MARCH 2021

CHOLESTEROL MANAGEMENT IN SOUTH AFRICA

ACCESS AND POLICY GOALS





INTRODUCTION

Every day, 210 South Africans die from cardiovascular disease.

It is, in fact, the second leading cause of mortality in the country.¹

Several factors contribute to the high prevalence. Poor diet and sedentary lifestyle, for example, can lead to hypertension and diabetes. Both are risk factors for cardiovascular disease.²

Another factor is high LDL, or "bad," cholesterol, which can lead to a heart attack or stroke.³

But high cholesterol is often under-recognised in South Africa. Health care providers, policymakers or the general public may misunderstand or even dismiss high cholesterol as a disease that affects only white males.⁴

Meanwhile, cholesterol screening and management guidelines are inconsistent.

Guidelines published by the South African National Department of Health inform public and private health insurer decisions. Yet these guidelines are outdated. They do not align with updated recommendations from the South African Heart Association, the Lipid and Atherosclerosis Society of Southern Africa, and the globally recognised European Guidelines for the Prevention of Cardiovascular Disease.^{5,6}

As a result, significant gaps in care befall South African patients. Lack of awareness delays the diagnosis of high cholesterol. Patients who do receive a diagnosis may struggle to access lipid-lowering therapies of sufficient intensity, which are underutilised in South Africa. Among the most affected are patients with high LDL cholesterol who have established cardiovascular disease or those with familial hypercholesterolaemia, a genetic form of high cholesterol.



PREVALENCE

Little research exists on awareness, drivers and management of high cholesterol in South Africa. A few studies, however, reveal significant unmet needs.



Awareness lags.

Of rural South Africans, 67% met the criteria for high cholesterol. Only 30% of those were aware of their condition, and less than 1% were receiving treatment.⁷



Treatment falls short.

A significant percentage, 67%, of very high-risk cardiovascular patients in South Africa are not reaching the cholesterol goal defined by current global guidelines. Patients come up short despite taking the maximum tolerated statin with or without ezetimibe.⁸



Disparities persist.

In the South African black population at a tertiary hospital in the northern region of Gauteng, more than one-fourth of patients had high cholesterol, and 5% had severe high cholesterol.⁹

These statistics demonstrate that, in South Africa, high cholesterol is common, underdiagnosed, undermanaged and overlooked. These trends are especially strong among Black Africans, the largest population group in the country.



CHOLESTEROL SCREENING

Early cholesterol screening is a key component of cardiovascular risk assessment.¹⁰

The South African Heart Association and the Lipid and Atherosclerosis Society of Southern Africa guidelines recommend that everyone should have their cholesterol screened from the age of 40. People at higher risk of cardiovascular disease, the guidelines advise, should start at age 20.⁵ Recommendations from other public health bodies are more aggressive. The National Heart, Lung and Blood Institute in the United States, for example, recommends universal paediatric screening between ages nine and 11 and again between ages 17 and 21.¹¹

Paediatric screening can identify familial hypercholesterolaemia, or FH, a genetic cause of elevated cholesterol. The disease impacts one in 250 people worldwide, and early detection is critical. Left untreated, FH patients have a 20 times greater risk of premature heart disease than the non-FH population.¹²

Systematic, well-coordinated screening is particularly important for South Africa.

Due to the founder effect, the prevalence of FH is much higher in South African Afrikaners, South African Jews and South African Indians.^{13,14,15} It's important that FH be identified through primary care, with family screening for, at a minimum, first-degree relatives of diagnosed patients. A person with FH has a 50% chance of passing down the condition to his or her children.¹⁶

TREATMENT GUIDELINES

To ensure standardised care, especially in primary health care facilities, guidelines that are up-to-date and evidence-based should be implemented across the country. But South Africa has progress to make in this area. The National Department of Health guidelines do not align with guidelines from the South African Heart Association and Lipid and Atherosclerosis Society of Southern Africa.

That's especially problematic because, in South Africa, the National Department of Health informs clinical practice for the public health sector. Current National Department of Health guidance in The Essential Drug List Standard Treatment Guidelines for Primary Care and Primary Care 101 offers an important example. These documents recommend that all patients at high risk for cardiovascular disease receive life-long treatment with a lowdose statin, even though affordable generic statins of higher potency are available.

The recommendation also applies a onesize-fits-all approach that fails to adequately consider patients' baseline LDL cholesterol levels without medication. For many patients with severely high LDL cholesterol, such as people with familial hypercholesterolaemia, a low dose statin is insufficient.

Similarly, patients with established cardiovascular disease, who are very high risk and should reduce their LDL cholesterol from baseline by at least 50%, generally require a high-intensity statin.

