THE HEART AND STROKE FOUNDATION SOUTH AFRICA

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Press Release 25 August 2025

The Heart and Stroke Foundation Gearing up to Commemorate Heart Awareness Month

Annually in South Africa, September is an auspicious month for heart health. The colour red is everywhere and very symbolic of matters of the heart. The public at large is very supportive of Heart Awareness Month (HAM) due to the fact that heart disease and the associated risk factors affects many South Africans and people around the globe. At the Heart and Stroke Foundation South Africa (HSFSA), we believe that every heartbeat counts and hence we mobilize with our local and global partners and donors to raise the profile of this devastating but preventable condition. HAM is one of the key awareness campaigns at the Foundation, focussing on knowledge dissemination, awareness raising and other health promotion and disease prevention initiatives. The month-long campaign will culminate on World Heart Day (WHD) on September 29th, with the global theme, "Don't Miss a Beat," developed by the World Heart Federation (WHF) and its membership. The HSFSA is a proud member of the WHF.

Cardiovascular disease (CVDs), remain the leading cause of death and disability in the country and globally. However, most CVDs can be prevented by addressing modifiable risk factors such as tobacco use, unhealthy diet, physical inactivity, and air pollution. Early detection enables timely management with counseling for further prevention and treatment regimens. Additionally, CVDs, including blocked arteries, heart valve disease, arrhythmias, and others, may require cardiothoracic interventions. These surgical interventions in the most part could have been avoided by early detection and behaviour modification. This can be implemented by adapting healthy behaviours from an early age and being consistent with these health behaviours throughout the life course, and knowing your family history. This HAM, the HSFSA highlights how cardiothoracic surgery plays a leading role in forming a critical part of the treatment regimen for heart defects and structural inefficiencies of the organ. The Foundation will also highlight policy frameworks on CVD reduction, prevention strategies and treatment for CVD this September.

Prof Pamela Naidoo, CEO of the HSFSA states that as a part of HAM this September, the Foundation is also drawing attention to the impact of the upcoming United Nations High-Level Meeting on NCDs, taking place on 25 September, which emphasizes the urgent need for global action on cardiovascular health. As NCDs are among the world's leading causes of death, disability, healthcare costs, and a major contributor to CVD, this high-level meeting intends to promote global multi-sectoral collaboration and a re-emphasis on NCD reduction strategies, securing sustainable financing, and equitable access to health services and technologies. This would be a pivotal point in the reduction of the CVD burden in South Africa and globally. Over the next four-week period, we will be discussing key related themes under the following headings: **Week 1** - Burden of Cardiovascular disease, **Week 2** - Cardiothoracic interventions, **Week 3** - The role of the Multidisciplinary Team before and after surgery, and lastly **Week 4** - Cumulative Risk factors for cardiovascular disease.

Week 1: Burden of cardiovascular disease

This week the HSFSA is exploring the patterns and impacts of CVD, and also highlighting how and why women's experience of heart disease can differ from men's. According to the World Health Organization, CVDs are the leading cause of death globally, accounting for approximately 32% of all deaths, with 19.8 million lives lost in 2022. Notably, 85% of these deaths were due to heart attacks and strokes, with over three-quarters occurring

in low- and middle-income countries (LMICs). CVDs also caused at least 38% of premature deaths (under 70) due to noncommunicable diseases in 2021.

CVD disproportionately affects women, yet remains underdiagnosed and undertreated in female populations. Women often present with atypical symptoms (e.g. fatigue, nausea, or back pain), which leads to delayed or missed diagnoses of cardiac conditions. Hormonal changes, especially during menopause, and pregnancy-related conditions like preeclampsia and gestational diabetes further increase women's lifetime risk of CVD. Women particularly face cardiovascular risks linked to hormonal and reproductive factors. These include Polycystic Ovary Syndrome (PCOS), the use of combined oral contraceptives, menopause, and some forms of Hormone Replacement Therapy (HRT). PCOS is associated with metabolic problems such as insulin resistance, excess weight, and abnormal cholesterol levels, which can raise heart disease risk. Combined oral contraceptives may slightly increase the likelihood of blood clots, stroke, or heart attack, particularly in women over 35, those who smoke, or those with high blood pressure. Menopause can lead to higher cholesterol, increased blood pressure, and central weight gain. The effect of HRT on heart health varies, with greater risks seen in older women or those with existing cardiovascular disease.

