Strategic Plan for Cardiovascular Health in Portugal – Portuguese Society of Cardiology (PESCP-SPC) – part II

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2025

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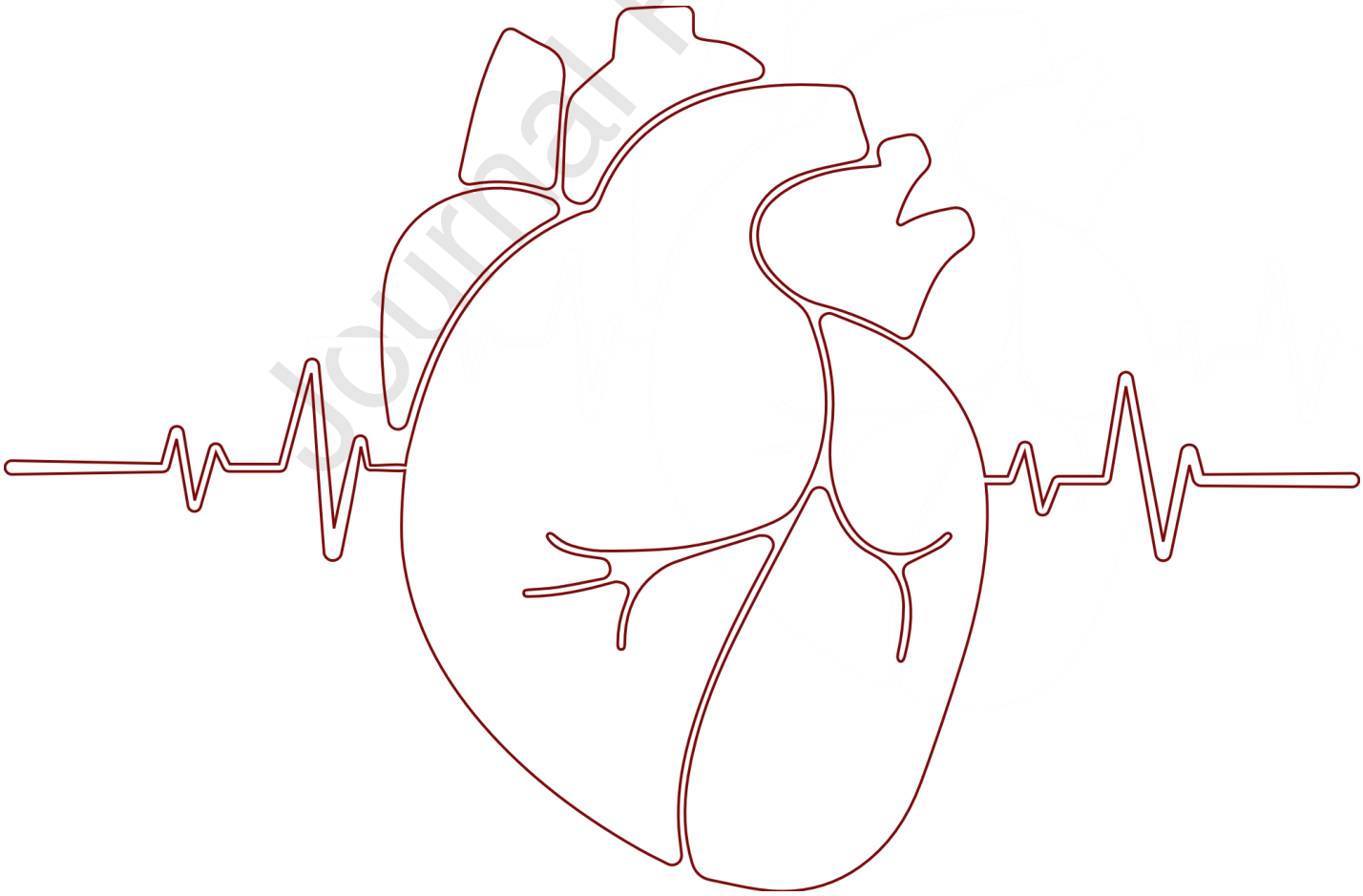

Strategic Plan for Cardiovascular Health in Portugal − Portuguese Society of Cardiology (PESCP-SPC) – part II

Plano Estratégico para a Saúde Cardiovascular em Portugal – Sociedade Portuguesa de Cardiologia (PESC-SPC) – parte II

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Resumo

O Plano Estratégico para a Saúde Cardiovascular em Portugal é um projeto da Sociedade Portuguesa de Cardiologia alinhado com o movimento promovido pela Sociedade Europeia de Cardiologia para a elaboração de um Plano Europeu para a Saúde Cardiovascular, intenção agora validada pelo Conselho da União Europeia. Depois de desenhar o plano conceptual, a Sociedade Portuguesa de Cardiologia avançou para a vertente operacional com a criação de Grupos de Trabalho compostos por peritos nas áreas prioritárias identificadas, que desenharam propostas de ações a desenvolver, tendo como matriz unificadora os pilares estratégicos da promoção da saúde, da prevenção primária e determinantes em saúde, do rastreio e diagnóstico precoce, da prevenção secundária e da reabilitação e promoção de qualidade de vida. Neste documento explana-se o resultado do trabalho desenvolvido e destacam-se as mensagens-chave.

Palavras-chave: Saúde Cardiovascular | Sociedade Portuguesa de Cardiologia | Plano Estratégico

Abstract

The Strategic Plan for Cardiovascular Health in Portugal is an initiative of the Portuguese Society of Cardiology, developed together with the European Society of Cardiology to create a European Cardiovascular Health Plan, an initiative which has now been endorsed by the Council of the European Union. Building upon its conceptual framework, the Portuguese Society of Cardiology moved to the executing–phase by establishing Working Groups composed of experts in priority areas. Guided by strategic pillars, these groups formulated action proposals encompassing health promotion, primary prevention and health determinants, screening and early diagnosis, secondary prevention, as well as rehabilitation and quality of life promotion. This document outlines the results of this work and highlights the key messages derived from it.

Keywords: Cardiovascular Health | Portuguese Society of Cardiology | Strategic Plan

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Introductory Note

Cardiovascular diseases (CVD) are a major public health issue and significantly impact health planning.[1] Since they are largely preventable,[2] a comprehensive, structured, and well-planned approach can lead to substantial improvements in population health outcomes. CVDs continue to be the leading cause of morbidity and mortality in Europe,[1,3,4] profoundly affecting the population's quality of life,[5] and placing a substantial burden on healthcare systems and economies.[6-9] Despite this, funding for the field — especially for basic and translational research — has declined.[10] In response, scientific organizations have mobilized, calling for a structured, continent-wide approach to CVD — similar to initiatives for other disease.

The European Society of Cardiology has emerged as one of the main drivers of this movement, advocating for the creation of a European Plan for Cardiovascular Health. For this to occur, policymakers must be involved, not only to endorse it, but also to guarantee its practical implementation. In December 2024, a historic milestone was reached in this process with the conclusions of the Council of the European Union, where all 27 Health Ministers unanimously approved a set of measures aimed at improving cardiovascular health in the European Union. These measures focus specifically on prevention, early detection, treatment, and rehabilitation. Additionally, the ministers agreed on the relevance of a European Plan for Cardiovascular Health.[11] The development of this pan-European plan will establish the overarching framework for tackling cardiovascular diseases. However, its success will depend on the implementation of national plans adapted to each country's specific context and culture, ensuring that the European Commission's directives are effectively incorporated into the national policies of each Member State.

