Aging with Heart Alliance

Cardiovascular Disease and the Case for Prevention

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Global Coalition on Aging

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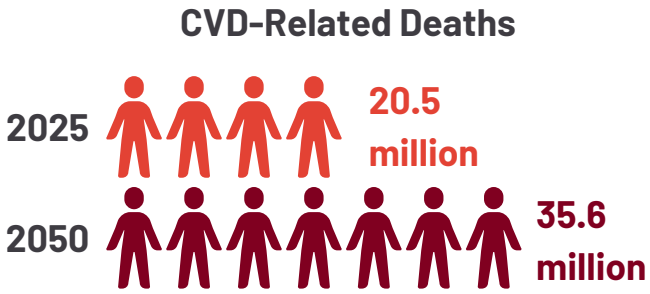
INTRODUCTION:

Cardiovascular Disease and the Case for Prevention

CVD: The Leading Global Killer

Cardiovascular disease (CVD) is the world's leading cause of death, claiming millions of lives each year. Among its forms, atherosclerotic cardiovascular disease (ASCVD) is the primary driver, affecting 28.6 million U.S. adults in 2020 alone. Globally, ASCVD cases are projected to surpass 184 million by 2050, with direct medical costs exceeding $200 billion annually. By mid-century, CVD-related deaths could rise from 20.5 million in 2025 to 35.6 million, placing immense societal and economic burdens.[1],[2]

Despite its widespread impact, CVD has been deprioritized on the global health agenda, stalling progress and allowing mortality rates to climb. Reestablishing CVD prevention as a global priority is urgent. Integrating preventive strategies—primordial, primary, secondary, and tertiary—across healthcare systems can address root causes, reduce healthcare strain, and promote healthier communities.[3]



ASCVD: A Leading Threat

ASCVD, the leading cause of death worldwide, occurs when plaque builds up in arteries, restricting blood flow and triggering heart attacks and strokes.[4],[5] It accounts for four out of five cardiovascular deaths.[6] Despite being largely preventable through healthy lifestyles, routine monitoring, and lipid lowering therapies, ASCVD prevalence continues to rise.[7],[8]

Managing modifiable risk factors—including high cholesterol, hypertension, tobacco use, and physical inactivity—is essential. Prevention strategies must combine lifestyle interventions with effective treatment. As global populations age, prioritizing ASCVD prevention is critical to mitigating its rising health and economic toll.[9],[10],[11],[12],[13]

LDL: A Critical Factor in Heart Health

Low-density lipoprotein (LDL), or "bad cholesterol," is a causal driver of ASCVD.[14],[15] It accumulates in arteries, forming plaques that heighten the risk of heart attacks and strokes. The longer LDL remains elevated, the greater the risk—making early, aggressive, and sustained management essential.[16]

Although effective treatments exist, millions—especially older adults—fail to reach recommended LDL targets.[17],[18] As populations age, controlling LDL is vital to reducing heart disease, promoting healthier aging, and alleviating the growing burden of CVD.

To learn more about LDL risks for older people and LDL management, read GCOA's report on improving cardiovascular health through LDL management.

Why Focus on Prevention?

Prevention is both a medical necessity and a strategic response to increasing pressures on patients, healthcare systems, and economies. As populations age, these pressures will intensify, making prevention a fundamental pillar of healthcare sustainability.[19] Countries that invest a higher percentage of GDP in healthcare tend to have lower CVD mortality rates, underscoring the role of strong systems in advancing preventive care. Yet, gaps in access, adoption, and effectiveness persist. Closing these gaps is essential to maximizing prevention's impact.[20]

- **Better for Patients:** Prevention improves quality of life by slowing disease progression, reducing hospitalizations, and minimizing complications. Early interventions empower individuals to make informed lifestyle choices, undergo routine screenings, and access preventive care.
- **Better for Healthcare Systems:** Prevention reduces costly acute events like heart attacks and strokes, easing financial strain and optimizing resource allocation. Scalable prevention models can improve healthcare access and system resilience.
- **Better for Society:** A healthier population reduces economic burdens on families, communities, and governments. Prevention minimizes lost workdays, boosts productivity, and cuts long-term healthcare costs. Timely, effective treatment further improves outcomes while containing expenses.