Statistics South Africa reports that those of Indian origin, other Asian (e.g. Chinese) and Black African men had the highest death rates from CVD. Similarly, Black African women had the highest rate among women. These groups are disproportionately affected by CVD due to a complex interplay of genetic, behaviour and socioeconomic factors. Despite the high disease burden, women are less likely to receive diagnostic tests or surgical interventions, and they may have worse surgical outcomes, particularly in older age.

According to an article published by Vervoort et al., 2024, on "Global Cardiac Surgical Volume and Gaps: Trends, Targets, and Way Forward," over 1 million children are born with congenital heart defects in LMICs annually, with more than 90% lacking access to necessary cardiovascular care. The study highlights significant gaps in cardiac surgical care, estimating that 1-1.5 million cardiac surgical procedures occur yearly, with substantial disparities in procedure volumes between high-income countries (123.2 procedures per 100,000 population) and LMICs, which require targeted volumes ranging from 40.2 to 86.1 procedures per 100,000 population, depending on income level and CVD burden.

CVD risk is significantly influenced by diet and environmental factors. An article published by Silwa et al., 2024, found that in low- and middle-income countries, socioeconomic constraints and climate change limit access to nutritious food, increasing the risk of heart disease. Adopting Westernized diets high in processed foods and sugar further exacerbates this issue. To mitigate CVD risk, it's essential to develop locally sensitive dietary guidelines, promote diversified food systems, and support research on sustainable agriculture and environmental health. Collective action from clinicians, policymakers, and individuals is crucial to address pollution, climate change, and CVD risk, ensuring a healthier future.

These realities remind us that heart disease doesn't affect everyone in the same way — and too often, women's symptoms go unnoticed or untreated.

Week 2: Cardiothoracic interventions

This week, we shine the spotlight on cardiothoracic interventions, a complex and dynamic field that is transforming the way we treat heart and lung diseases. From pioneering surgical techniques to innovative patient care, cardiothoracic surgeons are at the forefront of medical advancements, delivering life-changing results and improving outcomes for patients worldwide. Cardiothoracic intervention or surgery is usually considered when heart disease or related conditions cannot be managed with medication or less invasive

procedures alone. This can include conditions like severe blockages in the heart's arteries, damaged heart valves, birth defects of the heart, or serious conditions of the lungs and chest. In South Africa, patients generally begin their journey at a local clinic or with their general practitioner (GP). They will do basic checks, like blood pressure, blood tests, or an Electrocardiogram (ECG). If they suspect a more serious problem, they will refer you to a heart specialist (cardiologist). The cardiologist runs more detailed tests, such as scans or an angiogram, to see exactly what is going on. Should surgical intervention be required, the cardiologist will refer the patient to a cardiothoracic surgeon. Following this pathway step by step ensures you get the right care from the right people at the right time.

Cardiothoracic surgery is a complex and specialized field that treats diseases of the heart, lungs, and thorax, offering life-changing treatment options for a wide range of conditions. This field includes operations such as coronary artery bypass grafting, heart valve repair, lung cancer surgery, and esophageal surgery, as well as interventions like coronary angioplasty, stenting, heart transplant, and transmyocardial revascularization. By targeting the heart and thoracic cavity, these procedures aim to diagnose and treat conditions like coronary artery disease, heart failure, and valvular heart disease, ultimately restoring blood flow, alleviating chest pain, and improving heart function to enhance patient outcomes and quality of life. Professor Pamela Naidoo, CEO of the Heart and Stroke Foundation South Africa, emphasizes that cardiothoracic interventions are life-saving procedures that can transform the lives of patients with heart disease. 'Let's support research and innovation to improve treatment options and reduce the burden of heart disease in our communities,' she urges. With cardiovascular disease claiming millions of lives globally, it's crucial that we prioritize evidence-based solutions and promote healthy lifestyles to mitigate this growing health concern.

