and self-employment.[23] Additionally, the 2022 National Survey of Household Income and Expenditure (ENIGH), revealed that more than half of household healthcare spending is allocated specifically for women, accounting for 54%. This indicates women not only seek more healthcare services over their lifetime, but they also incur higher expenses for these services.[24]

However, the additional spend does not reflect in female-specific CVD outcomes. This is often due to a broader issue in women's healthcare, where late or misdiagnosis of diseases occurs because of limited education and research into women's health beyond sexual and reproductive health.

The 2021 ENSANUT survey found that among women who had received medical attention, only 42% chose public healthcare services and the others preferred private medical care. This suggests that public healthcare is failing to meet women's needs, driving them towards more expensive private care. The consequence of this shift includes delayed or incorrect diagnoses, increased healthcare costs, and a deterioration of health conditions.[22]

Due to these barriers, women, who frequently serve as caregivers instead of the primary income earners, might neglect their own health needs and silently endure worsening health conditions. This neglect of women's health not only affects them personally but also has a profound impact on families, given their multifaceted role that is critical to the functioning of the family and their contribution to society.

Goals for the next 5 years

The main areas to be addressed over the next five years in Mexico, given where we are today and the recommended actions to drive a short-medium term impact in CVD care, are summarized in the table below.

Key focus areas	Call for action
Improve health equity by understanding and addressing the social determinants of health that lead to CVD prevention and improved patient outcomes	**Initiatives focused on increasing awareness** • Increase investments on awareness campaigns and develop strategies that focus on prevention, and healthy behaviors to reduce CVD risk factors • Analyze pain points in health institutions and identify the key reasons behind health challenges (health access, socioeconomic factors, among others) • Mitigate socioeconomic disparities through stronger public health policies (e.g. access to health system) • Analyze and understand how IMSS Bienestar works, how they operate and the approach it has on cardiovascular diseases
Changing the mind-set around health issues that specifically affect women	**Promoting women's health and awareness** • Deepen analysis of the underlying factors of CVD and the effects of social determinants on women's well-being for primary and secondary prevention • Identify visible medical pathologies specific to women and explore ways to link them with CVD awareness • Pioneer new ways to connect the population with primary care doctors to receive treatment at that level, while also providing education and empowerment to the primary level doctors for proactive decision-making • Adapt medical treatments to ensure they are sustainable in the long-term, by enhancing education on how to treat women's CVD risk factors specifically – taking into consideration cultural and gender-based roles enforced by society • Enhance food & nutrition and lifestyle education to reduce women's risk of obesity • Help the education of caregivers, especially for secondary prevention • Several key stakeholders should be engaged collectively, including Government (Health Ministry and Education Ministry), Health Professionals, Consumer Goods Companies and Insurance Companies
Increase public knowledge about CVD	**Efforts on enhancing public awareness with active participation from patients' organizations for the prevention and management of CVD** • Precisely evaluate the key success factors of past awareness campaigns and measure the efficacy of current initiatives aimed at increasing awareness about CVD • Encourage CVD campaigns and incorporate health screenings during events of interest • Engage and explain the clinical and economic impact of CVD to key stakeholders, (government, heart associations, hospital groups, and medical institutions, among others) to coordinate CVD campaigns. The involvement of stakeholders is key, since it fosters a common goal and enables sharing of resources and knowledge. This, in turn, facilitates patient engagement and drives change

Key focus areas	Call for action
Improve the effectiveness of government policies	**Knowledge of CVD requirements into the public agenda** • Identify the needs of the government and key healthcare stakeholders and then prioritise topics for policy discussions • Identify public sector requirements related to CVD and collaborate with the government to develop practical solutions • Evaluate the effectiveness of policies and adjust them as needed • Collaborate with the government to develop feasible solutions for CVD in the country • Collaborate with stakeholders for defining a regulatory framework for treating CVD, from education at young age to treatment for CVD • Expand PPPs specifically for CVD to address shortfall in government funding

Brazil

The current situation

In Brazil, about 14 million people have some form of cardiovascular disease (CVD) and at least 400,000 deaths occur per year as a result, which corresponds to 30% of all deaths in the country being attributable to cardiovascular disease.

Compared to other South American countries, Brazil has the highest estimation of potentially productive years of life lost associated with CVD, totalling about 1.3 million in 2019. This is equivalent to a nominal productivity loss of US$ 4,250,681,870 in purchasing power parity. The estimation also indicated more CVD deaths among men than women, with a men-to-women ratio of costs per death of 1.44 and the costs of lost productivity for men were 2.4 higher than for women.[1]

Data from AIH/DataSUS (the Hospitals Admission System of the Ministry of Health, which covers 70- 75% of all hospital patients in the country) shows that the number of hospitalizations due to heart attack increased between 2008 and 2022 from a monthly average of 5,282 to 13,645 for men (an increase of 158%) and from 1,930 to 4,973 for women (an increase of 157%).[2]

According to the Assistance Map of the National Health Agency (agency that regulates the private system) between 2011 and 2022 there was a decrease of 20% in hospitalizations for cardiovascular diseases, from 539,590 to 427,441, although hospitalizations due to heart attacks remained similar (from 40,270 to 40,977). On the other hand, there was an increase in outpatient interventions such as clinical consultations with cardiologists, transthoracic Doppler echocardiography and cardiac exercise stress tests, respectively 106%, 37% and 48%.[3,4]

Furthermore, like the rest of the world, Brazil is preparing for an aging population. In 2010 about 10% of the population were over 60 years old, and this percentage is expected to increase to 30% in 2050. As CVD affects mainly older people, the potential threat from heart disease will inevitably increase over time. It is therefore important to pursue a clinical approach to cardiovascular disease prevention and combine this with campaigns aimed at encouraging 'healthy aging'.

Strategies for changing lifestyles should consist of more than just repeating recommendations for healthy behavior and instead potentially move towards enabling and rewarding sustained healthy outcomes.

From a political and social perspective, there have been some notable advances in the fight against CVD. There have been awareness campaigns in the media, in general, including a Red September campaign in 2023[5,6] promoting more extensive use of preventive examinations and periodic health checks to identify risk factors and signs of CVD at its early stages. In December 2023, The National Congress decreed, and the President sanctioned a law establishing Cardiovascular Disease Awareness Month, to be celebrated in September each year. This law, which has been under discussion since 2019, establishes thematic awareness weeks dedicated to ischemic heart disease, congenital heart disease, aortic diseases and heart valve diseases.[7]

In addition, a budget is being provided specifically for cardiovascular healthcare in the public sector. In 2022 for example, about R$24 million was allocated to the development of initiatives linked to the municipal governments' Cardiovascular Health Strategy.[8] In May 2023 a bill was approved providing an annual review of funding for services provided to the country's Unified Health System (SUS): an expected benefit is that services provided to SUS by philanthropic hospitals will be put on a more secure footing, thereby improving access to healthcare and the quality of treatment.[9]

Other developments include the Law 14.320 of 2022 established May 14th as the National Day of Awareness of Cardiovascular Diseases in Women. This initiative draws attention to cardiovascular health in women and highlights the importance of prevention and early diagnosis, as well as appropriate treatment for CVD.[10]

It should also be noted that the advancement of telehealth services in Brazil has been substantial in recent years. A survey by CETIC, the Regional Center for Studies on the Development of the Information Society, found that progress has been made in the use of telehealth services. For example, remote patient monitoring by nurses increased from 16% in 2019 to 29% in 2022, and by physicians from 9% to 23% in the same period. In addition, teleconsulting services in the period (contact between medical professionals to discuss cases) increased from 26% to 34% among nurses and from 26% to 45% among physicians.[11] These services enabling increased coverage and consultation even in remote regions of the country have led to improved healthcare also for CVD patients.

> "The lack of integration between the actors of the Brazilian health system, such as hospitals and health operators, hinders the coordination of care and the efficient management of data. In addition, the public health system faces challenges in providing equitable access to services, especially for people on low incomes or in remote areas."
>
> - Member of the Superintendency of Teaching and Research at one of the most recognized hospital complexes in Brazil

Progress over the past year

The previous report in 2022 made a number of recommendations for the short-term and for the longer term.

Short-term

The paper suggested implementing measures to enhance awareness of Cardiovascular Disease (CVD) by educating the public in schools and medical centers, as well as through public health announcements on websites, social media, and television. Nonetheless, efforts to spread CVD awareness have been inconsistent, partly because of insufficient technology and health education resources in schools.

Moreover, despite strong intentions, the Red September campaign for CVD awareness struggled to capture attention, overshadowed by other significant campaigns like Yellow September (suicide prevention) and Red December (HIV/AIDS prevention). Consequently, this overshadowing has led to a decrease in the priority and execution of effective strategies to prevent CVD.