By embedding prevention at the core of CVD management, stakeholders can foster healthier, more sustainable futures.

CVD, Multimorbidities, and Aging

CVD is closely linked with other health conditions, making its prevention a gateway to broader health improvements. Age is the strongest predictor of CVD, as physiological changes such as oxidative stress and inflammation heighten risk.[21] CVD prevalence rises sharply with age, affecting approximately 40% of adults aged 40-59, 75% of those aged 60-79, and 86% of individuals over 80.[22],[23]

Beyond biological aging, perceptions of aging (SPA) significantly influence cardiovascular health. Individuals who feel older than their chronological age or hold negative views of aging are 40% more likely to develop heart conditions and nearly twice as likely to experience strokes. Addressing these psychological factors can enhance traditional prevention efforts.[24]

CVD is also bidirectionally linked to other chronic conditions. Multimorbidity—the presence of two or more chronic diseases in an individual—is increasingly common among aging populations and complicates disease management. For instance:

Diabetes: Shared risk factors like obesity and hypertension increase CVD susceptibility.[25],[26]
Cancer: Survivors of cancer often face heightened CVD risk due to the disease's biological mechanisms and cardiotoxic treatments.[27]
Chronic Respiratory Conditions: Diseases like COPD and asthma elevate cardiovascular risk and contribute to mortality.[28]
Chronic Kidney Disease (CKD): CKD heightens risks of hypertension, heart failure, and atherosclerosis, often going undiagnosed in early stages.[29],[30]

Many patients also experience cardiorenal-metabolic syndrome—a complex interplay of CVD, kidney disease, and metabolic disorders like type 2 diabetes. These conditions fuel one another, complicating disease management. For example, poor kidney function can worsen high blood pressure, metabolic dysfunction can drive insulin resistance, and CVD can accelerate organ damage.[31],[32],[33] With 1 in 3 American adults affected by at least three of these risk factors, recognizing and addressing these interrelated conditions is crucial.[34]

CVD prevention extends beyond heart health—it lowers risks for other chronic diseases, enhances overall well-being, and delivers measurable health gains, particularly for aging populations with multimorbidity.[35]

Defining Prevention Along a Continuum

CVD prevention spans four interconnected stages—**primordial, primary, secondary, and tertiary**—each playing a key role in reducing risk and improving outcomes. A lifelong, comprehensive strategy is essential, particularly as aging populations require sustained interventions.

- **Primordial Prevention:** Primordial prevention targets the root causes of cardiovascular risk before they emerge, creating environments, communities, and lifestyles that promote heart health. Interventions address factors such as poor diets, sedentary behavior, and harmful social or environmental conditions.[36]
- **Primary Prevention:** Primary prevention aims to stop the disease before it starts by identifying and addressing existing risk factors like elevated cholesterol, hypertension, and smoking. Strategies include promoting healthy behaviors such as regular exercise, balanced diets, and tobacco avoidance, alongside routine screenings and early intervention.[37]
- **Secondary Prevention:** For individuals diagnosed with CVD or those who have experienced a cardiac event, secondary prevention helps prevent further complications. It includes risk factor management through lifestyle changes, medication, and regular monitoring.[38],[39]
- **Tertiary Prevention:** This stage focuses on managing chronic conditions like heart failure or advanced CVD. The goal is to prevent further deterioration, improve quality of life, and maintain functional independence through tailored interventions that address mobility challenges and physical disability.[40]

The Prevention Continuum

Primordial Prevention	Primary Prevention	Secondary Prevention	Tertiary Prevention
Subclinical No noticeable symptoms, but underlying changes are detectable with tests.		**Clinical** Symptoms are present and noticeable.	
Preventing the development of risk factors that lead to disease.	Preventing disease onset by addressing risk factors.	Detecting and treating disease early to stop its progression.	Reducing complications and managing symptoms of established disease.
Community-wide policies promoting healthy diets and physical activity.	Encouraging smoking cessation to reduce CVD risk.	Managing blood pressure in patients with diagnosed CVD to prevent heart attacks or strokes.	Cardiac rehabilitation after a heart attack to prevent future events.