The Portuguese Society of Cardiology (SPC), aligned with similar movements across Europe and guided by its mission, vision, and core values, has developed a Strategic Plan for Cardiovascular Health in Portugal, encapsulating its insights and strategic priorities.[12] Briefly, the plan is built on five strategic pillars:health promotion, primary cardiovascular prevention, screening and early diagnosis, secondary cardiovascular prevention, rehabilitation, and quality of life enhancement. It is grounded in key guiding

principles: access and equity, empowerment and health literacy, innovation, and transformation. Together, these pillars and principles provided the framework for structuring the project. Additionally, the proposals set forth here incorporate emerging areas such as digital health, cardiovascular health data, and the patient perspective.

After mapping the current landscape of cardiovascular health in Portugal—including its epidemiological profile, access to care, infrastructure, and economic impact—five priority intervention areas were identified. These areas focus on the most prevalent cardiovascular conditions in Portuguese society, warranting a targeted and specialized approach. The priority areas are:

1. Cardiovascular Risk
2. Heart Failure
3. Valvular Heart Disease
4. Sudden Arrhythmic Death and Atrial Fibrillation
5. Coronary Artery Disease

Methodology

The SPC is a scientific society with a collegial structure, encompassing two specialized associations — the Portuguese Association of Cardiovascular Intervention (APIC) and the Portuguese Association of Arrhythmology, Pacing, and Electrophysiology (APAPE) — along with fifteen study groups.

Five Working Groups were formed to address each Priority Area and bring together coordinators from APIC, APAPE, and various Study Groups, including those focused on Heart Failure, Cardiac Intensive Care, Cardiovascular Risk, Myocardial and Pericardial Diseases, Valvular Disease, Cardiac Surgery, CT, MRI & Nuclear Cardiology, Echocardiography, Exercise Physiology, and Cardiac Rehabilitation (Table 1).

Table 1: Composition of Working Groups

Priority Area	Working Groups	
Cardiovascular Risk	Rapporteur: SG CVR | SG CVR	SG EP & CR
Heart Failure	Rapporteur: SG HF | SG HF; SG MPD; SG ICC; SG CS	
Valvular Heart Disease	Rapporteur: SG VHD | SG VHD; SG Echo; SG CT&MRI&NC; SG CS; APIC	
Sudden Arrhythmic Death and Atrial Fibrillation	Rapporteur: APAPE | APAPE; SG MPD	
Coronary Artery Disease	Rapporteur: APIC | APIC; SG ICC; SG CS; SG CVR; SG TAC & RM & MN	

APIC: Portuguese Association of Cardiovascular Intervention; APAPE: Portuguese Association of Arrhythmology, Pacing, and Electrophysiology; SG CIC:Intensive Cardiac Care Study Group; SG CS:Cardiac Surgery Study Group; SG CT&MRI&NM - CT,& MRI, and Nuclear Cardiology Study Group; SG CVR:Cardiovascular Risk Study Group; SG Echo:Echocardiography Study Group; SG EP & CR (cross-sectional group):Exercise Physiology and Cardiac Rehabilitation Study Group; SG HF: Heart Failure Study Group; SG MPD:Study Group on Myocardial and Pericardial Diseases; SG VHD:Valvular Heart Disease Study Group.

Each Working Group developed a set of proposals, which were categorized into objectives, goals, and strategies and systematically arranged in Tables II–VI. These proposals are aligned with the five strategic pillars.

Objectives, Goals, and Strategies for Cardiovascular Health in Portugal

I – Primordial Prevention

Table 2 – Primordial Prevention

P0.Primordial Prevention *Empowerment and Health Literacy* *Access and Equity* *Innovation and Transformation*
P0.RC.Cardiovascular Risk
P0.RC.O. Objectives
P0.RC.O.1 Increase health literacy among the population, particularly awareness of CVR and its implications.
P0.RC.O.2 Reduce CVR in the population.
P0.RC.O.3 Improve the population's dietary habits by promoting the reduction of salt, sugar, processed foods, and alcohol consumption.
P0.RC.O.4 Increase physical activity and exercise while reducing sedentary behavior in the population.
P0.RC.O.5 Promote the creation of healthy environments free from pollution, including tobacco, noise, and physical and psychological discomfort.
P0.RC.M. Goals
P0.RC.M.1 Within three years, raise awareness of CVR to more than 80% of the population.
P0.RC.M.2 Promote the consumption of fresh foods and, within three years, reduce the intake of processed foods, sugar (sweets), and unhealthy beverages (soft drinks), with a particular focus on young people. This effort aims to align with the targets set by the National Priority Health Program for Healthy Eating and the Integrated Strategy for the Promotion of Healthy Eating by the DGS, including a salt intake of <5g/day, sugar intake of <50g/day, and a maximum of 25g/day for minors.

P0.RC.M.3 Within one year, reduce annual per capita pure alcohol consumption by 1 liter (to 9.4 L per person per year), aiming to align with a target of <100g per week for men and <50g per week for women.
P0.RC.M.4 Within three years, implement a program to promote regular physical activity through primary healthcare, utilizing wearables to track daily physical activity. The program will include incentives for achieving more than 5,000 steps per day on at least 50% of the days in a year, highlighting the benefits of CVR reduction.
P0.RC.M.5 Within three years, reduce national tobacco consumption by 20%.
P0.RC.M.6 Within three years, reduce noise levels by 20% in public outdoor spaces in district capital cities, based on Municipal Noise Maps.
P0.RC.M.7 Within three years, incorporate cardiovascular health modules into the curriculum for primary and secondary school students.
P0.IC.Heart Failure
P0.IC.O. Objectives
P0.IC.O.1 Increase public awareness of risk factors for HF.
P0.DV.Valvular Heart Disease
P0.DV.O. Objectives
P0.DV.O.1 Increase public awareness of risk factors for valvular disease.
P0.MS.Sudden Arrhythmic Death
P0.MS.O.Objetives
P0.MS.O.1 Enhance public awareness of the chain of survival, including recognizing cardiac arrest, promptly and correctly activating pre-hospital emergency services, initiating BLS, and ensuring early access to defibrillation.
P0.MS.O.2 Increase public awareness of major CVD associated with sudden cardiac death, such as coronary artery disease — responsible for 75–80% of cases — and hereditary myocardial and cardiac rhythm disorders that can lead to sudden death.
P0.MS.O.3 Facilitate access to AEDs due to their significant impact on cardiac arrest management.
P0.MS.M.Goals
P0.MS.M.1 Within three years, in collaboration with the DGS and the Ministry of Education, introduce certified annual BLS training into the school curriculum across all educational levels.
P0.DC.M.2 Within three years, in collaboration with the Institute for Mobility and Transport, incorporate specific BLS training into driver education for all future drivers.
P0.MS.M.3 Establish an annual national awareness campaign on sudden cardiac death.
P0.FA.Atrial Fibrillation
P0.FA.O. Objectives
P0.FA.O.1 Raise public awareness of the recognition and management of key risk factors for AF, with a focus on hypertension, obesity, obstructive sleep apnea, and excessive alcohol consumption.
P0.DC.Coronary Artery Disease
P0.DC.O. Objectives
P0.DC.O.1 Enhance public literacy on the symptoms and presentation of AMI

P0. Strategy
• Health education in the community, educational institutions, and healthcare facilities. • Health education campaigns should be implemented to raise public awareness of the benefits of physical exercise, healthy eating, sleep hygiene, and cardiovascular risk factors management, as well as the harmful effects of alcohol and other addictive substances. These topics should be integrated into school curricula, national campaigns, media, social networks, workplaces, companies, and recreational spaces. • Screening for cardiovascular risk factors and early intervention to address them. • Enhancing the availability of healthier food choices in vending machines, schools, hospitals, cafés, and restaurants within large commercial spaces. • Implementing active breaks in the workplace and extending physical activity periods in schools. • Establishing community exercise programs, supported by local authorities, that offer both in-person sessions and a virtual component for home-based exercise, tailored to different age groups and socioeconomic backgrounds. • Promoting school sports as a recreational and integrative tool, with curricular incentives. • Creating dedicated spaces for regular physical activity in workplaces and developing covered, temperature-controlled exercise circuits, along with installing sports equipment in municipalities. • Audit compliance with the Tobacco Law (Law No. 5/2024), which regulates smoking in outdoor public areas such as café and restaurant terraces, school and healthcare facility perimeters, and playgrounds. • Audit compliance with the General Noise Regulation and the legal framework for noise pollution (Decree-Law No. 9/2007). • Audit compliance with Resolution No. 262/2021 of the Assembly of the Republic, which recommends the installation of AEDs in all sports facilities and schools, as well as the reinforcement of BLS training. • Engage government authorities and the Parliamentary Health Committee in developing legislation and tax incentives for companies that encourage physical activity and healthy eating. • Create dedicated teams or clinics within primary healthcare to assess alcohol and substance use, offering education for patients and their families.

