

# Women and Cardiovascular Disease

## The Global Burden of Disease

Cardiovascular disease (CVD) includes a range of conditions that involve the heart and blood vessels. Globally, CVDs are the leading cause of death, claiming more than 17.3 million lives each year. Of these deaths, an estimated 8.6 million occur in women.

Several types of illness can be classified as CVD, including:

**Ischemic heart disease:** Caused by decreased blood flow and oxygen to the heart. Also called coronary heart disease and coronary artery disease, this can ultimately lead to myocardial infarction (heart attack).

**Cerebrovascular heart disease:** Caused by decreased blood flow and oxygen to the brain; the most common manifestation is cerebrovascular accident (stroke).

**Hypertensive heart disease:** Caused by the underlying condition of high blood pressure. Left untreated, this can lead to a thickening of the heart muscle and, over time, increases the risk of heart failure.

**Rheumatic heart disease:** A chronic condition, set off by rheumatic fever, which is caused by a preceding group A streptococcal (strep) infection. Rheumatic heart diseases are associated with fibrosis of the heart valves and can cause valves to undergo stenosis (narrowing), regurgitation (leaking) or prolapse (inability to close).

The majority of CVDs are preventable through reduction in behavioral risk factors, including **physical inactivity, tobacco use, obesity/ overweight, harmful alcohol use** and **poor diet**. CVD risk factors affect both genders indiscriminately and women in both low- and middle-income countries (LMICs), as well as high-income countries, are increasingly exposed to these risk factors. Though they are all modifiable, current efforts and programs to address behavioral risk factors have yet to slow the rising numbers of women suffering from CVD.

Further, women who suffer from CVD early in life are statistically more likely to die from their disease than men of the same age. Several risk factors for CVD are female-specific, such as preeclampsia during pregnancy. Evidence suggests women who experience preeclampsia during pregnancy are at a greater risk of developing hypertension and heart disease later in life.

Studies indicate that the incidence and severity of CVDs can be further compounded by environmental factors, such as exposure to high levels of air pollution. While behavioral risks are modifiable, in reality, many women have limited choices around their diet, mobility and environmental exposure at home and at work. Women—who are traditionally responsible for cooking in much of the world—are often exposed to pulmonary toxins from indoor cooking stoves in unventilated spaces, which can significantly jeopardize their cardiovascular health.

The diversity and severity of these illnesses contribute to the immense burden of CVDs on health systems, as the symptoms and treatment options for each individual disease can vary dramatically. The socio-economic

impact of CVD-related deaths is enormous. The World Health Organization (WHO) anticipates the cumulative global cost of CVD and other non-communicable diseases (NCDs) will reach USD 7 trillion between 2011-2025, without dramatic interventions. There are vast regional disparities in the burden of CVDs; more than 80% of premature deaths from CVD occur in LMICs.

## **The Current Situation**

Over the last fifteen years, the global health agenda has been significantly shaped by the Millennium Development Goals (MDGs), launched in 2000 to prioritize pressing global development issues between 2000-2015. Critically, NCD indicators were not included in the eight MDGs. As a result, NCDs—and the growing CVD epidemic—has received insufficient funding, research and awareness for much of the twenty-first century.

However, NCDs are receiving increasing attention nationally and globally and will likely be incorporated into the post-2015 development framework. CVD awareness is increasingly informing health policies, such as the WHO Framework Convention on Tobacco Control (FCTC). Recently, there have been a number of successful and encouraging initiatives in CVD prevention, awareness, screening and treatment for women, including in LMICs, including:

### **Prevention**

The Global Alliance for Clean Cookstoves (GACC) seeks to ensure clean cookstoves are produced and accessible in developing countries. The goal of the GACC is for 100 million households to have clean and effective cookstoves and fuels by the year 2020. The GACC educates women and communities in LMICs on measures they can take to make their cooking ‘cleaner’ (e.g. by installing chimneys, using retained heat cookers and implementing adequate household ventilation) and champions their mission at both global and national levels, using celebrity endorsers and community awareness programs to educate people about the correlations between poor cooking facilities, gender and CVD. Further, the GACC seeks to expand production and access to clean cookstoves by addressing market barriers through public-private collaborations.