Examples of the Prevention Continuum

LDL Management

Managing LDL cholesterol is central to CVD prevention, emphasizing early detection, aggressive intervention, and sustained treatment. In primary prevention, early and routine LDL testing helps identify elevated levels before they lead to CVD. A reduction of just 1 mmol/L lowers the risk of CVD events by approximately 23%, reinforcing the importance of early and sustained intervention.[41] While lifestyle modifications, such as a heart-healthy diet, regular exercise, and tobacco avoidance are foundational, many individuals—especially those with familial hypercholesterolemia (FH) or other high-risk conditions—require lipid-lowering therapies (LLTs) like statins or combination treatments to achieve optimal LDL levels and prevent long-term cardiovascular complications.[42],[43]

FH, a genetic condition causing dangerously high cholesterol levels from an early age, significantly increases the risk of premature CVD. FH affects 1 in 250 people and accounts for nearly 20% of all heart attacks in individuals under 45 years old.[44],[45] Routine LDL screening and early intervention are critical to preventing severe cardiovascular outcomes.

For those with existing CVD, secondary and tertiary prevention focuses on intensive LDL reduction to prevent recurring cardiovascular events and slow disease progression. Statins and other LLTs, combined with ongoing medical supervision and adherence, are essential for improving long-term health.[46],[47],[48] By integrating LDL management across all prevention stages, from early detection to post-event treatment, proactive intervention remains a cornerstone of cardiovascular health.

Cardiac Rehabilitation

CR is a proven secondary and tertiary prevention strategy that aids recovery following heart attacks, heart failure, or cardiac surgery. CR programs integrate exercise, education, and lifestyle support to reduce cardiovascular mortality by up to 25% and recurrent heart attacks by 38%.[49],[50] For aging populations, CR is crucial in maintaining functional independence and improving quality of life. However, its underutilization—especially among older adults, women, and minority groups—highlights the need for expanded access and targeted outreach.[51],[52],[53]

The Economic Case for Prevention

Prevention improves health outcomes, reduces hospitalizations, and strengthens healthcare systems. It is also a cost-effective strategy to curb the rising economic burden of CVD. Without action, annual cardiovascular-related expenses in the U.S. could quadruple from $393 billion to $1.49 trillion, while productivity losses may increase 54%, from $234 billion to $361 billion.[54]

A 5% reduction in blood pressure levels in England and Wales could save €100 million annually.

In the same region, a 5% reduction in cholesterol levels could save €80 million.[55]

Team-based hypertension management in the U.S. could prevent tens of thousands of cardiovascular events, saving Medicare up to $900 million over five years.

Self-measured blood pressure monitoring in the U.S. generates up to $19.34 per dollar spent, reducing long-term costs by nearly $7,800 per person.[56]

Prevention also reduces the high costs of acute events. A single heart attack can exceed $20,000 per patient in direct medical expenses, not including follow-up care, productivity losses, and other downstream impacts.[57] Scalable prevention measures significantly cut these long-term costs by addressing risk factors before they escalate.[58]

Innovative and Equitable Solutions

As aging populations drive higher rates of chronic diseases, innovative prevention approaches are vital. Virtual cardiac rehabilitation programs, for instance, help reduce geographic disparities and expand access to proven interventions.[59] Policies promoting equitable access to preventive care—including screenings, counseling, and community-based initiatives—further reduce health disparities while delivering strong economic returns.

Case Studies: Governments Advancing CVD Prevention through Innovation, Early Detection, and Cost-Saving Strategies

Governments worldwide increasingly recognize CVD prevention as both a public health and economic priority. While approaches vary, key trends are emerging: earlier screening, expanded treatment access, scalable technology-driven prevention, and national action plans.