Despite the challenges in preventing Cardiovascular Disease (CVD), there are promising opportunities for collaboration within the healthcare ecosystem, especially with pharmacies. In August 2023, the National Health Surveillance Agency (ANVISA) empowered pharmacies to conduct a broad range of clinical tests. This includes 47 types of tests that cover blood and secretion analyses, many of which are vital for detecting CVD risk factors, such as cholesterol, blood glucose levels, blood pressure, and lipids.[12,13] It's important to educate both pharmacies and patients about these available services to ensure they are utilized effectively for the early diagnosis and prevention of CVD as well as other diseases.

Medium to long-term

The first paper also recommended for the medium-term that a standardized care pathway for ASCVD should be introduced at a national level, and that health coaches and more extensive use of telemedicine were needed to improve the prevention of heart diseases.

However, there is not yet a standardized and specific care pathway for CVD in Brazil. In the public sector the Primary Health Care Secretariat launched an interactive platform 'Care Pathway in 2019, to which CVD risk factors such as diabetes and obesity were added in 2022; however, there is no specific care pathway for cholesterol.[14]

In the private sector, care pathway initiatives are fragmented with over 2,000 private hospitals and more than 600 other health organisations in the country. Similarly, initiatives using health coaches vary between private organisations, and most nurse navigators and health concierges focus on oncology or high-cost health plans. While these fragmented initiatives are a first step in the direction of improved patient care, unfortunately they have a limited impact.

Also, the National Health Agency, which regulates private plans, has recently encouraged the creation of care pathways to improve the quality of care. At one of the main business fairs in the health sector in the country in 2024, called Hospitalar, the Agency launched the "Methodological Manual for the Hospital Quality Monitoring Program", a paradigm shift on how the Agency positions itself. In partnership with other public and private stakeholders, the Manual includes best practices for monitoring and evaluating the performance of healthcare providers, with specific indicators for cardiovascular diseases, and an emphasis on acute coronary syndrome.[15]

An ongoing challenge facing Brazil is leveraging telemedicine to enhance healthcare delivery. Despite widespread smartphone ownership, internet access remains limited, particularly in poorer areas. Bridging this digital divide is crucial not only for healthcare improvement but also for boosting the country's overall productivity, whereby improving social determinants of health can drive better and sustained health outcomes.

Thus, there is a need for improved technology infrastructure and a system for interoperable and exchangeable patient health data for healthcare professionals. Open Health is one of several initiatives that promote digital transformation in healthcare. A key objective is to achieve interoperability of data systems to enable the exchange of patient data between health institutions and health professionals. Just as open banking revolutionized the financial services industry, with advanced technologies such as blockchain and artificial intelligence, transferable data should increase the effectiveness of health treatments and also improve medical research.[16]

However, the successful and scalable implementation of Open Health will require formal leadership, similar to that provided in financial services by FEBRABAN, the Brazilian Federation of Banks. It is essential to establish good governance, to ensure data security and privacy, as well as to promote trust between the stakeholders involved. When examining the longer-term, a key recommendation was the inclusion of a cholesterol indicator in the Previne Brazil program for primary health care, which supports the implementation of the government's Cardiovascular Health Strategy through financial incentives, such as guaranteeing the minimum salary of Community Health Agents. However, there has not been any announcement from the government about plans or funding to add new health indicators.

The 2022 Deloitte paper also recommended engagement with the "HEARTS in the Americas" initiative. This is an international initiative, and it is expected that by 2025 HEARTS will be the model for managing cardiovascular disease, including hypertension and diabetes, in primary healthcare throughout the Americas.[17]

> "The fragmented and unintegrated view prevents a comprehensive understanding... The healthcare system needs to consider integrating existing data, so that each location the patient passes through can have a complete view of their journey."
>
> - CEO of a Brazilian health technology innovation company

Additionally, several other initiatives since the 2022 report have been started in Brazil, namely:

Two new parliamentary groups established in 2023 were given the task of addressing the challenges of CVD, one at a national level and the other at regional levels.[18,19]

In December 2022, a new law was approved, giving healthcare practitioners the ability to offer virtual appointments and consultations – telemedicine – (with the patient's consent).[20]

At the beginning of 2023, Novartis Brazil announced a partnership with the National Council of Municipal Health Secretariats (CONASEMS) to strengthen primary health care in the Unified Health System (SUS) in the area of cardiovascular diseases.[21] As a first step, a dialogue between stakeholders including entrepreneurs, academics, healthcare professional, patient associations and NGOs, was arranged to establish a proposed list of actions and priorities for improving municipal health policies.

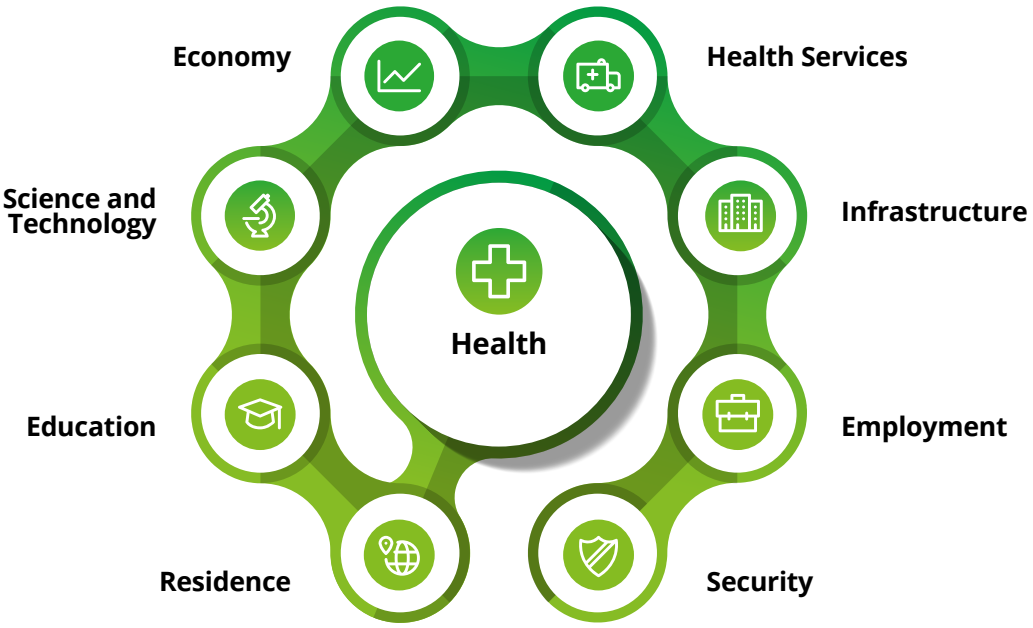
To improve quality of care in the private sector and provide an opportunity for private and public partnerships, in the end of 2023, the National Health Agency announced the opening of a Public Subsidy Collection with the purpose of collecting proposals to support on the reorganization for care pathways in private sector. For 6 months, the Agency will receive clinical protocols, therapeutic guidelines, and health indicators at different levels of care, to later support the workshops. Among the prioritized care pathways are cardiovascular diseases, especially stroke and coronary artery disease, and metabolic diseases, such as diabetes, obesity, and dyslipidemia.[22]

It is very encouraging to witness Brazil's commitment to prioritizing and enacting meaningful changes in recent years. However, to truly make a significant impact on reducing CVD rates, there is still much work to be done in addressing lifestyle changes, investing in health enabling technology and data infrastructures as well as improving access to and adherence to treatments.

Progress over the past year

Ultimately, healthy and sustainable lifestyles, early health issue identification, prioritization of mental and physical well-being, adoption of healthy habits, and access to treatment—from diagnosis through disease management to adherence and potential cure or enhanced quality of life—are influenced by various environmental factors. These social determinants of health (figure below) must effectively complement one another to yield long- term healthy outcomes.

Looking first at ***Health Services***, the Unified Health System (SUS) in Brazil is a universal healthcare system that provides free healthcare to all Brazilian citizens. While 75% of Brazilians depend solely on the Unified Health System (SUS), Brazil's health expenditure was 9.6% of its GDP and public spending constituted less than 40% of this total. This discrepancy has mainly affected the quality and accessibility of healthcare services and resources in rural areas and regions with high poverty, resulting in unequal access to healthcare across the country.



A major issue in healthcare, particularly in terms of ***infrastructure and technology,*** is the uneven distribution of doctors and clinics across the country, with the northern and northeastern regions having the fewest doctors per 1,000 people. The OpenCare 5G project, a collaborative effort involving government, universities, and the private sector, aims to address this by providing ultrasound examinations in remote areas. This is done using portable equipment that allows for on-site examinations, with results sent in real time to healthcare institutions for analysis. While this initiative holds promise for cardiovascular disease (CVD) care, it is currently underutilized in this area. Enhancing collaboration and expanding this service could significantly improve CVD examination accessibility.