### **Awareness**

The World Heart Federation and the American Heart Association’s joint campaign “Go Red for Women” has gone far to dispel gender-based myths that CVDs are primarily a threat to men and to greatly increase global awareness of CVD in women. The campaign’s key symbol is a woman in a red dress, which is intended to raise awareness of the impact of heart disease on women. The symbol of the red dress has been adopted in many countries as an engaging aesthetic link between women and heart disease. The campaign supports research, education and community support programs to improve women’s heart-health in both developing and further developed nations. More than 50 countries worldwide have adopted the campaign in order to increase awareness, expand resources and provide financial and medical support to women struggling with CVD.

### **Screening and Treatment**

In Uganda, Case Western Reserve University—with support from medical device developer Medtronic—has leveraged existing HIV healthcare infrastructure to serve women and men suffering from rheumatic heart disease (RHD). Most prevalent in sub-Saharan Africa, RHD is caused by a bacterial infection, which, left untreated or improperly treated by antibiotics, can fatally damage the heart’s valves. By building on existing relationships with AIDS programs, RHD clinics in Uganda have now linked with local HIV clinics and been invited to share resources, including inter alia: a catheterization laboratory; vital diagnostic machines and treatment equipment; staff time; and transport. The outcomes have been positive; a registry-based system has been established for RHD patients based on an existing HIV model, and a rural delivery system for basic medications—such as penicillin—is now operative. To date, the collaboration has enabled over 1,000 children to be screened for RHD, and over 600 people are participating in the registry. This system pre-empts and relieves much of the RHD care-burden for women in the area, as women remain the primary caregivers for children and adults in Uganda. Though there was some initial reticence from patients about the cultural stigma of being treated in an HIV clinic, this has been outweighed by the generally positive reception of the partnership. Its ambitious plans for future development include a patient-centered mHealth program (a healthcare initiative supported by mobile phone devices) with a focus on RHD.

## What Can Be Done

While there is clear progress being made in CVD advocacy and prevention nationally and globally, these efforts remain insufficient and uneven. A significant expansion in awareness, resources and integration with other health sectors is required to sufficiently address the CVD epidemic in women. It is critical for the NCD community to expand its response beyond the health domain, to coordinate with other sectors including agriculture, education and trade.

While global advocacy efforts have increasingly called on women to be more aware of their cardiovascular health, more information and resources are required to effectively address the CVD epidemic in women. There are important opportunities to align women's CVD prevention and treatment with existing health services for women. For many women in LMICs, their only visit to the doctor is during pregnancy. Equipping maternal and child health clinics with educational materials on CVD risk factors could expand the number of women reached with critical information on risk factors and lifestyle choices, which could go far to promote cardiovascular health among women.

School children are another important population to target. Incorporating education on CVD risk early on in a woman's life will improve her ability to identify her own cardiovascular risk and the impact of lifestyle choices. Additionally, basic reforms on physical activity in schools should be addressed in order to reduce gender-inequity. Several LMICs report that boys are more likely to be physically active for 60 minutes per school day than girls.

## Conclusion

Though CVD threatens populations in high-income countries, the vast majority of premature cardiovascular deaths and disabilities are concentrated in LMICs. The significant regional disparities in the CVD death and disability burden, mirrors inequities in health access globally. In low-resource settings, where there is limited health infrastructure and human resource capacity, individuals often lack access to early and regular screening or standardized treatment for CVD and other NCDs. Consequently, in LMICs, CVD is often detected later in the course of the disease, which increases the likelihood of dying younger.

The loss of productivity, combined with out-of pocket expenses, can be catastrophic for families and further prolong cycles of poverty and poor health. Beyond the enormous impact CVDs are having on individuals, families and communities, in many countries, there is also the staggering financial burden and loss of productivity at the national level.

If we are to effectively reduce CVD mortality and morbidity in women, our efforts must extend beyond the tools and strategies outlined in Appendix 3 of the Global Action Plan for the Prevention and Control of NCDs 2013-2020. We must secure and sustain an enabling policy environment that is receptive to the complex and pressing needs of women with CVD. It is crucial to address the root causes of CVDs, which will require a multi-sectoral approach, drawing on integrated strategies and tools.

Above all, concerted action is needed to dispel the myth that CVD is a man's disease. As the number one killer of women, far greater research, resources and education must be directed toward CVD risk reduction, early screening and treatment of women in all settings.

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*The Task Force on Women and NCDs* seeks to respond to the unique and growing burden of non-communicable diseases on women in low and middle income countries (LMICs) by mobilizing leadership, expanding technical expertise and disseminating evidence to inform policymaking, planning and services. The Task Force seeks to inform its partner organizations, local and national governments, and leaders within the health community about the important role of NCDs in women's health. Together, we can improve health outcomes for women.