Countries with strong prevention policies—such as Singapore's integrated national strategy and Indonesia's widespread screening initiatives—expect improved health outcomes and reduced long-term healthcare costs.[60],[61] At the policy level, the EU Council Conclusions on Improving Cardiovascular Health signal growing momentum for structured, continent-wide prevention efforts, calling for earlier detection, expanded treatment access, and greater investment in research and innovation.[62],[63]

The following case studies illustrate how nations are integrating prevention into healthcare frameworks, providing insights on innovation, policy, and economic sustainability.

Germany and Czechia

Germany and the Czechia highlight both progress and opportunities in CVD prevention. Since 2013, Czechia 's National Cardiovascular Programme has driven prevention efforts and is now being updated to integrate advances in diagnosis, therapy, and prevention. During its EU Presidency, the country also championed the Prague Declaration, advocating for universal pediatric screening for familial hypercholesterolemia—a cost-effective, lifesaving measure. Additionally, the Czechia is pushing for a European action plan on CVD to unify prevention strategies across member states.[64]

Germany advances CVD prevention through initiatives like the National Heart Alliance and proposed Healthy Heart Act, which promotes early detection through check-ups starting at age 25 and structural heart disease screenings for older adults. The country is also lowering the threshold for prescribing lipid-lowering therapies and expanding telemedicine for chronic heart failure. However, challenges remain in access, reimbursement, and care pathways.[65],[66]

United States

The bipartisan HEARTS Act targets sudden cardiac arrest in young people, particularly student-athletes, through education, risk assessment, and preparedness. This early intervention approach aims to foster healthier hearts across the lifespan, addressing CVD risks from youth to older adulthood.[67],[68]

However, measuring prevention's full economic impact remains challenging, as cost projections typically span just 10 years. The Preventive Health Savings Act seeks to extend this timeframe to 30 years, allowing policymakers to capture the broader long-term benefits of prevention.[69],[70] Continued advocacy and policy advancements are essential to sustaining progress.

Indonesia

Recognizing prevention's cost-effectiveness, Indonesia has expanded public health initiatives, including 8,000 mini community healthcare clinics focused on screening for hypertension, diabetes, and cholesterol.[71] The 2024 Digital Health Blueprint further integrates mobile health applications, while telemedicine platforms like HaloDoc and programs such as SMARThealth are improving access to preventive care in underserved areas.[72]

As Indonesian Health Minister Budi Gunadi Sadikin noted at a public discussion on CVD prevention and screening:

> *"Bankers love numbers, and the numbers tell a powerful story. Countries like Japan and Singapore, which prioritize prevention, achieve longer life expectancy with significantly lower per capita health spending. Here in Indonesia, we've screened 60 million adults for critical health risks like blood pressure, blood sugar, and cholesterol—just the beginning of our 140 million target."*[73]

Indonesia's approach highlights the economic and public health benefits of early detection and management, offering valuable lessons for nations seeking to reduce healthcare costs while improving population health outcomes.

Policy-Driven Solutions for CVD Prevention

Barriers to Prevention

Preventing CVD is hindered by challenges at the individual, provider, systemic, and societal levels, complicating efforts to reduce its burden. Many patients lack awareness of risk factors, struggle with adherence to lifestyle changes or medications, and face financial and logistical barriers to accessing appropriate treatments. These obstacles prevent individuals from effectively managing their condition with the most suitable interventions.[74]

Access barriers extend globally. In Asia, the median availability of generic statins is just 5.4%.[75] In the UK, systemic delays further hamper prevention efforts. By November 2024, roughly 10,000 patients had been waiting over a year for cardiac care, and nearly 40% of those in need of time-sensitive treatment had waited over 18 weeks. These delays can lead to preventable cardiac events and complications.[76],[77]

Healthcare providers also encounter significant constraints, including time limitations, resource shortages, and difficulties in accurately assessing cardiovascular risk.[78] In a national sample of U.S. primary care physicians, only 41% reported calculating CVD risk in clinic, citing time-consuming processes as a primary barrier.[79]

Systemic and societal factors further exacerbate these issues. Limited access to healthy foods, high costs of nutritious options, and workforce shortages create additional barriers to effective prevention.[80] Overcoming these obstacles requires coordinated action, integrating patient education, healthcare system improvements, and evidence-based policy reforms to drive equitable and sustainable prevention strategies.