By restoring function and improving patient outcomes, cardiothoracic surgeons play a vital role in managing cardiovascular disease, lung disease, and thoracic trauma, transforming lives through precise and innovative surgical care. Cardiac surgery can be a complex and challenging procedure, often resulting in inflammation and complications. Particular care is required in preparing the patient for cardiothoracic interventions, which the multidisciplinary team (MDT) provides in their respective disciplines. This also includes discussing various surgical options with the patient, including bypass surgery, stents, or even heart transplant surgery.

Heart transplants are highly specialised treatment options that remain largely inaccessible in South Africa and many LMICs due to limited infrastructure, scarcity of organ donors and high costs. An abstract from an article by the American Heart Association released on the 4th of April 2025 read, 'In 2020, over 7000 heart transplants were performed globally, 90% of heart transplants were performed in the United States and Western Europe, with only 10% throughout the rest of the world.' With the first heart transplant having been performed in South Africa by Dr Christian Barnard at Groote Schuur Hospital in 1967 you would expect Africa to be leading in terms of heart transplants and developments in cardiac surgical interventions. We are unfortunately at a great disadvantage, with a lot of groundwork still needed to be done. A big part of the work is to highlight the importance of organ donation in our communities.

Signing up for organ donation is crucial for cardiothoracic interventions, as it can provide life-saving opportunities for patients in need of heart and lung transplants. With a global shortage of suitable donor organs, registering to donate can help bridge this gap and give patients a second chance at life. By registering, individuals can potentially save or transform the life of someone awaiting a cardiothoracic transplant.

Week 3: The Role of the Multi-disciplinary Health Practitioner Team before and after surgery

A team of different healthcare professionals work together to provide the best care for patients, especially when surgery is needed. Usually, before surgery, cardiologists, cardiothoracic surgeons, anesthesiologists, and nurses assess the patient's overall health and suitability for surgery. Cardiologists diagnose and treat heart conditions, prescribe medications, and perform tests like echocardiograms, a test that uses sound waves to

create images of the heart. It allows doctors to see the heart's structure and function, check blood flow, and identify any potential problems, such as valve issues or abnormal heart rhythms. Cardiothoracic surgeons perform surgeries on the heart, lungs, and chest, such as bypass surgeries, heart transplants, and valve repairs. Anesthesiologists administer anesthesia and monitor patients' vital signs during surgery to ensure their safety and comfort. Nurses provide direct patient care, monitor vital signs, administer medications, and educate patients and families about heart health.

The MDT has a specific role in cardiothoracic interventions. Especially in respect to patient education long before the surgery is to take place. For instance, smoking can significantly impair recovery from surgery, increasing the risk of serious complications such as wound infections, pneumonia, heart attack, and stroke. Quitting smoking, even shortly before surgery, can be beneficial and lead to improved outcomes. Healthcare professionals emphasize that smoking cessation is a crucial opportunity for patient education and can make a significant difference in patient care. By understanding the risks associated with cardiac surgery and adopting heart-healthy behaviours, patients can reduce their risk of future complications and promote overall cardiovascular well-being.

After surgery, the rehabilitation team plays a vital role in helping the patient recover optimally. This team typically includes professionals like physiotherapists, occupational therapists, dietitians, psychologists and nurses. Physiotherapists help patients regain strength, mobility, and functional abilities after surgery or a cardiac event. Physical inactivity affects up to 50% of patients after cardiac surgery, leading to muscle weakness and reduced functional capacity. Despite the benefits of cardiac rehabilitation, it remains underutilized. However, strategies like prehabilitation, early mobilization, and personalized exercise programs can improve outcomes. Technology, including artificial intelligence and telemedicine, can enhance adherence and compliance, reducing hospital readmissions and healthcare costs, ultimately improving patient outcomes and quality of life. Occupational therapists assist patients in adapting to daily activities while living with heart conditions.