AED - automated external defibrillators; AF – atrial fibrillation; AMI – acute myocardial infarction; BLS - basic life support; CVD – cardiovascular diseases; CVR – cardiovascular risk; DGS – Directorate-General of Health.; ;

II – Primary Cardiovascular Prevention and Health Determinants

Table 3 - Primary Prevention and Health Determinants

P1.Primary Prevention and Health Determinants *Empowerment and Health Literacy* *Access and Equity* *Innovation and Transformation*
P1.RC.Cardiovascular Risk
P1.RC.O. Objectives
P1.RC.O.1 Promote the early identification of cardiovascular risk factors in the general population (intersects with P0.RC.O1).
P1.RC.O.2 Implement systematic assessment of CVR from age 40 using validated tools tailored to the Portuguese population.
P1.RC.O.3 Control modifiable cardiovascular risk factors , including smoking, obesity, dyslipidemia, hypertension, and diabetes, in individuals undergoing primary prevention.

P1.RC.O.4 Reduce CVR associated with alcohol consumption (intersects with P0.RC.M3).
P1.RC.O.5 Record alcohol and tobacco consumption in primary healthcare systematically.
P1.RC.O.6 Ensure universal access to primary healthcare for the entire population.
P1.RC.M. Goals
P1.RC.M.1 Within 1 year, update the CVR assessment tool used in primary healthcare by adopting SCORE2, SCORE2-OP, and SCORE-Diabetes.
P1.RC.M.2 Within 3 years, implement a "*CVR Card*," like the Vaccination Card, integrated into the Electronic Health Record system and accessible to all healthcare institutions and patients (via the MySNS app).
P1.RC.M.3 Within 3 years, improve the monitoring of modifiable cardiovascular risk factors in primary healthcare services, reviewing specific goals and incentives in the indicator matrix (smoking cessation, hypertension, obesity, diabetes, and dyslipidemia).
P1.RC.M.4 Within 3 years, reduce by 30% the number of people in primary prevention who visit healthcare services and who: - continue to smoke; - remain overweight or obese (BMI>25 kg/m²); - have uncontrolled hypertension, dyslipidemia, or diabetes, according to their CVR.
P1.RC.M.5 Within three years, reduce by 10% the population monitored in primary healthcare categorized as high and very high CVR.
P1.RC.M.6 Within three years, reduce alcohol consumption to <30g/week (three drinks/week) in at least 30% of the population (intersects with P0.RC.M.3).
P1.RC.M.7 Within one year, match the reimbursement rate for medications used to control modifiable risk factors with that for chronic diseases (Tier A or B).
P1.IC.Heart Failure
P1.IC.O.Objectives
P1.IC.O.1 Prevent HF by identifying and managing its main risk factors, including hypertension, smoking, diabetes, obesity, excessive alcohol consumption, and exposure to cardiotoxic substances.
P1.DV.Valvular Heart disease
P1.DV.O.Objectives
P1.DV.O.1 Enhance healthcare professionals' understanding of the factors involved in the development of valvular diseases, particularly aortic stenosis and mitral disease.
P1.DV.M.Goals
P1.DV.M.1 Within three years, promote at least one national training program focused on valvular diseases, aimed at General and Family Practice and Internal Medicine.
P1.MS.Sudden Arrhythmic Death
P1.MS.O.Objectives
P1.MS.O.1 Establish the 12-lead ECG in young people as the most cost-effective MCDT for the early detection of channelopathies and cardiomyopathies with a risk of sudden cardiac death.
P1.MS.O.2 Ensure that all suspected cases of cardiomyopathies, based on clinical history and ECG, receive an echocardiogram and are referred for a Cardiology consultation for multidisciplinary risk assessment and sudden death prevention.

P1.MS.O.3 Increase access to genetic testing and family screening for cases of sudden death likely caused by arrhythmias.
P1.MS.O.4 Increase GFM doctors' understanding of the indications for implanting an ICD in the primary prevention of sudden cardiac death.
P1.MS.O.5 Flag patients post-MI with an ejection fraction <35% for early evaluation of the indication for ICD implantation in the primary prevention of sudden cardiac death.
P1.MS.O.6 Increase access to ICD and CRT-D implantation for primary prevention in patients who meet the indications according to international guidelines.
P1.MS.O.7 Improve the clinical management and outcomes of patients with ICDs and/or CRT.
P1.MS.M. Goals
P1.MS.M.1 Within three years, ensure that at least one ECG is performed in schools for all students under age 18 (and not just for competitive athletes).
P1.MS.M.2 Within three years, make it mandatory to collect a biological sample for potential genetic testing of cardiomyopathies and channelopathies during autopsies of individuals who have died suddenly, likely due to arrhythmias (molecular autopsy).
P1.MS.M.3 Within one year, implement the mandatory recording of ejection fraction in all patients who have had an AMI more than 40 days ago (in primary healthcare and hospital care settings).
P1.MS.M.4 Within three years, promote the implantation of ICDs/CRT-Ds, aiming for an implantation rate per 100,000 inhabitants in line with the European median.
P1.MS.M.5 Within one year, establish the maximum guaranteed response time for ICD/CRT-D implantation once the indication is made, like the process for pacemakers. Monitor compliance rates over the following two years.
P1.MS.M.6 Within three years, implement a mandatory national registry for ICD and CRT-D devices, including prospective monitoring of indications and outcomes.
P1.MS.M.7 Within three years, ensure a maximum guaranteed response time of no more than eight weeks for genetic study results when used to stratify arrhythmic death risk.
P1.FA.Atrial Fibrillation
P1.FA.O. Objectives
P1.FA.O.1 Understand the reality of oral anticoagulation and cardioembolic complications, particularly stroke, associated with AF in Portugal.
P1.FA.O.2 Promote the prompt initiation of oral anticoagulation after an AF diagnosis, using the appropriate drugs and doses tailored to the patient's profile.
P1.FA.O.3 Ensure acceptable rates of oral anticoagulation maintenance in patients living with AF.
P1.FA.M. Goals
P1.FA.M.1 Within one year, implement a systematic registry in primary healthcare for oral anticoagulation (with doses adjusted to the patient’s profile) in patients with AF.
P1.FA.M.2 Within three years, monitor the time from diagnosis to the initiation of oral anticoagulation.
P1.FA.M.3 Within three years,>80% of eligible patients with AF adhere to oral anticoagulation.
P1.DC.Coronary Artery Disease
P1.DC.O. Objectives
P1.DC.O.1 Improve the knowledge of healthcare professionals and the general population about risk factors related to coronary artery disease, emphasizing classical factors while also addressing

emerging ones, such as pregnancy-related complications, female-specific factors, pollution, depression, and economic deprivation (intersects with P0.RC.O.1).