Considering the relationship between health and ***employment***, being healthy is often a prerequisite for employment, while employment in turn provides access to private health insurance that supplements the strained Unified Health System (SUS). Since 2018, and particularly after the start of the Covid pandemic, there has been an increase in healthcare insurance coverage, with over 25% of the population now insured. Notably, around 70% of private healthcare insurance is provided by employers, highlighting the challenges of affordability and how one's job status influences the quality and promptness of healthcare access.

This notion is substantiated by statistics on the average life expectancy in Brazil which was 76.6 years in 2019, but with a difference of 8.5 years between people living in rich and in poor regions. For example, average life expectancy was 79.9 years in Santa Catarina (a southern state with a human development index (HDI) value of 0.792) and 71.4 years in Maranhão (a northeastern state with a HDI value of 0.676). Further investment in education, health and infrastructure is needed to increase life expectancy in poorer areas.[23]

> Access to a robust health data platform would allow Brazil to gain valuable insights to improve the quality of health services, implement more effective actions, and make evidence-based clinical decisions."
>
> - CEO of a Brazilian HealthTech in the field of Data Analytics

Women's health

In Brazil, 30% of heart attack victims are women, resulting in at least 200 female deaths per day and worryingly the rate of mortality among women aged 18-55 years is increasing.[24] In 2022, the Brazilian Cardiovascular Society reported that among women aged 65 or less, half of the deaths relating to CVD are associated with social inequality; and among women the number of deaths from cardiovascular diseases is greater than for all types of cancer combined.

Despite representing the majority of the Brazilian population (51.5%), women face a lack of representation in clinical trials and scientific research, leading to insufficient knowledge about links between women's physiology and heart disease. Some of the key links that have been identified but are not prioritized enough include:

- Before menopause, women have greater protection against heart disease from the high levels of estrogen in their body. Following menopause, estrogen levels fall and the risks of CVD increase. Gynecologists, in addition to testing for cancer, also need to proactively test women for hormonal variations to prevent cardiovascular diseases.
- Hypertension, high blood pressure and preeclampsia (a condition in pregnancy that causes high blood pressure) are common problems for women during pregnancy, and these are conditions that increase the risk of developing heart conditions.
- Statistics show that Brazilian women suffer more than men from depression. The Brazilian Women's Health Initiative found that symptoms of depression in women significantly increases the risk of death from cardiovascular disease.[25]
- Other important risk factors for CVD among women are low levels of physical activity, smoking and obesity. These risks are more prevalent among women in less privileged social classes.
- The prevalence of myocardial infarction in women is increasing. For example, the number of outpatient procedures in the public sector increased from over 16,000 in 2021 to over 18,000 in the first nine months of 2023.
- According to international studies on sex differences in stroke occurrence, women ages 35 years or younger were 44% more likely to have an ischemic stroke than their male counterparts[26], in addition to the burden and economic impact on the family, it highlights the need for gender- and age-specific rehabilitation protocols for CVD.
- Participation by women in the work force has been increasing, creating an overload of work in addition to time spent travelling to and from work and consequently high 'burnout' rates. There is 12% more excessive stress among women than men, and 73% more cases of burnout.[27]
- The symptoms of cardiovascular disease (CVD) in women are more generic. According to a study published in the journal Therapeutics and Clinical Risk Management[28], 62% of women did not have the chest pain commonly associated with heart attacks, compared to 36% of men. In addition, 72% of women took more than 90 minutes to call 911, while only 54% of men took that long.

It has been suggested that in many cases women, who tend to have a higher pain tolerance level than men, ignore signs of ill health and so do not have them checked out. Many women have not even been tested for cholesterol or high blood pressure. Much more focus on building awareness, testing for early diagnosis and better health management for diagnosed CVD risks for women is critical to lowering CVD prevalence.

> The Brazilian healthcare sector has the opportunity to carry out research and studies in the field of cholesterol, diabetes and hypertension, which could provide updated and supported information for the development of health policies regarding gender and age-specificities. Partnership with the pharmaceutical industry can help improve education and access to treatments for cardiovascular diseases, as long as it is carried out ethically and in accordance with guidelines."
>
> - Executive Director of a Brazilian Cardiovascular Disease Patients Association

Goals for the next 5 years

The main areas to be addressed over the next five years in Brazil, given where we are today and the recommended actions to drive a short-medium term impact in CVD care, are summarized in the table below.

Key focus areas	Call for action
Education in ASCVD secondary prevention	***Consistently invest in building CVD awareness*** • Identify collaboration with private and/or public stakeholders to: › Track CVD population: engage public schools, Health Units and health operators' patient programs to set clear action plan, indicators and analysis › Advertise on TV, website, social media, public transport in collaboration with Patient Associations, Municipality or HMO › Increase awareness of fast tests in pharmacies, such as cholesterol tests for asymptomatic CVD, and build information for effective population health management through a better understanding of test results and improved diagnosis, for example, determining how the level of LDL affects the patient's cardiovascular risk › Involve a group of healthcare operators to collectively explore possible solutions that overcome thebarriers to CVD investments and awareness, e.g. financial, tax and outcome-based recognition incentives ***Stakeholders:*** *Health Care operators/HMO; Patient association; Communication media; Municipalities and health organizations such as ANVISA and ANS; Pharmacists (health professional)*
More attention to cardiovascular disease in women	**Put woman at the center CVD care and self-care** • Identify stakeholders to collaborate with on women's CVD awareness campaigns, to prioritize women's health care and educate on primary and secondary prevention of CVD • Educate institutions that promote mental health on the link of depression to CVD mortality, and teaching women to equally prioritise their wellness as those of their family • Encourage clinical research to be done for and by women, to achieve better diagnoses, symptoms' awareness and effective treatments • Track, nationally and/or per municipal, the impact of the National Women's Cardiovascular Disease Awareness Day to assess progress and continue to highlight the importance of this specific health issue for women ***Stakeholders:*** *Physicians and health professionals; research institutions; pharmaceutical industry; patients associations; governmental and non-governmental organizations in favor of women's rights; parliamentary groups in favor of women' health*

Key focus areas	Call for action
Improve CVD care pathway at national level as well as overall adherence to CVD treatment	**Improve CVD prevention with health coaches** • Engage with the ANS Public Subsidy Collection on the reorganization for CVD care pathways in private sector where they: › Contribute with proposals about clinical protocols, therapeutic guidelines, and health indicators › Participate in the discussion and workshops › Contribute to writing manuals for priority care pathways and patient-centered assistance flows › Engage with 'mais médicos' public program, educating new physicians on ASCVD primary and secondary prevention to, identify private stakeholders to collaborate with and train health coaches to: • Collect monitoring data • Identify the expanse of the CVD diagnosed population and the socio-economic impact of CVD • Improve understanding of the results of the cholesterol test, including in the report of the LDL tests the reference information according to the profile, for example if the patient has suffered a heart attack or stroke, they should keep their LDL level below 50mg/dL • Invest in digital technology to contribute to interoperability and 'open health' discussion ***Stakeholders:*** *Patient association; Healthcare professionals / Medical societies; Government; Municipalities and National Health Agency (ANS - health operator agency);*
Data interoperability	**Implement a system for collecting, structuring, and analyzing CVD health data that addresses privacy concerns** • Through the development of a software or platform that allows the easy collection and organization of data from different sources, such as hospitals, clinics, laboratories, among others • By combining and analyzing this data in an integrated way, it would be possible to: › Obtain relevant information and quantify existing problems in the health area, enabling the improvement of the planning and management of the Brazilian health system, in addition to having more informed decision-making › Identify problems and adopt effective measures to improve the quality and efficiency of health services ***Stakeholders:*** *Government; Health institutions; Technology companies; Patient Association;*
Health Equity	**Equity in Brazilian health** • Promote awareness and training of health professionals on the importance of equity in diagnosis, treatment and managing adherence and how to tangibly apply it in their daily practice • Develop policies and incentive mechanisms for healthcare businesses and organizations that promote equity and prioritize equitable access to healthcare services. This can be done through the creation of equity goals and indicators, regular analysis of the data to identify disparities, and implementation of corrective actions to reduce these disparities ***Stakeholders:*** *Government; Health institutions; Patient Association; parliamentary groups;*

Colombia

The current situation

According to the Ministry of Health and Social Protection, cardiovascular disease was the leading cause of deaths in Colombia in 2022. Statistics from the National Administrative Department of Statistics (DANE) show that the number of deaths increased between 2021 and 2022, to over 70,000.[1,2] In 2021, 28% of these deaths were among individuals under the age of 70, representing a significant proportion of premature fatalities.[3]

The High Cost Account (CAC), a non-governmental organization of the General Social Security Health System of Colombia, has identified hypertension and diabetes mellitus as the two main conditions that lead to CVD. Other risk factors are high blood pressure, obesity that is commonly linked to a sedentary lifestyle, and smoking.

