S Afr J Surg. 2026;64:283-286. Online first
https://doi.org/10.36303/SAJS.05131

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S Afr J Surg
ISSN: 0038-2361 eISSN: 2078-5151
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EDITORIAL

Oesophageal cancer in South Africa: Time for a coordinated national response

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Introduction

Oesophageal cancer in South Africa presents a striking health-system paradox: the populations carrying the greatest burden of disease are often those with the least access to the resources required for its diagnosis, palliation, and definitive treatment. The reasons for this paradox are socioeconomic and geographical.

Oesophageal cancer ranks as the 12th most common cancer in males and the 10th most common cancer in females in South Africa.[1] The socioeconomic circumstances affecting oesophageal cancer in South Africa are rooted in the fact that South Africa has one of the most unequal health systems in the world, due to a two-tiered system consisting of a public sector that treats 84% of the population and a private sector that treats 16%. Oesophageal cancer adds to the burden on the public health system, which is significantly under-resourced, particularly in areas such as the Eastern Cape.[2-5]

The geographical peculiarity associated with oesophageal cancer globally persists in South Africa, which falls within the African oesophageal cancer corridor extending along the eastern coast of Africa from Ethiopia to South Africa.[6] Within South Africa, the burden is uneven, with the Eastern Cape reporting the highest oesophageal cancer incidence and age-standardised mortality rate.[7-10] Squamous cell carcinoma is the predominant histological subtype, accounting for 86% of histologically confirmed cases, compared with 11% for adenocarcinoma and 3% for unspecified cases.[7]

Why this disease occurs with such striking frequency in particular populations and geographical areas, however, remains incompletely understood. Oesophageal squamous cell carcinoma (OSCC) is a multifactorial disease, and tobacco and alcohol exposure, nutritional and dietary factors, environmental exposures and socioeconomic circumstances have all been implicated. Studies from African populations have identified associations with several potentially modifiable exposures, including tobacco, alcohol, combined tobacco and alcohol exposure, dietary factors, poor oral health and consumption of very hot foods or beverages. However, the available evidence is heterogeneous, and no single exposure adequately explains either the geographical distribution or the magnitude of the oesophageal cancer burden across Africa.[11]

The possibility of an underlying genetic contribution is an increasingly important area of investigation. Earlier studies in African populations suggested population-specific genetic associations, although the available evidence was limited by relatively small study populations and a lack of replication.[12] More recently, a genome-wide association study involving African populations identified both shared and potentially African-specific susceptibility loci for OSCC, including variants involving *FAM120A*, *PLCE1*, *CHEK2* and a potential African-specific locus within *MYO1B*.[13] These findings raise the possibility that the unusual geographical distribution of OSCC in Africa reflects complex interactions between inherited susceptibility and environmental, nutritional and behavioural exposures.

The African Esophageal Cancer Consortium (AfrECC) provides an important collaborative platform through which these questions can be investigated. Established to coordinate research into the environmental, lifestyle, genetic and molecular determinants of oesophageal cancer across Africa, AfrECC also aims to identify opportunities for primary prevention, improve early detection and strengthen clinical and research capacity.[14] For South Africa, participation in this research agenda offers an opportunity to investigate the country's unusually high disease burden using larger, geographically diverse populations and harmonised clinical, epidemiological and biological data. The eventual integration of genomic information with detailed information on geography, nutrition, lifestyle and environmental exposures may help identify populations at increased risk and, in time, inform targeted prevention or early-detection strategies. At present, however, these approaches remain investigational and should not be used to

determine an individual's access to diagnostic investigation or treatment.

The prevention agenda should therefore focus pragmatically on reducing established modifiable risks while continuing to investigate those whose contribution remains uncertain. Tobacco and harmful alcohol exposure should remain important targets for public-health intervention, alongside broader measures addressing nutrition, food security and potentially relevant dietary and environmental exposures. Given the current limitations in the evidence, there is insufficient justification for population-wide endoscopic screening for oesophageal cancer in South Africa. Scarce endoscopic resources are likely to have greater immediate impact if directed towards symptomatic patients. Prevention, therefore, should complement rather than compete with efforts to improve early recognition and access to diagnosis.