P1.DC.M. Goals

P1.DC.M.1 Within three years, promote training sessions for healthcare professionals on both classical and emerging cardiovascular risk factors, as well as risk modifiers calculated using the established scoring systems

P1. Strategy

Primary Prevention of Coronary Artery Disease, Heart Failure, and Valvular Disease.

- Raise public awareness of the main causes of heart disease through community-based educational sessions held at primary healthcare centers, local councils, recreational associations, sports clubs, and via online training.
- Provide universal access to Family Health Units, including family doctors and family nurses, within the National Health Service (SNS).
- Detect cardiovascular risk factors in the general population through screening campaigns in high-footfall areas such as football stadiums, other sports venues, and commercial centers.
- Diagnose and treat (both pharmacological and non-pharmacological) all modifiable cardiovascular risk factors in a timely manner.
- Provide regular follow-up for individuals with cardiovascular risk factors through dedicated consultations in primary healthcare services.
- Record systematically cardiovascular risk factors (coding) and provide regular updates on control targets in the registry, based on the estimated risk and aligned with the latest international recommendations.
- Enable primary healthcare services to request Lp(a) measurement and establish a lipid control indicator, focusing on LDLc as a measurable and auditable parameter.
- Share individual health targets with patients during primary care visits, setting an expected timeline for achievement through shared decision-making.
- Incorporate cardiovascular risk factors into chronic disease management programs, including increased reimbursement for medications used in their control.
- Strengthen the link between primary healthcare teams and specialized alcoholism clinics.
- Ensure primary healthcare services have social work teams to support and assist vulnerable populations, including those facing physical, economic, social, and cultural challenges.
- Allocate public funding to patient associations and scientific societies focused on CVD, to raise awareness about these conditions and their determinants.

Primary Prevention of Sudden Arrhythmic Death

- Promote training initiatives for General and Family Practice and Internal Medicine, in collaboration with scientific societies, on sudden cardiac death and indications for cardiac device implantation.
- Ensure coordination within Local Health Units so that patients who may be candidates for ICD implantation are promptly evaluated by specialists.
- Coordinate with the DGS and primary healthcare services to ensure that all young people up to the age of 18 undergo an ECG reviewed by a cardiologist.
- Expand access to genetic testing in hospital settings for suspected cardiomyopathies and channelopathies, as well as in forensic medicine for cases of sudden death attributed to arrhythmic causes.
- Refer suspected or confirmed cases of cardiomyopathies or channelopathies to a priority Cardiology consultation, with the option of subsequent evaluation at a specialized center.

• Conduct prospective study across all national Cardiology services on ejection fraction following myocardial infarction and after optimized medical therapy, and its correlation with the ICD implantation rate. Primary Prevention of Embolic Stroke in Atrial Fibrillation • Run an educational campaign for anticoagulated patients on the importance of not interrupting their medication. • Establish and standardize follow-up plans for patients with AF. • Encourage the use of anticoagulation in patients with AF/Flutter, including performance indicators at the primary healthcare level. • Conduct a snapshot study in primary healthcare on the rate of oral anticoagulation in Portugal.

AF – atrial fibrillation; AMI – acute myocardial infarction; CRT – cardiac resynchronization therapy; CVR – cardiovascular risk; DGS – General Directorate of Health; ECG – electrocardiogram; g – grams; HF- Heart Failure; ICD - implantable cardioverter-defibrillator; LDLc – low-density lipoproteins cholesterol; Lp(a) – lipoprotein a; MCDT - complementary diagnostic and therapeutic tool; SCORE 2 – Systematic Coronary Risk Evaluation 2; SCORE t Diabetes - Systematic Coronary Risk Evaluation 2-Diabetes; SCORE 2 OP - Systematic Coronary Risk Evaluation 2-Older Persons; SNS – National Health Service.

III – Screening and Early Diagnosis

Table 4 – Screening and Early Diagnosis

RD. Screening and Early Diagnosis *Empowerment and Health Literacy* *Access and Equity* *Innovation and Transformation*
RD.RC.Cardiovascular Risk
RD.RC.O. Objectives
RD.RC.O.1 Promote the systematic assessment of blood pressure, BMI, lipid profile (including at least one Lp(a) measurement over a lifetime), and fasting blood glucose from the age of 18 (intersects with P1.RC.O.1).
RD.RC.M. Goals
RD.RC.M.1 Within one year, make the recording of CVR for patients seen in primary healthcare mandatory (intersects with P1.RC.M1).
RD.RC.M.2 Within three years, characterize CVR in a representative sample of the Portuguese population.
RD.IC.Heart Failure
RD.IC.O.Objectives
RD.IC.O.1 Promote the early diagnosis of HF.
RD.IC.O.2 Ensure at-risk patients undergo regular symptom screening, with quick access to Doppler echocardiography and natriuretic peptide measurement, whenever justified.
RD.IC.M. Goals
RD.IC.M.1 Within three years, establish an integrated HF management program in Local Health Units, led by the DGS, which includes early diagnosis at the primary healthcare level, along with performance and outcome audits.
RD.IC.M.2 Within three years, ensure that>60% of HF diagnoses are made in outpatient settings, before the first visit to the emergency department or hospitalization.
RD.DV.Valvular Heart Disease
RD.DV.O. Objectives

RD.DV.O.1 Promote awareness campaigns for patients, families, and primary care physicians, focusing on valvular heart disease as a treatable cause of HF.
RD.DV.O.2 Increase early detection of valvular heart disease by promoting systematic cardiac auscultation in patients >65 years old in primary healthcare services.
RD.DV.O.3 Promote universal access to detailed, high-quality echocardiograms for accurate evaluation of valvular heart disease (with an emphasis on aortic stenosis due to its prevalence) in symptomatic patients and/or those with abnormal cardiac auscultation.
RD.DV.M. Goals
RD.DV.M.1 Empower the General and Family Practice specialty in the management of valvular heart disease by promoting, within three years, the implementation of at least one national training program.
RD.DV.M.2 Within one year, implement the annual recording of cardiac auscultation in the primary healthcare records of individuals over 65.
RD.DV.M.3 Within one year, include Doppler echocardiography in the indicator matrix of the Family Health Unit for patients with a heart murmur or those over 65 who have not had a prior echocardiogram for another reason.
RD.DV.M.4 Within one year, implement the standardization/merging of the three codes from Dispatch 12876-C/2024, regarding state reimbursement for echocardiograms, with the creation of a single code (complete transthoracic echocardiogram).
RD.MS.Sudden Arrhythmic Death
RD.MS.O. Objectives
RD.MS.O.1 Implement the study of first-degree relatives of victims of sudden cardiac death <50.
RD.MS.O.2 Establish referrals from primary healthcare or hospital services for patients with ventricular dilation, left ventricular dysfunction, hypertrophy, or other signs suggestive of cardiomyopathy to specialized consultations, for a multidisciplinary assessment of sudden cardiac death risk.
RD.MS.O.3 Establish a multidisciplinary team to create a national registry of sudden cardiac death that accurately reflects the national landscape, improving knowledge in this area and identifying potential areas for work and improvement.
RD.MS.M. Goals
RD.MS.M.1 Within three years, increase by 20% the number of cardiac arrest patients recorded by INEM in whom BLS measures are initiated.
RD.MS.M.2 Within one year, promote the implementation of AED usage protocols in public spaces, ensuring compliance with Assembly Resolution 262/2021, which recommends their use in sports venues and schools, with penalties for non-compliance (intersects with P0.MS.O.3).
RD.MS.M.3 Within three years, promote the implementation of mandatory systematic evaluation in Cardiology specialty consultations for direct relatives (children, parents, and siblings) of victims of sudden cardiac death, as defined in DGS clinical guidelines.
RD.MS.M.4 Within three years, establish the maximum guaranteed response time for the referral of suspected cases of cardiomyopathies with sudden death risk or channelopathies to specialized Cardiology consultations, with access to necessary diagnostic tools, including cardiac MRI and genetic testing, and ensure its mandatory implementation through DGS clinical guideline.
RD.MS.M.5 Within three years, create a mandatory national registry of sudden cardiac death, to characterize the national landscape in this area.
RD.FA.Atrial Fibrillation
RD.FA.O. Objectives