Opportunities and Policy Actions

CVD prevention presents a major opportunity to strengthen health systems, improve outcomes, and advance global health. Policymakers, governments, and health systems must take proactive steps to integrate prevention into national strategies—emphasizing early detection, equitable access, and innovative solutions that address the social determinants of health (SDOH). This shift requires recognizing prevention as a high-value investment that supports population health, economic stability, and long-term healthcare sustainability. By investing in prevention infrastructure, governments can make considerable progress in reducing the global CVD burden.

National Action Plans (NAPs) for cardiovascular health offer a structured approach to overcoming systemic barriers. By setting clear and measurable targets, defining timelines, and ensuring accountability, these plans drive meaningful change and align resources effectively.[81]

> *"Governments need to lead in tackling the unnecessary and enormous burden of avoidable preventable CVD. Join the call for national CVD plans which set targets, timelines and demand accountability."*
> Neil Johnson, CEO, Global Heart Hub[82]

Key Policy Actions

Expand Access to Prevention, Treatment, and Community-Based Care

- Increase routine screenings, including LDL cholesterol tests, to enable early identification and management of risk factors.[83]
- Ensure timely access to evidence-based treatments, including LDL-lowering therapies. Establish regulatory pathways to streamline access to preventive cardiovascular care and support the availability of innovative treatments when needed.
- Address systemic barriers—such as food insecurity, housing instability, and financial health—by integrating SDOH-focused interventions into patient care.
- Utilize community organizations and local health hubs to deliver preventive education, screenings, and treatment adherence support—improving engagement across diverse populations.

Leverage Innovation for Scalable Solutions

- Expand telemedicine, wearable technology, and AI-driven tools to enhance early detection, facilitate remote care, and address workforce shortages.[84],[85]
- Scale up virtual cardiac rehabilitation, particularly for populations facing access barriers, including women, older adults, and minority groups.
- Strengthen digital health solutions to improve long-term medication adherence and track patient progress, ensuring continuity of care.

Establish Measurable Prevention Metrics

- Develop data-driven benchmarks to track risk factor management, treatment compliance, and reductions in acute CVD events.
- Implement transparent reporting systems to monitor disparities and gaps in care—enabling targeted, evidence-based prevention strategies.
- Align national and global health policy goals with proven prevention outcomes, ensuring accountability and measurable progress.

Foster Integrated, Interdisciplinary Care

- Break down silos by fostering collaboration across care teams —including cardiologists, endocrinologists, geriatricians, neurologists, mental health providers, community health workers, care partners, and patients.
- Embed lifelong cardiovascular care and survivorship models into health systems to ensure seamless transitions between prevention and treatment.[86]
- Establish coordinated patient navigation systems to improve adherence, reduce hospitalizations, and enhance long-term health outcomes.

Call to Action:

Reducing the global CVD burden requires bold, collaborative action. By embedding prevention into national and global health strategies, and implementing well-defined National Action Plans, policymakers can drive measurable progress in cardiovascular health. Investing in prevention strengthens economies, enhances quality of life, and ensures healthcare systems remain resilient in the face of aging populations and rising disease burdens.[87]

Aging with Heart Alliance

The Aging with Heart Alliance convenes a diverse group of experts from around the globe—from CVD, aging and beyond—to align networks, collaborate on messaging, and create urgency for policy changes at the intersection of CVD and aging.

Global Coalition on Aging

The Global Coalition on Aging aims to reshape how global leaders approach and prepare for the 21st century's profound shift in population aging. GCOA uniquely brings together global corporations across industry sectors with common strategic interests in aging populations, a comprehensive and systemic understanding of aging, and an optimistic view of its impact. Through research, public policy analysis, advocacy, and strategic communications, GCOA is advancing innovative solutions and working to ensure global aging is a path for fiscally sustainable economic growth, social value creation and wealth enhancement.

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