Malnutrition is a significant concern for cardiac surgery patients, affecting up to 70% of hospitalized patients. Research shows that poor nutrition can lead to increased complications, delayed recovery, and a higher risk of mortality. Registered Dietitians Ms. Shonisani Nephalama and Ms. Cari Erasmus of the Heart and Stroke Foundation South Africa emphasizes the vital role of nutrition in heart health. 'As part of the multidisciplinary team, Dietitians play a crucial role in providing personalized nutrition counseling and support to patients before and after cardiothoracic surgery. By tailoring nutrition plans to individual needs, we can help optimize patient outcomes, reduce complications, and support overall heart health. Our expertise enables patients to make informed choices about their diet, empowering them to take control of their heart well-being’. Early cardiac rehabilitation, including nutritional support, is crucial for promoting recovery, preventing complications, and improving quality of life. Surgery can worsen nutritional status due to catabolic reactions and decreased dietary intake. Studies show patients often don't meet energy needs post-surgery, leading to chronic malnutrition and increased mortality. Nutrition screening is essential to identify and optimize malnourished patients, reducing the risk of complications and improving recovery. A well-nourished patient is better equipped to withstand the stress of surgery and achieve optimal health outcomes. Additionally, studies have shown that certain nutrients, such as omega-3 fatty acids and antioxidants, may help reduce inflammation and promote recovery. For critically ill cardiac patients, a healthy diet is crucial, focusing on low carbohydrate, low salt, and low saturated fat intake, with an emphasis on fresh fruits and vegetables rich in vitamins, fiber, and minerals. Omega-3 and Omega-6 fatty acids from sources like oily fish, nuts, and seeds are beneficial. Moderate fat intake (under 30% of total energy intake) and limited saturated fat (under 10% of total energy) are recommended. Adequate protein intake is also essential, particularly for thoracic patients, to support lung function, fight infection, and maintain nutritional status, with a goal of eating at least 5 servings of fruits and vegetables daily to support overall health. A Mediterranean-style cardioprotective diet, rich in fruits, vegetables, and healthy fats, combined with effective weight management, are key components of this approach.

Additionally, mental health practitioners can support the mental health and overall well-being of cardiac patients. They help patients cope with anxiety, depression, and stress related to their condition, surgery, or recovery. Through counseling and therapy, psychologists help patients to manage their emotions, develop coping strategies, and improve their overall quality of life. After cardiothoracic surgery, patients need attentive and compassionate care to support their recovery. Nurses play a vital role in helping manage pain, keeping a close eye on vital signs, and watching for any early signs of complications like infection or breathing problems. They also encourage patients to start moving around as soon as it's safe, assist with breathing exercises to keep the lungs healthy, and take care of chest drains if needed. Just as importantly, nurses offer reassurance during what can be a very stressful time and guide both patients and families through wound care and behavioural changes that support healing and prevent future issues.

Ultimately, each member of the MDT plays a significant role in the health outcome of patients before and after cardiothoracic surgery.

Week 4: Cumulative Risk:

Understanding the cumulative risk of CVDs and how to prevent it, is the most crucial aspect towards the reduction of the burden of CVD in South Africa and beyond. During week 4 of HAM, the HSFSA will highlight how cumulative risk factors contribute to CVD, and emphasise the importance of accurate, evidence-based research in addressing misinformation in a society where conflicting health advice is widespread. The Foundation highlights risks every year given the fact that the modifiable and unmodifiable risks for CVD remains constant, despite the fact that other factors, such as environmental air pollution, are being increasingly recognized. The Foundation's health risk assessment data from 4510 participants, showed that about 26% and 48% of participants were overweight and obese respectively, while 57.6% had blood sugar levels higher than normal. Even more concerning, only 32% of adults screened had normal blood pressure readings, meaning that around 68% had abnormal or high blood pressure at the time of their assessments. Sister Juandre Watson, Health Promotion and Health Risk Assessment Team Lead, emphasised that these results clearly show just how widespread the risk factors for heart disease are within our communities.