RD.FA.O.1 Provide public education on the detection of heart rhythm disturbances, particularly AF, through palpation of the radial peripheral pulse.
RD.FA.O.2 Ensure early identification of AF in at-risk individuals (partly intersects with P0.FA.O.1).
RD.FA.O.3 Provide local response for individuals in whom arrhythmias have been detected using monitoring devices *("wearables"*).
RD.FA.O. Goals
RD.FA.M.1 Within one year, implement the annual recording of heart rhythm in the primary healthcare records of individuals aged 65 and older.
RD.FA.M.2 Within three years, implement an awareness and education program on the use of *wearables* to recognize normal or arrhythmic pulses, identifying situations where medical evaluation is warranted.
RD.DC.Coronary Artery Disease
RD.DC.O. Objectives
Acute Disease:
RD.DC.O.1 Increase health literacy regarding the manifestations of AMI and improve INEM activation in suspected cases.
RD.DC.O.2 Ensure rapid and appropriate access to emergency services at the onset of AMI symptoms in the general population, including vulnerable groups.
RD.DC.O.3 Reduce delays in primary reperfusion times for ST-segment elevation myocardial infarction.
RD.DC.O.4 Reduce mortality associated with AMI, including cases presenting with cardiogenic shock.
RD.DC.O.5 Intervene in vulnerable populations: reduce patient delay to reperfusion (primary angioplasty) in elderly individuals and women presenting with ST-segment elevation myocardial infarction.
RD.DC.O.6 Promote consistent performance of the *Via Verde Coronária** nationwide.
Chronic Disease:
RD.DC.O.7 Increase the speed and accuracy of diagnosing chronic coronary artery disease by promoting the appropriate use of diagnostic tests based on pre-test clinical probability.
RD.DC.O.8 Reduce the time to diagnose symptomatic coronary artery disease and ensure equitable access to advanced diagnostic technologies in public hospitals.
RD.DC.M. Goals
Acute Disease:
RD.DC.M.1 Within two years, increase by 10% the number of individuals who contact 112# when experiencing symptoms of AMI.
RD.DC.M.2 Within one year, implement an inter-institutional protocol (SNS-INEM-Firefighters) to optimize inter-hospital transport, aiming to reduce DIDO (Door-In, Door-Out) time by 20% in hospitals without the capacity to perform primary angioplasty 24/7.
RD.DC.M.3 Within one year, establish referral networks for cardiogenic shock resulting from AMI across the country, in collaboration with DGS.
RD.DC.M.4 Within one year, develop and implement a national system for recording standardized metrics to monitor *Via Verde Coronária**, using the National Cardiology Intervention Registry of SPC.
Chronic Disease:

RD.DC.M.5 Within three years, ensure that at least 80% of coronary artery disease diagnoses result from the appropriate use of diagnostic tests, selected based on protocols that consider pre-test clinical probability, enhancing diagnostic accuracy and reducing unnecessary tests.
RD.DC.M.6 Equip Cardiology services or ensure access to suitable AngioCT equipment for diagnosing coronary artery disease, aiming to reduce waiting times for exams to<4 weeks in 90% of cases.
RD.Strategy
Cardiovascular Risk • Update the National Health Survey data. • Conduct periodic national screenings with national and regional representation. • Extend preventive medicine to universities and polytechnics by conducting annual cardiovascular risk factors screenings. • Use data from occupational health assessments to characterize the risk of the working population. • Make cardiovascular medicine an integral and mandatory part of the specific training residency in General and Family Practice . Heart Failure • Establish and ensure accessibility criteria for MCDTs and specialist consultations that promote the early diagnosis of HF syndrome, its causes, and related comorbidities. • Establish communication channels and integrated records to ensure a smooth transition of care between primary healthcare services and hospital consultations. • Ensure mandatory monitoring of quality indicators that include the early diagnosis of heart failure. Valvular Heart Disease • Fund and provide the necessary tools for health literacy campaigns in the cardiovascular area through the media: the *Valve for Life* initiative to create a national education campaign for valvular heart disease. • Raise awareness among healthcare professionals about valvular heart disease, particularly within primary healthcare settings. • Strengthen the role of General and Family Practice in the initial diagnostic approach by establishing mechanisms for both opportunistic and systematic screening of aortic stenosis. • Develop a digital field in the *S-clínico* primary healthcare system specifically for recording findings from cardiac auscultation and echocardiography. • Create digital alerts for the echocardiographic assessment of valvular disease, particularly aortic stenosis. • Define quality parameters for echocardiography, with quality audits for external providers. • Design referral pathways for hospital care of patients with suspected valvulopathy and follow-up procedures in primary healthcare services. Sudden Arrhythmic Death • Establish multidisciplinary working groups with Forensic Medicine. • Implement the protocol established in 2022 between *SPC* and the Institute of Forensic Medicine for streamlined referral to Cardiology consultations for direct relatives of sudden cardiac death victims. Atrial Fibrillation • Develop a digital field in the *S-clínico* primary healthcare system specifically for recording heart rhythm (pulse palpation and/or ECG). • Run a national media campaign on the importance of peripheral pulse palpation, culminating on March 1st – "*Pulse Day".*

- Establish pathways to provide access to consultations (either in-person or remote) for patients where wearables suggest the presence of arrhythmias.

Acute Coronary Syndrome

- Fund and provide the necessary tools for cardiovascular health literacy campaigns in the media: the *Stent Save a Life!* initiative for the creation of a national education campaign on coronary artery disease.
- Develop campaigns to emphasize the need for immediate contact with 112# in the event of AMI symptoms, including targeted campaigns for vulnerable groups such as the elderly and women.
- Optimize inter-hospital transport by creating regional teams dedicated to the secondary transport of urgent/emergency patients.
- Create a referral network for cardiogenic shock: establish specific pathways for the transfer of patients with AMI and cardiogenic shock to referral centers.
- Publish Clinical Guidelines and ensure continuous monitoring of treatment quality: publish a national guideline for *Via Verde coronária**, standardizing the approach across the country, and promote the development of clinical record systems that allow the monitoring of key metrics for the ongoing evaluation of *Via Verde Coronária**.

Chronic Coronary Syndrome

- Standardize diagnostic test usage and uniformity in reports and clinical follow-up:

  - Develop and implement usage guidelines for diagnostic tests based on the clinical probability of coronary artery disease;

  - Introduce the CAD-RADS classification in cardiac AngioCT reports and establish standardized recommendations for follow-up and treatment based on the findings.

- Create fast-access chest pain clinics:

  - Implement specialized chest pain clinics to expedite the diagnosis of patients with suspected symptomatic coronary artery disease.

- Strengthen technological infrastructure in public hospitals and provide clear guidelines on response times:

  - Set clear goals and guidelines for the maximum time allowed to perform diagnostic tests for coronary artery disease;

  - Equip public hospitals with the appropriate technological resources for the diagnosis of coronary artery disease.