Between 2017 and 2021 there was an average annual increase of **20.3%** in deaths attributable to arterial hypertension, a major CVD risk factor, although there was a fall in the numbers by **19.6% between 2021 and 2022.** However, research suggests that as many as **25% of the population may suffer from hypertension.**[4]

CAC found that in 2021 almost 1.5 million people in Colombia had been diagnosed with diabetes, with **women accounting for about 60% of the diabetes cases**.[5]

A survey in 2015 found that **37.8% of people in the population were overweight** and a further 18.7% were considered obese.[6] In 2019, there were 8,187 deaths due to ischemic heart disease and 1,029 deaths due to hypertensive diseases, both caused by overweight and obesity.

CAC has suggested that it is possible to reduce mortality rates caused by arterial hypertension and diabetes mellitus by meeting objectives for regulating blood pressure and glycosylated hemoglobin.

Similar to other countries, key steps to reduce social factors contributing to cardiovascular disease include adopting a healthy lifestyle with a balanced diet, regular physical activity, quitting smoking, getting enough sleep, and managing blood pressure and blood sugar levels.

In the last few years since 2021, there have been several campaigns and initiatives in the fight against CVD, specifically promoting awareness and education on CVD risk factors.

- To commemorate World Heart Day 2023, the theme of the campaign by the Ministry of Health and Social Protection,[7] in collaboration with the World Heart Federation and the World Health Organization, was named "Take Care of Your Heart". This campaign, developed in collaboration with the Pan American Health Organization (PAHO), aimed to raise awareness among Colombians about the prevention of cardiovascular and cerebrovascular diseases by emphasizing the importance of controlling risk factors and early detection of symptoms for timely diagnosis and treatment
- Know Your Risk[8,9] is an application developed by the Ministry of Health and Social Protection. With this app, Colombians over 18 years old can identify their risk of developing cardiovascular and / or diabetes in the upcoming years, as well as the presence of obesity or overweight
- Athero[10], a public-private partnership that seeks to lower the risk of cardiovascular diseases by collaborating with relevant healthcare system actors, including the Colombian Society of Cardiology and Cardiovascular Surgery, the Colombian Association of Internal Medicine, the HUB iEX, Novartis Colombia, and other organizations was set up in 2020. The alliance's goal is to promote innovative and entrepreneurial solutions to have a positive impact on population health relating to CVD.

Progress over the past year

The previous paper in 2022 made various recommendations for improving awareness of ASCVD and other heart diseases.

Short-term

There were two main recommendations for the short-term. One was to add incentives[11] (including monetary) like scholarships, housing and transportation subsidies for students to train as doctors and doctors to take their practice to rural areas where there is a clear shortage of healthcare resources. However, although the government does offer financial incentives, these appear to be insufficient to attract healthcare providers to rural areas and improve equitable access to healthcare and therefore better CVD patient outcomes.

It is however worth mentioning that there are incentives given by the "Cuenta de Alto Costo" (a health system entity that manages and provides comparable data and information to accelerate improvements in the care of people with high-cost diseases) to institutions that demonstrate the best quality monitoring indicators and management for patients with several diseases, such as diabetes, hypertension, and chronic kidney disease. Another short-term recommendation was to accelerate diagnosis of ASCVD by implementing the Comprehensive Health Care Routes (RIAS). This initiative published technical and operational guidelines in 2022 for diagnosing and treating individuals with cardiovascular-cerebrovascular-metabolic disorders. It is important to highlight that RIAS has not been made official by the government through a resolution or decree; therefore, its scope and implementation are still under discussion.

In addition, awareness campaigns have been conducted by various organizations such as the Colombian League Against Infarction and Hypertension, which aim to educate and raise awareness among the population for the prevention of all cardiovascular diseases. The Colombian Heart Foundation also aims to generate strategies to promote the prevention of heart diseases. Furthermore, the Colombian Heart Foundation and the Cardiovascular Nutrition Group of the Colombian Society of Cardiology and Cardiovascular Surgery invite people to celebrate September as Heart Month and to involve their family, friends, and patients in this celebration.

These awareness campaigns in Colombia are making progress every year, involving different stakeholders (government, public organizations, medical associations). The objective is to continue with these efforts to create a community that will drive change in the mindset of the population towards a healthier lifestyle and to educate on how to detect any heart conditions at an early stage.

Medium to long-term

Recommendations for the medium to long-term included the implementation of policies by government for medical education about CVD and ASCVD specifically, extending the use of telemedicine and establishing public-private partnerships.

The implementation of policies has not shown a significant progress. Whilst there is acknowledgement by many in the health system that health policies in the country are outdated and have been in place for more than a decade, there is limited real activity and progress to address this situation. Focusing on reviewing and updating these policies will enhance and reinforce performance of the healthcare system and therefore needs to be prioritized, funded and resourced accordingly.

Data interoperability was highlighted as another fundamental pillar for building resilient healthcare systems and in that regards, the Interoperability of Electronic Medical Records (IHCE) reform is currently in the first phase and was projected to be functioning in multiple locations across the country by 2024.[12] This is beneficial for the medical field since it enables the consolidation of patient history and data transfer in a single platform, allowing for more effective and timely treatment of CVD patients regardless of where and when treatment is needed.

Continuing education for physicians, especially cardiologists, is another action to be addressed and is widespread today, with universities offering programs and the government providing scholarships for further study in cardiology.

Also, the government's Digital Health Strategy 2020-2022 promoted the use of digital technologies, including telemedicine,[13] to improve access to healthcare services and the quality of healthcare. Linked to this the government presented a health reform which is expected to cost $929 billion in 2024.[14,15] However, in 2021 only 4.27% of licensed healthcare providers were offering telemedicine services. Obstacles to the accelerated scaling of telemedicine include limited telecommunications infrastructure and a lack of robust governance that ensures protection of patients' personal data.

Regarding public-private partnerships, the Athero alliance,[10,16] has been in existence over two years and has been positively contributing to the prevention and management of cardiovascular risks. Athero has three action lines:

Territorial impact: Emphasizing the enhancement of education for healthcare professionals and promoters, the implementation of RIAS, and the delivery of healthcare solutions to various regions

Innovation in society and technology: ATHEROLAB is a project rooted in implementation science that has transformed physician behavior regarding cardiovascular risk evaluation

Raising awareness, aimed at improving education about cardiovascular disease among the general public

The main objective of the ATHERO alliance transcends beyond the three verticals, focusing on public policy in order to support prevention for cardiovascular patients, facilitate early detection, and ensure proper ongoing care.

It's noteworthy that the World Economic Forum, held in Davos-Klosters, Switzerland in January 2024, showcased Athero as an exemplary case study of public-private partnerships enhancing health systems, which is a low or zero cost initiative. This model, recognized for its profound impact, should be advocated to be expanded across the LATAM region and into other disease domains, underlining its potential as a blueprint for transformative healthcare collaborations globally.

Health equity

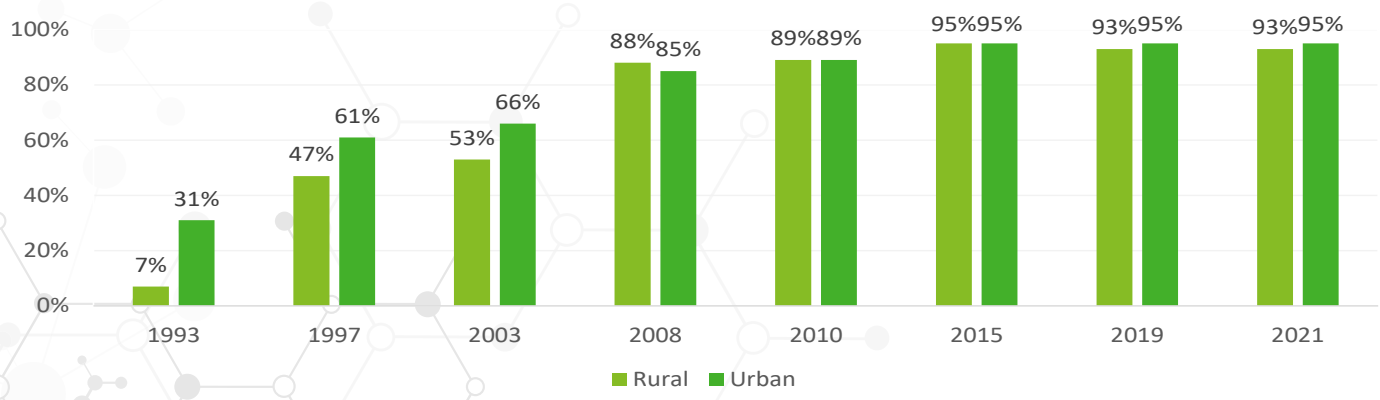
The Colombian healthcare system has been successfully expanding its universal healthcare coverage, which increased from 7% in rural areas and 31% in urban areas in 1993 to 93% and 95% respectively in 2021. More recently, access to healthcare in Colombia has improved dramatically over the past few decades.[17]

In 1997, 56% of people in need of treatment were unable to obtain it. This figure had fallen to 21% by 2021.[17] The government has also taken measures to strengthen the healthcare system, although it acknowledges that it has not so far sufficiently addressed the important issue of cardiovascular disease prevention and not reducing the related burden on the healthcare system.