Additional lipid-lowering therapies, such as ezetimibe or PCSK9 inhibitors, should also be accessible to patients who require more aggressive treatment or have a demonstrated history of statin-associated side effects. South Africa's National Department of Health guidelines do not, however, allow for this sort of treatment personalisation.

Furthermore, lipid-lowering treatment regimens are often left unaltered after initiation. Cholesterol management, however, is lifelong. Lipid measurement and lipidlowering medication dose adjustments should be incorporated into standard treatment guidelines.⁶

National Department of Health		South African Heart Association and Lipid and Atherosclerosis Society of Southern Africa
Recommends low-dose statins only	Treatment Options	Allows for high-intensity statins and other lipid-lowering medications
Applies same statin recommendation to all high-risk cardiovascular patients	Personalised Medication Regimen	Allows for personalised treatment decisions based on patient's LDL baseline and diagnosis
Leaves treatment regimens unaltered	Treatment Flexibility	Allows for updating dose and treatment as needed over patient's lifetime

ACCESS TO TREATMENT & SPECIALTY CARE

South Africa also faces a shortage of cardiovascular specialists.

There are fewer than 200 cardiologists practicing for the country's population of 59 million people. Only 35 of these specialists work in the public sector. In the case of high cholesterol, there are only a handful of lipidologists. Meanwhile, newly qualified cardiologists are often deterred from practicing in the public sector due to outdated public service facilities, a lack of suitable posts, and a lack of infrastructure and equipment.

With cardiovascular disease constituting a major epidemic in the country, this shortage presents real challenges.

Meanwhile, access to medicine differs dramatically between the private and public health sectors in South Africa.

The private sector, for those who can afford it, provides greater access to specialists, additional treatment options besides lowdose statins, and overall, advanced care. Privately insured patients do, however, often face financial constraints depending on the reimbursement policies and benefits decided by their health insurer, or medical aid scheme.

The public sector works differently. Access to medicine is defined by the National Essential Medicines List, which is based on quality, safety, efficacy and cost. Currently, 84%, or 48 million people, have no medical insurance and rely on South Africa's public health system.¹⁷ This means millions of high-risk cardiovascular patients have limited treatment options, are undermanaged, and find themselves unable to access specialty care.

South Africa is, however, transitioning towards universal health care coverage in the form of National Health Insurance. Phased implementation of National Health Insurance is expected to take place by the year 2026 with the aim of bridging the gap between public and private health care. Strengthening the capacity and services of primary health care, especially in rural parts of South Africa, will boost early identification and detection efforts for cardiovascular disease as well as for other non-communicable diseases.



POLICY RECOMMENDATIONS

Inadequate screening, outdated guidelines and barriers to treatment prevent South Africa from meeting the challenges of widespread cardiovascular disease. To improve care and public health, policymakers can:



Promote early identification and implement systematic and comprehensive screening measures to include LDL and HDL levels.

Prevention and risk management is critical for improving cardiovascular health.



Encourage timely and optimal LDL cholesterol-lowering treatment initiation.

Patients should pursue predefined LDL targets determined by their health care provider in accordance with updated guidelines.



Support additional research.

More research is needed to fully capture the cardiovascular landscape in South Africa. The results of that research could help mitigate the disease and its risk factors, track progress and assess gaps in care.

4

Increase awareness of standard treatment guidelines.

The South African Heart Association and Lipid and Atherosclerosis Society of Southern Africa published a consensus guide to manage high cholesterol in South Africa based on the updated European Guidelines for the Prevention and Management of Cardiovascular Disease. Widespread awareness of these updated guidelines among primary care providers and integration of these recommendations into the National Department of Health's primary care clinical practice guidelines is critical.



Improve access to treatment and specialty care.

To support a well-integrated system, policymakers will need to work with clinician experts to ensure that guidelines and therapeutic access support the needs of high-risk patient populations who require tailored approaches to care.



Apply a multi-pronged approach.

Advocacy, by uniting the voices of patients, providers, and researchers, bridges the gaps between science and policy and catalyses policy changes to address unmet needs in patient-centred care.



CONCLUSION

South Africa faces many health challenges with a growing population of people with cardiovascular disease. Primary prevention is the greatest opportunity to reduce the burden of cardiovascular disease. Early detection, prevention and optimal treatment of key risk factors, especially elevated LDL cholesterol, is critical.

This policy brief reflects discussion from a November 2020 meeting of the Global Alliance for Patient Access South Africa Cardiovascular Disease Working Group. This group represents the perspectives of cardiovascular disease experts, lipidologists, scientific society leaders, academics, advocacy groups and people impacted by high cholesterol in South Africa.