AED – automatic external defibrillator; AMI – acute myocardial infarction; AngioCT – angio computed tomography; BLS – Basic Life Support; BMI – body mass index; CAD-RADS - Coronary Artery Disease-Reporting and Data System; DGS - General Directorate of Health; ECG – electrocardiogram; HF – Heart Failure; INEM – National Institute of Medical Emergency; Lp(a) – lipoprotein a; MCDT - complementary diagnostic and therapeutic tool; MRI – magnetic resonance imaging; SNS – National Health Service; SPC – Portuguese Society of Cardiology; * Via Verde Coronária – Coronary fast-track treatment system; # 112 – national emergency number.

IV – Secondary Cardiovascular Prevention

Table 5 – Secondary Cardiovascular Prevention

P2. Secondary Cardiovascular Prevention		
Empowerment and Health Literacy	*Access and Equity*	*Innovation and Transformation*
P2.RC.Cardiovascular Risk		
P2.RC.O. Objectives		

P2.RC.O.1 Increase the number of patients with atherosclerotic disease with optimized control of cardiovascular risk factors .
P2.RC.O.2 Increase the number of patients with atherosclerotic disease taking statins/lipid-lowering therapies.
P2.RC.O.3 Manage excess weight/obesity in patients with CVD according to the best available clinical practices, through multi-institutional and nationwide collaboration.
P2.RC.O.4 Reduce gender disparities in the implementation of secondary prevention measures after an acute event, including both patient and healthcare provider actions.
P2.RC.M. Goals
P2.RC.M.1 Three years after the implementation of the *CVR Card*, ensure that>75% of patients (of both genders) with evidence of atherosclerotic disease have their cardiovascular risk factors under control.
P2.RC.M.2 Within two years, implement a program to manage excess weight/obesity in patients with CVD, based on the best available clinical practices, with multi-institutional and nationwide collaboration.
P2.IC.Heart Failure
P2.IC.O. Objectives
P2.IC.O.1 Reduce HF morbidity and mortality.
P2.IC.O.2 Improve the management of refractory acute HF/cardiogenic shock.
P2.IC.M. Goals
P2.IC.M.1 Within three years, ensure that>80% of patients discharged after hospitalization for HF (HF GDH codes) are receiving the four recommended therapeutic pillars, if they are tolerated (as per SPMS Prescription List).
P2.IC.M.2 Within three years, promote the establishment of reference centers with the technical capacity and human resources required for the use of organ support techniques, including mechanical circulatory support, to ensure the most appropriate treatment for refractory acute HF or cardiogenic shock.
P2.IC.M.3 Within three years, ensure the establishment of HF day hospitals, with teams dedicated to treating HF exacerbations, in all district hospitals with a Cardiology department.
P2.IC.M.4 Within three years, ensure access to specialized HF consultations within 30 days for patients with: HF with reduced ejection fraction; HF with preserved ejection fraction who remain symptomatic after starting treatment in primary care, or whose comorbidity management cannot be handled in primary care.
P2.IC.M.5 Within three years, ensure that >80% of patients with HF experiencing acute exacerbations have access to a specialist consultation within a maximum wait time of 2 days
P2.IC.M.6 Within three years, ensure that >50% of HF patients have access to HF day clinics and telemonitoring programs, coordinated with specialized consultations, both in primary and hospital care.
P2.IC.M.7 Within three years, ensure that >90% of patients with refractory HF and/or cardiogenic shock are referred to a specialized center with the expertise and resources to provide organ support techniques, including mechanical circulatory support, ensuring the highest standard of care.
P2.DV.Valvular Heart Disease
P2.DV.O. Objectives
P2.DV.O.1 Ensure timely and equitable access to Cardiology consultations for patients with suspected severe valvular disease.

P2.DV.O.2 Improve the capacity for timely diagnostic testing to support initial evaluation and treatment planning.
P2.DV.O.3 Implement strategies to ensure timely surgical and percutaneous treatment of valvular disease, with a focus on aortic stenosis, while striving for equitable access to care nationwide.
P2.DV.O.4 Reduce the incidence of infective endocarditis and integrate oral health promotion into the standard care provided by SNS.
P2.DV.M. Goals
P2.DV.M.1 Within three years, establish maximum waiting times for Cardiology consultations.: <30 days for symptomatic valvular disease, especially in cases of aortic stenosis, elevated natriuretic peptides, or left ventricular dysfunction; <60 days for severe asymptomatic valvular disease.
P2.DV.M.2 Within three years, ensure that all cities with over 50,000 inhabitants have healthcare facilities equipped for Cardiology consultations and timely access to Doppler echocardiography.
P2.DV.M.3 Within three years, ensure that all district capitals have angioCT equipment capable of evaluating cardiac conditions, including pre-implantation assessment for percutaneous aortic valve replacement.
P2.DV.M.4 Within three years, ensure that all district capitals have MRI equipment capable of assessing cardiac conditions.
P2.DV.M.5 Within three years, ensure that patients with an established diagnosis: - All stable outpatients with symptomatic valvular disease receive an appropriate therapeutic response within a maximum of 60 days; - All outpatients with worsening symptomatic valvular disease receive appropriate treatment within a maximum of 30 days; - All hospitalized patients with symptomatic valvular disease receive appropriate treatment within a maximum of seven days; - All patients with symptomatic valvular disease and refractory HF receive appropriate treatment within a maximum of 48 hours.
P2.DV.M.6 Within three years, ensure that the above targets are met in>90% of patients across all specialized referral centers.
P2.DV.M.7 Within three years, provide funding through a dental voucher program for patients with valvular disease.
P2.DV.M.8 Implement at least one annual awareness campaign on oral hygiene, focusing on patients with valvular disease.
P2.MS.Sudden Arrhythmic Death
P2.MS.O. Objectives
P2.MS.O.1 Provide follow-up and education programs for patients with ICDs and their caregiving healthcare professionals, ensuring that patients post-arrhythmic storm or post-isolated shock are promptly referred to specialized centers with the capability to perform ventricular tachycardia ablation (both endocardial and epicardial).
P2.MS.M. Goals
P2.MS.M.1 Within two years, reduce by 20% the gap between Portugal and the EU average in the number of ventricular tachycardia ablations performed in patients with ICDs.
P2.MS.M.2 Within three years, develop and implement a national program for rehabilitation and personalized exercise prescription to promote cardiovascular prevention and reduce the risk of sudden cardiac death (intersects with P3.RbQ.M.1).