That is not to say that there has been no progress with CVD prevention, and instead preventive healthcare visits have risen in both rural and urban settings. Nonetheless, disparities persist, linked to individuals' income levels and access to healthcare in rural or urban areas, impacting how proactively individuals manage their health to prevent CVD.

Two programs have contributed to improvements in health equity. One is the National Health Benefit Plan (PBS), which covers a wide range of medicines and treatments. The other is a program led by the *Ministerio de Salud* to encourage the use of (cheaper) generic drugs by doctors and patients.

Colombian Health Coverage by Area[17]



However, since October 2022 there has been a notable shortage of medicines across the country, due to delays in INVIMA approval processes and lack of supply, among others.[18,19] This shortage is causing delays in treatments and contributing to unequal access to healthcare. In response, the Ministry of Health has covered most high-cost drugs, which has allowed for the reduction or stabilization of drug prices. Nonetheless , the type of medicines one receives is determined by the location and area where the patient can access their healthcare service.

According to experts, there are three solutions to address the issue of equitably supplying medicines to the wider patient population:

01. Encouraging the use of generic medicines, which would result in economic savings and free up resources for innovative medicines when needed
02. Promoting local production of medicines
03. Expediting the National Institute of Drug and Food Surveillance (INVIMA) procedures to speed up the approval of treatments. Colombia takes up to four years for the implementation and approval of new medicines, which delays access for patients to new treatments or new technology that would treat them sooner and more effectively.

Overall, health inequity continues primarily because of socioeconomic factors, including poverty, limited education, and gender-based treatment disparities. By addressing these social determinants of health, we can improve equitable access to resources and opportunities needed for optimal health, which in turn will help prevent or reduce the risk of developing cardiovascular disease.

During the 2023 workshop "Addressing non-communicable chronic diseases (NDC) through action on social determinants of health and equity" organized by the Pan American Health Organization[20] (PAHO) in Colombia, representatives from the Colombian Ministry of Health and other ministries came together to develop a collaborative, intersectoral, and integrated approach to address the social determinants of non-communicable chronic diseases. It was discussed how a person with fewer resources or adverse life events throughout the course of their life has a higher likelihood of developing an NCD, like CVD than compared to a person with a better social position.

Accordingly significant emphasis was placed on investing in and enforcing policies aimed at improving social conditions nationally and locally. These policies and related measures are crucial for decreasing health disparities associated with non-communicable diseases and enhancing the quality of life for all citizens.

Women's health

According to DANE, the two main causes of deaths among women in Colombia in January 2023 were ischemic heart disease and cerebrovascular disease. The incidence of these diseases was higher among women (17.7% for ischemic heart disease and 7.7% for cerebrovascular disease) than among men (17.2% and 5.3% respectively). [21]

Cardiologists in Colombia have observed that clinical symptoms of CVD can differ between men and women. For instance, both can experience chest pain, but women tend to exhibit other symptoms, such as nausea. A specific checklist for identifying CVD in women should therefore be developed and requires further investigation.

A factor contributing to health inequity between men and women is lack of time and prioritisation for medical check-ups and treatment. Colombian women, in addition to holding down a job, still have their traditional role in the household, with all its time-consuming obligations. Many women do not have sufficient time for their own health.[22]

Despite the challenges faced by women, the average life expectancy increased from 78.2 years in 2010 to 80 years in 2021. However, the misconception of longer life equates to a healthier life needs to be urgently addressed. Instead, it is essential to nurture and support women in prioritizing their health and well- being, emphasizing the importance of a healthy lifestyle, diet, and regular physical activity to reduce the risk of cardiovascular disease (CVD).

There should be sustained advocacy for enhanced access to healthcare services for women and updated societal and traditional views that often limit women from focusing on their health due to their caregiving roles. Galvanizing healthcare provider, patient and social communities with an evolved mindset is crucial to ensure women are supported and able to prioritize and receive equitable quality care for their specific health needs.

Goals for the next 5 years

The main areas to be addressed over the next five years in Colombia, given where we are today and the recommended actions to drive a short-medium term impact in CVD care, are summarized in the table below.

Key focus areas	Call for action
Generate awareness	**Initiatives focused on increasing awareness** • Identify success factors of previous awareness campaigns and evaluate the effectiveness of current CVD awareness initiatives • Try to replicate cancer awareness campaigns, such as the ones for breast cancer, to increase awareness about broader women's CVD and other health challenges and correct systemic and social misconceptions • Promote campaigns for CVD and integrate health check-ups into associated events to encourage preventive measures
Improve the efficiency of public policies	**Update public policies & medical guidelines** • Evaluate the effectiveness of policies, and make necessary adjustments based on measurable results of policy implementation • Recognize the requirements related to CVD and encourage the revision of guidelines • Collaborate with stakeholders to obtain their input and feedback and create a collective effort that informs policies that address social determinants of CVD health
Optimise measures in place for secondary prevention	**Reduce healthcare and reduce disease prevalence** • Introduce initiatives and guidelines that focus on diagnosing and treating CVD and related health conditions at early stages • Encourage and fund research initiatives with the objective of developing strategies to improve treatment adherence for better health outcomes • Promote the importance of regular health check-ups and screenings
Tackle social determinants of CVD	**Address the social and economic factors that influence health outcomes** • Determine the primary underlying factors responsible for the health-related issues • Invest more in health education at an early stage, since obesity and overweight figures are increasing • Identify and develop public policies that aim to prevent or mitigate the impact of social determinants on people's health and well-being
Focus on women's health	**Change the viewpoint regarding diseases affecting women** • Identify the fundamental factors behind illnesses and the consequences of social determinants on the health of women • Carry out additional research with a specific focus on women, with regards to illnesses and medical interventions • Identify stakeholders who can collaborate in promoting awareness of the primary risks and symptoms associated with diseases affecting women, through various communication channels

Chile

The current situation

Cardiovascular diseases such as myocardial infarction and stroke are the main cause of deaths in Chile, accounting for almost a quarter of total deaths each year.[1] Furthermore, between 2020 and 2030 117,000 deaths are projected to occur from non-communicable diseases such as cardiovascular disease and diabetes.[2] Several studies have proved that major risk factors leading to CVD are excess body weight, obesity hypertension, and high levels of cholesterol. According to a National Health Survey in 2017, 39.8% of the population were overweight and a further 31.2% were obese, and the prevalence of obesity had increased by almost ten percentage points since a previous survey conducted in 2009-2010.[3]

> The same survey in 2016 found that 27.8% of the population had high levels of total cholesterol, which elevates the risk of both coronary heart disease and stroke; 12.3% of the Chilean population had diabetes, and 27.7% hypertension. Three out of every four people in Chile aged 65 or over are affected by hypertension.[4]

Looking at the morbidity rates from CVD, whilst it is generally equal for men and women, in 2020 more men died from ischemic heart diseases, but women accounted for slightly more deaths from cerebrovascular diseases. It has been recognized that there is greater risk for women after menopause due to falling levels of estrogen in the body.

According to the National Health Survey of 2017, sedentary lifestyle is more common in women than in men; 90.5% for women and 83.3% for men.[4] **Reducing the rate of overweight individuals by 6.7% can lead to a dramatic transformation in health outcomes from 2020 to 2030**.[2] Specifically, the number of cases and deaths associated with non-communicable diseases would significantly decrease, with cases falling to 25,000 and deaths to 5,000. This shows the profound impact that even modest reductions in overweight prevalence can have on public health over a decade.[2]

Addressing the risk factors unique to both women and men through gender-specific actions is imperative to catalyze significant change. These actions must be finely tuned to align with the deeply ingrained gender roles and cultural subtleties that currently hinder a shift in mindset towards adopting a healthier lifestyle. Without such targeted interventions, efforts to promote health and well-being risk falling short of their potential, leaving entrenched societal norms unchallenged and maintaining the status quo. It is only through this critical, nuanced approach that we can hope to overcome the barriers to a healthier lifestyle for everyone, irrespective of gender.