While individual risk factors such as high blood pressure or cholesterol are well-known, the concept of cumulative risk refers to the combined effect of multiple**,** often interrelated risk factors that together increase the likelihood of developing CVD. These factors include: High blood pressure, high LDL cholesterol, smoking tobacco products, diabetes, obesity, physical inactivity, an unhealthy diet, chronic stress, excessive alcohol consumption, and a family history of heart disease. The danger lies not just in the presence of one factor, but in how multiple risk factors interact and amplify each other over time. For example, lack of physical inactivity and unhealthy eating habits can lead to obesity and increase the risk of hypertension and diabetes which are both strong predictors of cardiovascular events like heart attacks or strokes. Moreover, having a family history of cardiac conditions increases one's risk in the presence of raised hypertension, raised cholesterol and so on.

On the positive side, CVD is largely preventable as up to 80% of premature heart attacks and strokes can be prevented through the uptake of healthy behaviours. Maintaining a healthy diet, physical activity and cessation of smoking and alcohol, can greatly reduce one's risk of heart disease and reduce disease progression. CVD doesn't appear overnight but develops silently and progressively, shaped by years of accumulated risk factors. Prevention is not just about treating individual issues, but about addressing the entire risk profile early and consistently. A proactive approach that is supported by personal, clinical, and societal interventions offers the best chance at CVD prevention.

Numerous scientists, epidemiologists, and researchers have studied these cumulative risk factors to understand their impact on cardiovascular health. Evidence-based research highlights the key behaviours and

risk factors that need to be addressed to promote good health. Guidelines from reputable health organizations provide a foundation for prevention and treatment, and these guidelines are expected to evolve as new evidence emerges. Evidence is supported by data which is collected at the point of care. While data can drive effective interventions, unreported diseases leave the country unable to address issues that remain largely invisible. Nevertheless, mortality and death rates clearly indicate the significant burden posed by NCDs. This underscores the urgent need for strengthened data collection and reporting systems to inform policy and public health research. This is the reason that the HSFSA follows evidence-based programmes and collects data to facilitate the understanding of the burden of disease.

Let's focus on educating patients about healthy lifestyles and supporting them throughout their treatment journey. As we observe HAM, the HSFSA encourages all South Africans to learn more about the unique risks we all face and to seek help early. Everyone deserves access to the care they need, no matter where they live or who they are. Together, by raising awareness and pushing for change, we can help turn the tide on heart disease. Let's use this month to shine a spotlight on the power of prevention, the importance of early detection and the unwavering hope for a future where heart disease and strokes no longer claim lives prematurely. Together, we can make a lasting impact on our communities, one healthy choice at a time.

For media enquiries, please contact Themba Mzondi, PR and Communications Officer on 021 422 1586 / 078 113 5216 or email: themba.mzondi@heartfoundation.co.za. Media engagements will be carried out by the CEO, Health Promotion Officers and Allied Health Care staff, such as Dietitians.

About the Heart and Stroke Foundation SA

The Heart and Stroke Foundation South Africa (HSFSA) plays a leading role in the fight against preventable heart disease and stroke, with the aim of seeing fewer people in South Africa suffer premature deaths and disabilities. The HSFSA, established in 1980 is a non-governmental, non-profit organization which relies on external funding to sustain the work it carries out.

The HSFSA aims to reduce the cardiovascular disease (CVD) burden in South Africa and ultimately on the health care system of South Africa. Our mission is to empower people in South Africa to adopt healthy behaviours, make healthy choices easier, seek appropriate care and encourage prevention.

For more information visit www.heartfoundation.co.za. You can also find us on www.facebook.com/HeartStrokeSA and www.twitter.com/SAHeartStroke