P2.FA.Atrial Fibrillation
P2.FA.O. Objectives
P2.FA.O.1 Ensure comprehensive identification and integrated management of AF-related comorbidities, including obesity, alcohol abuse, and obstructive sleep apnea syndrome.
P2.FA.O.2 Ensure fair and equal access to specialized cardiac electrophysiology care nationwide.
P2.FA.O.3 Ensure timely AF treatment through ablation, with public education and training for referring physicians on the importance of early-stage referral.
P2.FA.M. Goals
P2.FA.M.1 Within five years, increase the number of patients undergoing AF ablation by 20% (aligning with the EU average) and raise the proportion of ablations performed for paroxysmal AF versus persistent AF.
P2.FA.M.2 Within five years, achieve nationwide equity, ensuring a similar number of treated patients per 100,000 inhabitants across all regions.
P2.FA.M.3 Within three years, define and monitor a maximum guaranteed response time of 8 weeks for AF ablation.
P2.DC.Coronary Artery Disease
P2.DC.O. Objectives
P2.DC.O.1 Increase the number of patients with AMI who adhere to international recommendations for secondary cardiovascular prevention.
P2.DC.O.2 Develop strategies to ensure that surgical and percutaneous treatments for coronary artery disease are performed within recommended timeframes, ensuring equitable access to these therapies nationwide.
P2.DC.M. Goals
P2.DC.M.1 Within three years, ensure that>90% of patients with AMI (AMI GDH codes) are discharged from the hospital with guideline-directed prognostic-modifying therapy (as per the SPMS Prescription List)
P2.DC.M.2 Within three years, ensure that>90% of patients undergoing myocardial revascularization (myocardial revascularization GDH codes), regardless of the technique, are discharged with antiplatelet and lipid-lowering therapy, in line with best practices (as per SPMS Prescription List).
P2.DC.M.3 Within one year, implement the control of modifiable risk factors as a performance indicator in primary healthcare for patients with established coronary artery disease (intersects with P1.RC.M.3).
P2.DC.M.4 Within three years, ensure>90% of patients with chronic coronary artery disease are treated with antiplatelet and lipid-lowering therapy.
P2.DC.M.5 Within three years, increase to >75% the proportion of AMI patients who achieve smoking cessation, blood pressure control, target LDL cholesterol levels, and target glycated hemoglobin levels, in both men and women (intersects with P2.RC.M.1).
P2.DC.M.6 Within three years, ensure that>90% of patients with coronary artery disease who require revascularization undergo the procedure within six weeks.
P2.DC.M.7 Within three years, adopt the same waitlist management tools for surgical and percutaneous revascularization to create synergies and enable *benchmarking.*
P2. Strategy

Cardiovascular Risk

- Raise awareness among patients, healthcare professionals, and policymakers about the importance of secondary prevention and Cardiac Rehabilitation (CR) after acute cardiovascular events.
- Raise awareness of the importance of secondary prevention and rehabilitation in women and older adults, emphasizing the underutilization of these programs in these populations.
- Educate patients and healthcare professionals on therapeutic goals and target values to be achieved.
- Promote long-term adherence to medication and lifestyle changes.

Heart Failure

- Approach HF as a chronic disease with dedicated programs for comorbidity management and reimbursement of specific therapies.
- Expand specialized HF units to provide access during clinical deterioration, enabling early intervention and reducing emergency department visits and hospitalizations.
- Increase the number of specialized nurses, essential for patient education and the promotion of self-care.
- Promote the use of innovative digital tools for telemonitoring, especially for high-risk patients, while establishing criteria to ensure equitable access.
- Ensure HF teleconsultations are an alternative to in-person visits without causing financial disadvantages to healthcare facilities.
- Implement a 'Spoke-Hub' model following the *Via Verde* referral pathway for coronary emergencies, ensuring that hemodynamics laboratories are equipped to initiate mechanical circulatory support before referring patients to specialized centers. To this end, all hemodynamics laboratories should have the capability to initiate short-term ventricular support, such as intra-aortic balloon pumps and/or Impella®.
- Establish advanced heart failure and cardiogenic shock referral centers, ensuring seamless integration with other healthcare facilities. These referral centers should be staffed by multidisciplinary teams, including a cardiologist, interventional cardiologist, cardiac surgeon, intensivist with a cardiovascular focus, and vascular surgeon support. These centers must be equipped with essential resources such as invasive mechanical ventilation, renal replacement therapy, mechanical circulatory support, neuromonitoring, and advanced electrophysiology consultation. To ensure quality control and transparency, regular audits and participation in multicenter registries are strongly recommended. Additionally, health authorities could play a key role in establishing a mandatory national registry.
- Ensure continuous training for healthcare professionals, including both those in referral centers and referring clinicians.

Valvular Heart Disease

- Ensure fair and efficient access to the treatment of valvular heart disease.
- Establish fast-track pathways for consultations, enabling prompt evaluation and treatment planning.
- Establish multidisciplinary protocols led by Cardiology and Cardiac Surgery for the comprehensive management of patients with severe aortic valve stenosis. These protocols should outline guidelines for the diagnostic phase, risk assessment, therapeutic options, and decision-making pathways, while also specifying the specialists involved at each stage.
- Encourage the establishment of heart valve clinics to optimize the diagnosis, treatment, and follow-up of patients. These centers should ensure equitable access at every stage of care. In cases where cardiac surgery is not available within a Local Health Unit, affiliation protocols with surgical centers or alternative organizational models should be established to maximize existing resources.
- Equip cardiology departments with dedicated AngioCT scanners capable of performing TAVI-CT, which is crucial for clinical decision-making.

- Establish a dedicated surgical program for aortic valve disease, with incentives to boost productivity.
- Ensure that percutaneous procedures for valvular disease are coded on par with surgical procedures to enhance the evaluation and monitoring of waitlists for these treatments.
- Audit wait times for consultations, MCDTs, and treatments.
- Improve healthcare professionals' understanding of best practices and follow-up care for patients who have undergone valve surgery or procedures.
- Raise awareness, in collaboration with the Portuguese Dental Association, about the need for endocarditis prophylaxis in dental procedures. This includes establishing access to oral health programs within Local Health Units and ensuring broad reimbursement for antibiotic regimens through a ministerial ordinance in the National Electronic Prescription System (PEM).
- Monitor adherence to antibiotic prophylaxis.

Sudden Arrhythmic Death and Atrial Fibrillation

- Establish a national referral network for the rapid evaluation and management of patients requiring ventricular tachycardia ablation after an arrhythmic storm or ICD shock.
- Develop and train specialized teams in CR and personalized exercise prescription, with a focus on the specific needs of patients at risk of sudden cardiac death.
- Implement a two-tier educational campaign: one targeting the general public to raise awareness of ablation as a viable treatment option for AF, especially in its early stages, and another aimed at primary care providers to emphasize the importance of early referral.
- Develop online and in-person training modules on AF management, with a strong emphasis on early referral for new therapies.
- Define referral criteria and optimize wait times for the first specialist hospital consultation. Promote closer collaboration between primary healthcare hospital centers within Local Health Units to facilitate fast and well-guided patient referrals.
- Review and streamline the Hospital Referral Network for Electrophysiology to ensure efficient and comprehensive nationwide coverage.
- Define the geographic responsibility of each center based on its level of specialization.

Coronary Artery Disease

Intervention in primary healthcare :

- Establish the control of dyslipidemia and other modifiable risk factors in secondary prevention as a performance indicator in primary care, similar to existing metrics for diabetes and hypertension management.

Incentives and Optimization in Cardiac Surgery Services:

- Implement incentive programs for surgical teams to improve efficiency and increase the number of procedures performed. Reevaluate and optimize operative times to reduce turnaround time between surgeries.

Standardize the coding of percutaneous revascularization procedures to align with surgical procedures.

- Allow for the measurement of wait times for percutaneous revascularization while promoting the use of outpatient settings for these procedures.

AF – atrial fibrillation; AMI – acute myocardial infarction; AngioCT – angio computed tomography; CR – Cardiac Rehabilitation; CVD – cardiovascular diseases GDH – Diagnosis-Related Groups; ICD - implantable cardioverter-defibrillator;; HF – heart failure; MCDT - complementary diagnostic and therapeutic tool; MRI – Magnetic Resonance Imaging; PEM - National Electronic Prescription System; SNS – National Health Service; SPMS – Shared Services of the Ministry of Health; TAVI-CT – transcatheter aortic valve implantation – computed tomography; EU – European Union.