Additionally, there is a demand to improve coordination between primary and secondary care services for CVD. Addressing these issues could ensure equitable and effective healthcare delivery, enabling all individuals, regardless of their location, to benefit from comprehensive and integrated care for CVD.

The Chilean healthcare system is implementing a Comprehensive People-Centred Care Strategy (ECICEP) which promotes awareness, prevention and management of multi-morbidity, which is the existence of two or more health conditions at the same time, which is common in Chile and a burden on the healthcare system and subsequently the quality of care received.[5]

It is also crucial to recognize that the population of Chile is experiencing an aging trend. Given that the risks associated with heart disease escalate with age, there is an anticipated increase in both the demand for treatment and the associated healthcare expenditures over time. This demographic shift underscores the urgency of preparing the healthcare system to meet the growing needs of an aging population, highlighting the importance of planning and investment in healthcare services to manage the rising prevalence of heart disease effectively.

In this context, HEARTS has defined six technical pillars to sustainably strengthen healthcare systems to address growing population health challenges. The four pillars are 1) standardized treatment protocols and medications, 2) validated blood pressure devices and related regulations, 3) training and education, 4) standardisation and innovation in utilisation of data, 5) innovation in organization of care and 6) innovation in organisation of care and team-based care.[18] An example strategy being implemented is a standardized, population-based antihypertensive drug treatment protocol, ensuring the availability and affordability of high-quality antihypertensive medications.[6]

Applying the pillars when evaluating impact of proposed intervention solutions both across the patient pathway and the respective healthcare system (HCS) will help prioritise the most sustainable and impactful solutions for improving care and patient outcomes for high prevalence and preventable diseases like CVD.

Progress over the past year

In the first report of 2022, several recommendations were made for Chile.

Short-term

A recommendation for the short-term was that there should be campaigns to increase public awareness of CVD. In Chile, there are two months when campaigns related to CVD are conducted, one in August[7] (organized by the Chilean Society of Cardiology) and the other in October[8] (*Ponte la camiseta* organized by the Chilean Association of Cerebrovascular Disease).

These campaigns unite a diverse range of stakeholders—including the private sector, healthcare providers, government agencies, and non-governmental organizations—in a collaborative effort to promote awareness and concern regarding the risk factors associated with cardiovascular diseases (CVD), such as high cholesterol and obesity. The goal is to leverage the strengths and resources of each participating stakeholder to enhance public understanding of these health risks and encourage preventive measures.

Despite the efforts behind these campaigns, their impact on raising awareness about cardiovascular diseases (CVD) has not been optimal and this can be attributed to two main factors: insufficient funding for the campaigns and the challenge of reaching populations with limited access to media. As a result, a significant portion of the intended audience remains uninformed about the risks of CVD and how adopting a healthy lifestyle can mitigate these risks. Therefore highlighting a clear need for investment into resources that effectively disseminate health messages to these harder-to-reach communities, ensuring broader public awareness of CVD risks. Besides the need for investment, it is important that the campaigns are led by the Minister of Health to increase their reach and perceived value, given the authority of the campaign sponsor.

Medium - to long-term

The previous paper made recommendations about extending the use of telemedicine and for the development of an interoperable system that facilitated the secure transfer of patient data between health institutions.

The Chilean government passed a law (Law 21541) in 2023 setting out requirements for healthcare providers to offer telemedicine[9,10,11] services and ensuring patient privacy and data protection. This law advocated for regulatory adjustments to accommodate remote medical consultations; it is also worth noting that the use of telemedicine in the public sector remains quite limited. It is expected that in the future, telemedicine can be an effective tool for managing CVD, for example through remote monitoring and medication management, and more frequent monitoring and informed proactive interventions. Considerable progress has been made since the law's introduction, but challenges remain, such as limited digital infrastructure for equitable telemedicine access and the implementation of comprehensive regulations addressing patient privacy.

Beyond telemedicine and data protection, there is also a pressing need for the introduction of new technologies, medicines, medical instruments, and infrastructure upgrades in hospitals.
A key advantage of these new technologies is their potential for interoperability—the capacity to seamlessly share and exchange data and knowledge across different information systems. Despite the benefits, progress toward achieving interoperability in Chile has been slow, leading to delays across various sectors due to the fragmented and uncoordinated operation of the healthcare network.

The legislation to improve clinical record interoperability was enforced in May 2024. This indicates that steps are being taken to address these challenges and enhance the efficiency and effectiveness of healthcare delivery.

Health equity

Chile has most of its population insured, as of December 2023, according to the *Superintendencia* de Salud, 80.8% of Chile's population was insured by FONASA, 13.9% by ISAPRE, and 4.7% by the *Fuerzas Armadas* and other entities.[12]

However, although the aim should be to increase the number of beneficiaries of the health system, the social determinants of bad health should also be addressed to manage over-burdening the system with preventable diseases. The factors directly impacting the health of individuals include lifestyle, living conditions, air quality, and overall socio-economic status. People in lower socioeconomic classes are at a disadvantage: they do not have the same access to healthcare, and this translates into poorer health conditions and higher mortality rates.

Following an exercise by the Pan American Health Organization (PAHO) and the Ministry of Health in Chile[13], proposals were published with a focus on health equity and the social determinants of health. Since 2022, the Ministry of Health, together with PAHO/WHO, are working at local and state levels to reform the health system to create necessary conditions to promote a healthy lifestyle. No results have been seen yet, but one of the strategies that the government is working on is the "universalization of primary care". This targets primarily accessibility to healthcare for the wider population when they need it, regardless of location and socio-economic status.

Women's health

Chile is one of the countries in Latin America with the most health coverage for women, having 8,180,051 women subscribed to Fonasa[14], and the general level of health among women has improved over recent decades. According to the National Statistics Institute (INE), the average life expectancy for women in 2023 was 84.1 years, compared to 78.7 years for men.[15]

Even so, greater attention should be given to the risks of CVD for women. It is recognized that these risks increase after the menopause, when CVD becomes the main cause of death among women. Women have increased their participation in the workforce, but at the same time have retained their responsibilities and role within the family. As a result, they may have less time for taking care of their own health and regular medical checks.

It's alarmingly evident that a critical issue needing urgent attention is the widespread misconceptions among women themselves regarding the impact of cardiovascular disease (CVD) on their health and the shockingly high prevalence of CVD that is overlooked and untreated in women. An online study was conducted for women between the age of 20 to 70 years old. The study showed the perception of CVD as the main health problem was only amongst 6% of those interviewed, while the main two perception were cancer (39%) and diabetes (18%).[16] This cultural and gender- based misinformation not only underscores a significant gap in awareness and education but also highlights a disturbing reality where countless women are silently suffering from a preventable and treatable condition, putting their lives at unnecessary risk.

Some of the more prevalent misconceptions around CVD include:[17]

Young people do not have heart problems; most of the people that suffer heart attacks are people older than 65 years, but young people also have them, and according to data of the Ministry of Health, the heart attacks and CVD rates are incrementing in people younger than 45 years old

Women should be more aware or become aware of heart problems after the menopause; preventive measures should always be considered, and even though during premenopausal women tend to be "protected" there is still a risk

People with family history related to CVD are the only ones affected; it is a false idea, but for people that have a history it is important to be also checked since they may have a mayor risk factor, but also is important to a mention that both men and women have the same risk factors

If I am taking medication for cholesterol, I do no need to do diet; even though medication is being consumed, a healthy lifestyle should also be followed as the medication doesn't substitute a healthy diet

The Chilean Ministry of Health has created a National Plan for Women's Health to fill the gaps in healthcare for women. This plan aims to make quality healthcare services more accessible to women, lower maternal mortality rates, and tackle gender-based violence. Key goals include increasing prenatal care, promoting the use of family planning, and enhancing screening and treatment for breast and cervical cancer. Additionally, the plan encourages healthy living to prevent chronic diseases like diabetes and hypertension and should by association reduce cardiovascular disease (CVD) risks among women. However, more specific information on CVD, urging women to get regular check-ups, and raising awareness about early recognition of CVD risk factors will further benefit improved female CVD patient outcomes.

Goals for the next 5 years

The main areas to be addressed over the next five years in Chile, given where we are today and the recommended actions to drive a short-medium term impact in CVD care, are summarized in the table below.