Despite the apparently high incidence, accurate and reliable data on the disease in South Africa are lacking.[15] A self-perpetuating problem therefore exists whereby lack of resources and knowledge of the disease result in inadequate care, which in turn makes collection and maintenance of reliable data difficult, thereby stunting meaningful clinical research on oesophageal cancer. The result is a vicious cycle of late presentation, delayed diagnosis, suboptimal care, and a lack of data to inform contextually relevant clinical practice guidelines for managing this healthcare crisis more effectively. The ultimate victims of this cycle are the patients, their families, and communities most affected by the disease.

These problems can and should be addressed concurrently. Breaking this cycle requires a multi-pronged approach that addresses multiple problems simultaneously. It is therefore up to clinicians, clinical researchers, community leaders, and policymakers to combine forces to tackle oesophageal cancer in South Africa.

Recognising oesophageal cancer earlier

The fact that oesophageal cancer presents late is well known, but it may be a comparatively bigger problem in South Africa as evidenced by the advanced dysphagia grade, poor performance status and level of malnutrition of patients presenting with oesophageal cancer to institutions in South Africa.[16] The reasons are not only that patients fail to recognise dysphagia as an alarm symptom, but also that healthcare workers don't refer patients complaining of dysphagia for endoscopy timeously.[17] Apart from the obvious effect on prognosis, late presentation results in a patient who is unable to tolerate any form of radical treatment, a fact well known to clinicians faced with these patients.

The key to addressing this problem is to convince the public and primary healthcare personnel that dysphagia is an alarm system requiring prompt referral for endoscopy. This could be done with well-coordinated public health education initiatives emphasising the dangers of dysphagia, especially when accompanied by weight loss. Specific education programmes and in-service training should also be aimed at healthcare workers, especially those at the primary healthcare level. These include traditional healers, local clinics, and district hospitals. Patients with unexplained dysphagia should have timely referral to a facility where endoscopy should be performed, particularly in areas with a high burden of oesophageal cancer. The fact that dysphagia is an alarm symptom cannot be overemphasised, and a simple public-health message to high-incidence areas should be: "Dysphagia = Endoscopy".

Reducing diagnostic delays

The consequences of late presentation of patients with oesophageal cancer in South Africa are exacerbated by delayed diagnosis. Unfortunately, too many patients report that when they present to primary healthcare facilities complaining of dysphagia, they are not immediately referred for endoscopy, but rather given treatment and told to return if symptoms persist.[17,18] This may reflect gaps in healthcare-worker knowledge, who may not be aware that dysphagia is an alarm symptom, but also illustrates the broader structural barriers to timely diagnosis. Even when patients are referred, a lack of endoscopic and/or pathological resources, especially in high-incidence areas, further delays care.[5] In addition, the healthcare system's referral pattern in South Africa often makes it difficult for healthcare workers to ensure timely patient referrals to appropriate facilities, especially in rural areas. The fact that many healthcare facilities are understaffed and/or under-resourced doesn't help.[19,20] Added to this is the problem of unacceptably long waiting times for endoscopy and pathology services central to the diagnosis of cancer in South Africa.[21,22]

Healthcare facilities in high-incidence areas should be adequately equipped with appropriate endoscopy and pathology capacity to ensure timeous diagnosis of oesophageal cancer. While district and other primary healthcare facilities should be able to refer patients with dysphagia appropriately, regional and tertiary facilities should ideally have the capacity to perform endoscopic intervention to manage dysphagia. These interventions should include the ability to safely dilate patients at a minimum and, ideally, to insert self-expanding metal stents. This responsibility should fall on policymakers with the capacity to allocate resources appropriately.