V – Rehabilitation and Quality of Life Promotion

Table 6 – Rehabilitation and Quality of Life Promotion

P3. Rehabilitation and Quality of Life Promotion		
Empowerment and Health Literacy	*Access and Equity*	*Innovation and Transformation*
Relevant Across All Priority Areas		
P3.RbQ.O. Objectives		
P3.RbQ.O.1 Promote health preservation.		
P3.RbQ.O.2 Create opportunities for participation in CR Programs.		
P3.RbQ.O.3 Increase the number of eligible cardiovascular patients participating in CR, including underrepresented groups such as women and older adults.		
P3.RbQ.M. Goals		
P3.RbQ.M.1 Within five years, everyone with an indication for CR should have access to these programs, as eligibility now extends to all cardiac conditions.		
P3.RbQ.M.2 Within three years, establish a structured program to develop cardiovascular rehabilitation centers based on international best practices, ensuring comprehensive nationwide coverage through a coordinated network.		
P3.RbQ.M.3 Within > years, ensure: - Referral >80% of eligible patients are referred to CR programs. - Inclusion >50% of referred patients are enrolled in CR programs. - Adherence >75%participation in the CR programs. - Dropout <25%.		
P3. Strategy		
• Raise awareness among patients, healthcare professionals, and policymakers about the importance of CR following acute cardiovascular events. • Raise awareness of the importance of CR for women and older adults, highlighting the underutilization of these programs in these patient subgroups. • Expand the variety of available CR programs. • Sustain long-term CR programs outside hospital settings. • Establish clear pathways between acute hospitalization and CR. • Facilitate access and ensure equity by increasing availability and minimizing barriers. • Diversify and adapt CR programs — offering in-person (synchronous), remote (both synchronous and asynchronous), and hybrid options — tailored to specific patient subgroups. • Open new CR centers and strengthen the recruitment of additional healthcare professionals. • Integrate and optimize primary healthcare care services in the maintenance phases. • Establish reimbursement for CR in private services to ensure access for patients unable to enroll in public programs within the recommended timeframe. This requires creating contracted rehabilitation centers in partnership with SNS and insurance providers. • Leverage platforms that enable real-time or remote communication between patients and healthcare professionals, integrating wearables such as smartwatches, pedometers, and activity monitors with digital health platforms. • Establish a National Registry to accurately capture the landscape of CR.		

CR – cardiac rehabilitation; SNS – National Health Service.

Key Points

- Health education is a cross-cutting and essential vector in the prevention and management of major CVD.
- Cardiovascular health literacy should be integrated throughout the life cycle, using tailored channels to ensure broad reach and easy access. Examples include incorporating cardiovascular health promotion into school curricula, community-based educational programs, and basic life support training in schools and communities.
- Integration of key social determinants into the planning of cardiovascular health policies:
    - Economic context, employment status, and working conditions
    - Level of education and professional training
    - Geography, housing conditions, and exposure to pollution
    - Cultural and behavioral habits
    - Social and community support networks
    - Access to healthcare services.
- Coordination among all key stakeholders: the DGS/Ministry of Health, the Directorate-General for Education/Ministry of Education, the Ministry of Economy, Scientific Societies, Academia, and the Social and Business Sectors, in strategic planning for cardiovascular health.
- Effective and prioritized investment in public education, early identification and diagnosis, and appropriate treatment of the main modifiable CVR factors (hypertension, dyslipidemia, diabetes mellitus, smoking, being overweight/obesity, physical inactivity), as a strategy to leverage future cardiovascular health.
- Prompt adoption of focused and effective public health measures to manage the main CVR factors, with a particular emphasis on the need to implement actions to control overweight, obesity, and cardiometabolic diseases, given the epidemic proportions already reached.
- Highlight the central role of primary healthcare services in ensuring the continuity of cardiovascular health preservation across its primordial, primary, secondary, and tertiary dimensions, facilitating and integrating the provision of cardiovascular care across the various medical specialties involved.
- Value the complementary contribution of Occupational Medicine in the promotion and protection of cardiovascular health in the working population, through early identification of cardiovascular risk factors, implementation of prevention/mitigation strategies in the workplace, and appropriate referral to necessary healthcare services.
- Ensure rational and timely access to diagnostic, therapeutic, and cardiovascular support resources that are necessary, effective, and grounded in the strongest scientific evidence and best contemporary practices:
    - Ensuring the allocation of qualified human resources, with ratios that reflect the specific needs of the population served and technical expertise aligned with clinical

requirements, thereby ensuring equitable access and excellence in the practice of Cardiology

- Carefully and justifiably updating the technological and equipment infrastructure, ensuring they keep pace with scientific and technological advancements and are aligned with the specific needs of the population
- Harmonizing the clinical process at the national level and standardizing MCDTs reports, avoiding redundancies and promoting more efficient communication across different levels of healthcare, ensuring smoother continuity of care
- Reviewing the regulatory framework of processes involved in cardiology practice, such as equating percutaneous procedures with surgical ones and updating medication reimbursement rates, thus promoting better conditions for the efficient and sustainable management of care and improving access to pharmacological treatments
- Creating cross-sectional structures for specialized care in both acute and chronic conditions, organized in a network that capitalizes on the technical and organizational synergies of existing institutions, such as *Via Verde Coronária* (Coronary fast-track treatment system), Cardiogenic Shock Pathway, Structural Intervention, Electrophysiology, Cardiac Surgery, and Advanced HF Units
- Establishing a logistical and operational coordination model between different national healthcare institutions, optimizing infrastructures, teams, inter-institutional transport, and technical differentiation to make the best use of available resources
- Developing comprehensive, diverse, and flexible CR programs that are inclusive of vulnerable groups, tailored to each healthcare unit, and integrated across primary care, hospital care, and specialized centers, whether public or contracted, reinforcing their role as a crucial pillar of tertiary prevention.

- Monitor the quality of care and performance of cardiovascular care providers within the system using validated indicators, based on effectiveness, efficiency, and quality criteria.
- Ensure there is innovation and technological advancement in two key areas of the approach to cardiovascular diseases:
  - Optimizing the use of cardiovascular health data through the adoption of structured digital tools, increasingly grounded in artificial intelligence, to enhance data collection, integration, and analysis. This approach enables the identification of trends, evaluation of interventions, and promotion of evidence-based solutions. The use of national clinical registry databases and platforms not only supports effective strategic planning in this area but also fosters research and development;
  - Investment in applied research and strategic collaboration, involving research centers, scientific societies, and healthcare institutions, to drive the development of new solutions for clinical practice.

Concluding Remarks

The Strategic Plan for Cardiovascular Health in Portugal is a project of the Board of the Portuguese Society of Cardiology (2023-2025 term), aligned with ongoing European initiatives aimed at prioritizing cardiovascular health as a key pillar for public health promotion, reducing global and premature morbidity and mortality, and improving the population's quality of life.

This plan reaffirms the commitment to advancing cardiovascular medicine in Portugal by raising scientific and knowledge standards and, in turn, helping to ensure that the Portuguese population receives excellent cardiovascular care based on the best available evidence. Furthermore, it reflects a collective civic duty to actively contribute to the prevention, early diagnosis, and effective treatment of cardiovascular diseases, ultimately fostering a healthier society.

More than just a conceptual manifesto, this document reflects the strategic vision of SPC and outlines planning solutions for the effective implementation of best practices in cardiovascular health, aiming to maximize outcomes in this field, guarantee equity in access to care, and promote the responsible and ethical use of available resources, ensuring distributive justice and serving the best interests of the entire population.

Ética de la publicación

1. ¿Su trabajo ha comportado experimentación en animales?:

No

2. ¿En su trabajo intervienen pacientes o sujetos humanos?:

No

3. ¿Su trabajo incluye un ensayo clínico?:

No

4. ¿Todos los datos mostrados en las figuras y tablas incluidas en el manuscrito se recogen en el apartado de resultados y las conclusiones?:

Sí

Conflicts of interest

The authors have no conflicts of interest regarding this work.

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