Key focus areas	Call for action
Raise awareness of CVD and CVD risks	**Awareness campaigns and education** • Identify key success factors from other awareness campaigns (local and in other countries of the region) • Design and promote CVD campaigns targeting individuals based on gender and age groups. These campaigns should consider a collaborative approach from several stakeholders; including sports, the food industry, and other influential stakeholders. It is recommended that these campaigns are initiated by the government's health institutions to reenforce the authority behind the campaign messages
Address social determinants leading to better health	**Research and insights** • Identify the main root-causes of the problems that affect health • Reduce socioeconomical inequalities by increasing Increase investment in the educational and healthcare infrastructure across the entire country
Improve the integration of public policies, for both primary and secondary levels	**Collection and analysis of medical data** • Collaborate with different relevant stakeholders to acknowledge the problems and analyse the data that informs healthcare policy reform • Revise and update protocols and guidelines; focusing on enhancing the interoperability between first and second health service level
Regular medical checks	**Promote frequent visits to the doctor** • Conduct a campaign that promotes the general check-ups so that people can be diagnosed on time or can take preventive measures if a problem is detected. This would decrease the cost of treatments, reduce mortality levels and reduce risks • Increase the reach of the existing "Adult Preventive Medicine Examination" program
Leverage of technology to collect medical data	**Collection and analysis of medical data** • Leverage from technology to collect data from the patient and the disease to understand the impact of the disease • Share medical data between HCPs to improve the treatment process
More focus of research on women	**Change the misinformed perception of diseases in women** • Identify collaboration private and/or public stakeholders to target women via different communication channels to inform main risks of diseases and symptoms • Enhance awareness amidst women to attend and apply their medical exams as a preventive measure • Expand the coverage of the medical tests for women • Conduct more studies and research focused on diseases impacting and treatment customized for women • Share relevant medical data to substantiate the benefits of improving lifestyle and health management choices

Argentina

The current situation

Cardiovascular disease (CVD) is Argentina's top mortality cause, responsible for a third of all deaths in 2017 and the primary source of preventable and premature death across genders, 35% in men and 28% in women.[1] High cholesterol stands out as a key risk factor and research consistently links cholesterol reduction to lower atherosclerotic CVD risk, making it a major target in clinical guidelines. Furthermore, given that the risk of death from CVD increases with age, and the average age of the population in Argentina is expected to double by 2040[2], the urgency for early preventive measures cannot be overstated. Establishing healthy habits from a young age becomes critical, as does the anticipated rise in the need for CVD treatment.

Risk factors commonly associated with CVD in Argentina include obesity, smoking, high blood pressure,diabetes and cholesterol LDL. Considering the younger population, the Cardiology Magazine of Argentina has reported worrying data regarding the analysis of the population under 18 years of age and it was observed that 41% of children and adolescents between 5 and 17 years old are overweight, with 21% being overweight and 20% obese. In addition, in children from 0 to 5 years old, 14% are overweight and 4% obese. Early obesity resulting from poor diets and lifestyles, initiates fatty deposits in coronary arteries and the onset of atherosclerotic disease at a young age already.[3]

Now considering the elder population, among people aged 65 and over, the mortality rate from heart disease is higher for women than for men. One in three women in Argentina die from CVD, and to address the lack of awareness around preventing and managing CVD amongst women, a law was proposed in 2023 to make October 9th a National Day of Awareness of Cardiovascular Disease in Women. This was an initiative driven by the Argentine Society of Cardiology, similar to the initiative in Brazil which established May 14th as a National Day of Awareness of Cardiovascular Disease in Women in 2019.[4,5,6]

The Argentine Society of Cardiology, along with the Cardiovascular Federation of Argentina, is also developing the first cholesterol roadmap for the World Heart Federation. The design of this roadmap is focused on identifying barriers and providing possible solutions to reduce premature CVD mortality by 2030.[7,8]

Other CVD campaigns in the country include campaigns in September – the heart month and September 19 the day of cholesterol. In addition, in July 2023, the fourth edition of the Cardiovascular Prevention Consensus was published, which provides recommendations for the proactive management of CVD. More recently, in the July 2023 issue of its journal, the Argentine Society of Cardiology[9] highlighted the importance of prevention, regular health checks, and promoting a healthy lifestyle of physical exercise and a healthy diet.

Other examples of progress in CVD in the country over the last 2 years are the public-private agreements by the governments of Salta[10], Corrientes[11], Catamarca[12,13] and the City of Buenos Aires with Novartis. These agreements aim to collaborate on the development of initiatives in cardiovascular health to achieve significant improvements in the prevention, diagnosis, and treatment of these diseases.

Furthermore, the Cardiovascular Federation of Argentina has developed treatment guidelines that should further enable a consistent diagnosis and treatment process for CVD.

Progress over the past year

Short-term

The main recommendation for the short-term in the Deloitte paper published last year was to raise public awareness about CVD, and to develop protocols and guidelines for greater awareness. Campaigns to promote awareness have been implemented over the last year; an example of success was the campaign of Diabetes Day on 14 November 2023 which included measures to train healthcare teams in the treatment of diabetes, a condition that can lead to heart disease. Despite the success of the implemented campaigns over the last year, there is room for additional campaigns that promote awareness on CVD and morbidities.[14,15]

Leveraging the success of the Diabetes program presents an opportunity to unify efforts and introduce the narrative of how diabetes management contributes to CVD prevention strategies. This approach leads to the efficient allocation of healthcare funding and personnel resources, while also leveraging the focus on one disease to enhance understanding and treatment of another related and significant condition.

The Ministry of Health has also recently developed guidelines for healthcare professionals on prevention and treatments of CVD.[16] The guide aims to provide healthcare professionals with the necessary tools to prevent, diagnose, and properly treat cardiovascular risk factors. Additionally, the guideline covers both primary and secondary prevention and offers recommendations on various strategies, such as lipid profile screening and follow- up of people treated with medications. However, in the absence of effective monitoring it is unclear if the guidelines are being used consistently and what impact it is having for CVD patients. Essentially, an efficient system needs to be established to assess, based on suitable data collection, whether the guidelines are being implemented and to quantify their effects on patient outcomes and healthcare costs.

Medium- to long-term

The paper last year also made recommendations for introducing technology to enable the exchange of interoperable medical data between healthcare professionals and forming partnerships between public and private healthcare stakeholders to deliver innovative CVD healthcare solutions.

Public-private partnerships such as Novartis and the provinces have been slow to pick up, however there are examples of such an agreement in different provinces, namely the provinces of Salta[10], Corrientes[11], Catamarca[12, 13] and the City of Buenos Aires, where the primary goal is the public- private agreement of reciprocity which aims to design and foster initiatives that enhance cardiovascular health, prevention and health promotion.

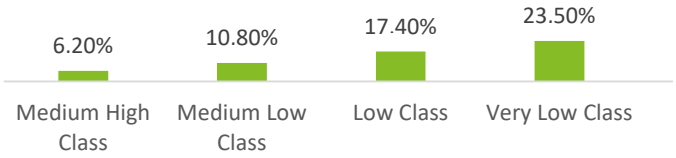
Understanding the barriers to forming more public-private healthcare partnerships and identifying specific solutions to overcome these challenges is crucial. By uniting key healthcare stakeholders, sharing expertise, distributing investment costs, and sharing commercial success where applicable, there is a significant opportunity to drive change for improved CVD care.

Health equity

A study analyzing how social determinants and health outcomes are related, published by the National University of Cordoba[17] in 2021, found that women are much more likely than men to have difficulty in accessing healthcare. Furthermore, access to healthcare is more difficult for people with a low level of education and from poorer sections of society. The study found that whereas about 13% of individuals from the middle and upper classes had to wait more than two months for treatment, the percentage among people from a poorer background was 27%. Also, figures from INDEC for the first half of 2021 showed that 42% of the population in Argentina were living below the poverty line.

To address the social determinants impacting accessibility to heathcare, in 2023 the Argentine Public Health Association hosted an inaugural international congress focusing on three main determinants of health equity: socioeconomic level, access to education, and other social factors such as gender, living conditions, and environmental factors such as air pollution and access to clean water. The congress highlighted the importance of not reducing health expenses and utilizing public policies as agents of change. This event as an effective platform for health professionals, policymakers, and experts to exchange ideas and strategies to promote health equity and reduce health gaps in Argentina, and align on how to use public policies as agents of change.

Percentage of Persons that have Health Problems According to Social Economic Class (2022)[18]



Argentina is currently implementing strategies to address social determinants by investing in education, enhancing primary healthcare, fostering social inclusion to counteract exclusion, and providing equal opportunities. Initiatives like "We Make the Future" and the "Universal Child Allowance," which offer financial support to impoverished families with children under 18, are steps towards this goal. Despite these efforts, ongoing investment and action are essential to sustainably tackle the social determinants of health and diminish health disparities along the CVD patient care pathway.

At an institutional level specifically, the decree 50/2019[19] established a new organizational structure for the Ministry of Health of the Nation, which reflects 3 priorities: access, quality, and equity of health. The decree in question was considered a historic milestone, as it marked the first time that an institutional focus was given to achieving health equity. This was achieved through the creation of the Health Equity Secretariat.[20] Subsequently, in September 2022, a further reorganization was carried out to further improve the effectiveness of the Secretariat in achieving its objectives.