South Africa Cardiovascular Disease Working Group

Prof. Dirk Blom Dr. Blanche Cupido Dr. Farai Dube Kelly Du Plessis Prof. Eric Klug

Prof. David Marais Geoff Melman Dr. Phillip Mills Prof. Pamela Naidoo Prof. Frederick Raal

REFERENCES

- Mortality and causes of death in South Africa, 2014: Findings from death notification / Statistics South Africa. Pretoria: Statistics South Africa, 2015.
- Lakka TA, Bouchard C. Physical activity, obesity and cardiovascular diseases. Handb Exp Pharmacol 2005;(170):137-63. doi: 10.1007/3-540-27661-0_4. PMID: 16596798.
- Brown, Michael S., and Joseph L. Goldstein. How LDL Receptors Influence Cholesterol and Atherosclerosis. Scientific American 1984; 251(5):58-69. www.jstor.org/ stable/24969478.
- Shisana O, Labadarios D, Rehle T, Simbayi L, Zuma K, Dhansay A, et al. South African National Health and Nutrition Examination Survey (SANHANES-1). Cape Town: Health Sciences Research Council, 2013.
- Klug E, Raal FJ, Marais AD, Smuts CM, Schamroth C, Jankelow D, Blom DJ, Webb DA. South African dyslipidaemia guideline consensus statement: 2018 update A joint statement from the South African Heart Association (SA Heart) and the Lipid and Atherosclerosis Society of Southern Africa (LASSA). S Afr Med J 2018 Oct 26;108(11b):973-1000. PMID: 30421699.
- Reiner Ž, Catapano AL, De Backer G, et al, for the Task Force for the management of dyslipidaemias of the European Society for Cardiology (ESC) and the European Atherosclerosis Society (EAS). ESC/ EAS guidelines for the management of dyslipidaemias. Eur Heart J 2011;32:1769-1818. https://doi. org/10.1093/eurheartj/ehr158.
- Reiger S, Jardim TV, Abrahams-Gessel S, et al. Awareness, treatment, and control of dyslipidaemia in rural South Africa: The HAALSI (Health and Aging in Africa: A Longitudinal Study of an INDEPTH Community in South Africa) study. PLOS ONE 2017; 12(10):e0187347. https://doi.org/10.1371/journal. pone.0187347.
- Blom DJ, Ranjith N, Joshi P, et al. The therapeutic management of South African dyslipidaemic patients at very high cardiovascular risk (CARDIO TRACK): a cross-sectional study. Cardiovasc J Afr 2020;31(5):245-251. doi:10.5830/CVJA-2020-010.

- Khine AA, Marais DA. High prevalence of primary dyslipidaemia in black South African patients at a tertiary hospital in northern Gauteng, South Africa. S Afr Med J 2016;106(7):724-729. https://doi. org/10.7196/SAMJ.2016.v106i7.10337.
- Gooding HC, de Ferranti SD. Cardiovascular risk assessment and cholesterol management in adolescents: getting to the heart of the matter. Curr Opin Pediatr 2010;22(4):398-404. doi:10.1097/ MOP.0b013e32833a6e22.
- Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents; National Heart, Lunch, and Blood Institute. Expert panel on integrated guidelines for cardiovascular health and risk reduction in children and adolescents: summary report. Pediatrics 2011;128 Suppl5(Suppl 5):S213-S256. Doi:10.1542/peds.2009-2107C.
- Knowles J,OB E, Greendale K,Wilemon K,et al. Reducing the burden of disease and death from familial hypercholesterolemia: A call to action. Am Heart J 2014;168:807–811.
- Steyn K, Weight MJ, Dando BR, Christopher KJ, Rossouw JE. The use of low density lipoprotein receptor activity of lymphocytes to determine the prevalence of familial hypercholesterolaemia in a rural South African community. J Med Genet 1989;26:32-6.
- Seftel HC, Baker SG, Jenkins T, Mendelsohn D. Prevalence of familial hypercholesterolemia in Johannesburg Jews. Am J Med Genet 1989;34:5457.
- Rubinsztein DC, Coetzee GA, Marais AD, et al. Identification and properties of the proline664leucine mutant LDL receptor in South Africans of Indian origin. J Lipid Res 1992;33:1647-55.
- Umans-Eckenhausen MA, Defesche JC, Sijbrands EJ, Scheerder RL, Kastelein JJ. Review of first 5 years of screening for familial hypercholesterolaemia in the Netherlands. Lancet 2001;357(9251):165-8. doi: 10.1016/ S0140-6736(00)03587-X. PMID: 11213091.
- 17. Cohen M. How South Africa Plans to Fix an Ailing Health System. Bloomberg. August 14, 2009. Accessed February 1, 2021. https://www.bloomberg.com/news/ articles/2019-08-14/how-south-africa-plans-to-fix-anailing-health-system-quicktake?sref=wVOWEh7n



About the Global Alliance for Patient Access

The Global Alliance for Patient Access is an international platform for health care providers and patient advocates to inform policy dialogue about patient-centered care.