Another notable aspect was the establishment of the Secretary of Health Equity in 2019, which was designed to pursue two objectives:

- Understand the design of policies to increase health equity and define a management and financing model
- Understand the design and development of the evaluation and monitoring of equitable access

In summary, medical care in Argentina demonstrates that social determinants can be a disadvantage for society, particularly for patients receiving treatment in the public sector. This is due to a significant percentage of these patients, around 42.5%[21], not receiving prescribed medication and potentially having restricted access to complementary diagnostic medical studies.

Finally, there is room to correct social inequalities due to gender, social inferiority, environmental disadvantage, among others, which is why it is considered necessary to establish efficient and humanized health policies, integrated health services, established Universal Coverage, as well as addressing education as a fundamental pillar to better CVD management.

Some initiatives that aim to promote health equity that would be good to collaborate with to promote CVD care are:

Sumar Program[22]: This is a public policy that promotes equitable and quality access to healthcare services for the population without formal health coverage. Between 2012 and 2015, coverage was expanded to include the entire population up to 64 years of age. In 2020, older people were incorporated, achieving universal coverage

Remediar Program[23]: This program contributes to guaranteeing the right to access and coverage of essential medicines through direct distribution to health centers, providing free access to medication

Women's health

Statistics show that one in three women die from cardiovascular disease and yet there is still limited understanding of the risks of cardiovascular disease in women, much less than the risks of some other conditions in women (notably breast cancer)[24]. Also, women are consistently under-represented in all areas of medical research, including laboratory studies, and this has a negative effect on the treatment of women for CVD.

There are certain biological risk factors that are unique to women, such as experiencing early menopause (before age 40 or 45), pregnancy complications, diabetes, premature birth or repeated abortions and having chronic inflammatory diseases like rheumatological disorders that are more prevalent in women (for example, rheumatoid arthritis, systemic lupus erythematosus, and other collagenopathies) or having previously had breast cancer.

The Argentine Society of Cardiology and the Argentine Cardiological Foundation have carried out actions to raise awareness, since the American Heart Society made a call to present equitable medical care, create awareness and review the epidemiology regarding CVD in women. This combined with if the Law to declare October 9 as National Women's Cardiovascular Disease Awareness Day[4,5], is approved, Argentina would continue its leadership in expanding women's rights for healthcare. However, there are still social hurdles, similar to those across LATAM that needs to be addressed for women to be able to prioritize their health and benefit from the women centric CVD care that will be developed and offered to them.

One the biggest social and systemic challenges that women face is the change of their traditional role of only or being the primary carer of children and the home. Increasingly, women are still expected to fulfill the traditional gender roles, while also taking up employment to support with financing the home and family needs. Persistent income inequality further adds to the challenges women face in the country. According to INDEC, 2020 report, women's average income was 24% lower than men's average income. This translates into unequal access to health care services, particularly for low-income women who often are deprioritized when it comes to healthcare spend. This creates a dangerous risk of burnout and developing health issues that cannot be treated effectively due to affordability and the strain of balancing home, family and professional responsibilities. Furthermore, late diagnosis or misdiagnosis worsens health conditions with misdiagnosis being a critical hurdle given limited training healthcare providers receive on diagnosing female specific CVD symptoms.

Goals for the next 5 years

The main areas to be addressed over the next five years in Argentina, given where we are today and the recommended actions to drive a short-medium term impact in CVD care, are summarized in the table below.

Key focus areas	Call for action
Create awareness about CVD	**Campaigns aimed at raising awareness** • Analyze the critical success factors of previous awareness campaigns and assess the effectiveness of current CVD awareness initiatives • Encourage CVD campaigns and incorporate health check-ups during related events
Enhance public policies on CVD and make it a top agenda topic for the government	**Enhance the effectiveness of public policies** • Evaluate the effectiveness of policies, and making necessary adjustments based on the results of evaluation • Engage with stakeholders to gather input and feedback • Develop evidence to the government about the actual situation of CVD and the importance of raising awareness, as well as the future risks of not attending this topic • Engage with key decision makers and stakeholders to gather support for CVD prevention • Collaborate with other organizations who share the same concern to create a stronger voice
IT and innovative medicine	**Collection and analysis of medical data** • Build partnerships with medical and technology industries to bring new products to the market • Government provides incentives to invest in new technology and medical treatments • Encourage collaboration between key stakeholders
Women's health	**Shift the view of illnesses in women** • Increase the amount of research conducted specifically on women, with regards to illnesses and therapies • Determine the underlying factors of illnesses and the impact of social determinants on women's health

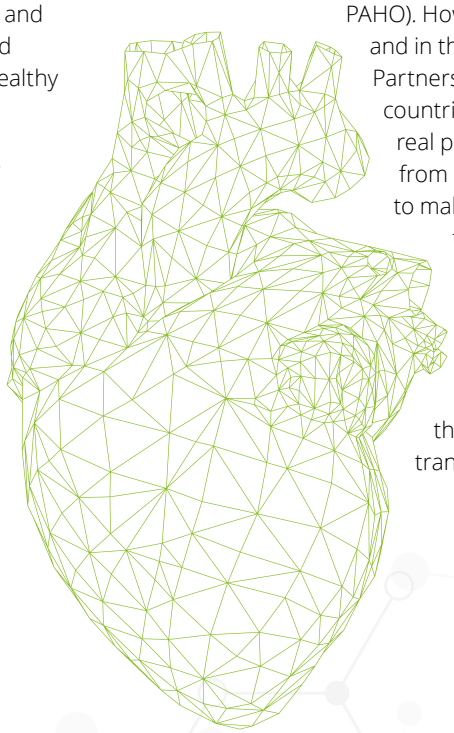
Conclusion

In the five countries analyzed in this paper, strides are notably being made towards enhancing awareness of cardiovascular diseases (CVD), their causes, and the improvement of prevention and treatment methods. However, the stark reality that CVD remains a leading cause of death, despite being largely preventable, underscores a critical need for intensified efforts across the region. Despite advances in promoting lifestyle changes to mitigate risk factors, prioritizing gender-specific healthcare needs, fortifying healthcare systems for an aging demographic, and fostering strategic partnerships within the healthcare ecosystem, the persistently high mortality and disease rates for a preventable condition are still shocking.

Mindset and beliefs in Latin America's cultural fabric positions women as the backbone of families, often leading them to prioritize the well-being of their loved ones over their own health. Despite significant advancements in women's roles, including increased workforce participation and educational attainment, the dual expectations of managing both professional responsibilities and domestic duties limit their opportunities for personal health care and self- care. Women require enhanced support, which encompasses developing research and treatments for cardiovascular disease (CVD) that are tailored specifically to women. Additionally, it's crucial to educate and empower women to prioritize their health and take proactive steps towards maintaining a healthy lifestyle.

Furthermore, addressing health equity's root causes is imperative, as an individual's health and well-being are profoundly influenced by their living conditions. This includes factors such as their physical environment, access to clean water and healthcare services, affordability of medical treatments, and socioeconomic status. Understanding and addressing these social determinants is key to improving health outcomes. Driving change also crucially depends on continuously investing in the healthcare infrastructure that's prepared for the future. This means embracing technology and data, supported by a robust regulatory framework that safeguards patient privacy while also enhancing treatment efficiency. Investments in healthcare, particularly in improving cardiovascular disease (CVD) care, should be evaluated not only for their direct benefits to patients but also for their broader impact on society. It is crucial to scale up successful CVD solutions, recruit more key stakeholders to extend the success and equally one should rigorously assess the impact of these investments to ensure they deliver value both to individual health outcomes and to the socio-economic well-being of communities.

In summary, common challenges across all five countries include government healthcare funding challenges, poor awareness of CVD risk factors (especially amongst women and in disadvantaged socio-economic groups) and competing for impactful initiatives with multiple other country priorities both for health (e.g. HIV, suicide prevention) and beyond (e.g. high inflation in Argentina, elections, etc). While our understanding of the drivers of CVD mortality and the need for primary and secondary prevention has increased, there is also increased clarity on **"what"** needs to be done – from guidelines (WHO) and broad-based action (e.g. PAHO). However the challenges remains "**how**" to execute and in that respect we see Strategic Private Public Partnerships such as Athero and others across all countries presenting a valuable opportunity to make real progress through engaging key stakeholders from all parts of the healthcare ecosystem system to make a difference. Through this paper, we aimed to substantiate the need for and inspire the cultivation of sustainable and determined ecosystem leadership across all five countries, to foster collective action aimed at achieving better CVD outcomes for all – including women, the disadvantaged, and the population at large – paving the way for transformative change.



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