Providing appropriate patient care

Once the diagnosis of oesophageal cancer is made, international guidelines advise staging investigations, some of which are harmonised for resource-constrained environments, like the South African public health sector.[23] But even these harmonised guidelines may prove challenging to adhere to locally due to resource constraints and healthcare inequality.[24] For example, international guidelines recommend staging all patients diagnosed with oesophageal cancer, but whether this is possible, or even appropriate in South Africa is not clear.[23] The purpose of staging is to inform treatment decisions. In patients with very poor performance status or an extremely limited life expectancy, extensive staging may not change management and may unnecessarily delay symptom-directed treatment. These patients may not be strong enough to tolerate radical treatments. They may be better served by providing them with proper palliative care to improve their quality of life and allow them to live out their remaining time with dignity and surrounded by loved ones. The challenge lies in identifying patients who would benefit from staging investigations and differentiating them from those best served by upfront palliative care. The prognostic score for oesophageal cancer is a validated scoring system developed for use in resource-limited settings to help clinicians make that decision.[25,26] The

score could potentially be incorporated into a risk-stratified staging pathway, with prospective evaluation of its impact on resource utilisation and clinical outcomes. This approach may be more feasible than trying to increase radiology capacity in an already strained healthcare system.

Curative management presents a different problem. The proportion of patients receiving curative-intent treatment is much lower in South Africa compared to other parts of the world.[16,27] For patients requiring curative treatment, access is limited by several factors, including surgical theatre time and the availability of radiotherapy. In many centres, for example, access to oncological treatment like radiotherapy is severely limited, while oesophageal cancer falls low on the list of priorities for radiotherapy.[28] Patients at these centres are often treated with upfront surgery, provided they are medically fit and without prohibitive comorbidities. This, in itself, comes with a significant delay, but may be less severe than the delay in radiotherapy.[29] Adjuvant chemotherapy or radiotherapy, or both, are then planned depending on the pathological stage. But many of these patients do not receive radiotherapy because of long waiting times, resulting in most patients receiving "surgery alone" as their treatment, despite the overwhelming evidence that multi-modal treatment is superior to surgery alone.[30] Whether survival in South African patients with oesophageal cancer treated with curative intent is comparable to that reported elsewhere remains unknown because reliable national survival data are unavailable.

Attempts to improve both curative and palliative care for oesophageal cancer in South Africa are further hampered by a lack of survival data. No national survival estimate for oesophageal cancer exists in South Africa, because survival requires something none of the current data systems is yet resourced to do – link a registered diagnosis to a certified death for the same individual. Record linkage between cancer registration and civil registration is well established internationally and would deliver national survival estimates from data that South Africa already collects.

Improving the cure rate of oesophageal cancer in South Africa requires a multi-pronged approach, including directing efforts towards earlier patient diagnosis and centralising the curative management of this disease. While the multi-modal curative management of oesophageal cancer is complex and fraught with potential complications in the best of circumstances, centralisation has been shown to improve outcomes.[31] This would once again require input and coordination from policymakers and clinicians.

Building a national database

Addressing the clinical problems associated with oesophageal cancer in South Africa is made harder by the lack of reliable data on the disease. A scoping review published in 2022 found that, at the time, clinical research on oesophageal cancer in South Africa comprised only 81 articles, the majority of which were single-institution retrospective reviews, while randomised controlled trials on the curative management of oesophageal cancer accounted for only 2% of publications. Of greater concern was that the majority of publications were from before the year 2000, indicating a decrease in publications over time.[15]

One of the most significant data deficiencies is knowledge of the disease burden of oesophageal cancer in South Africa. Between 2014 and 2023, the National Cancer Registry recorded 17 011 new cases of oesophageal cancer in South Africa, and between 2014 and 2022, Statistics South Africa certified 22 747 deaths from it.[7,9] These figures are not directly comparable because the two systems have different ascertainment methods and periods of observation. Nevertheless, the discrepancy highlights the substantial limitations of relying on either system alone to describe the national burden of oesophageal cancer.

While the currently available data on incidence and mortality are valuable, there are several shortcomings:

1. Cancer registration records the reporting laboratory rather than the patient's district of residence, and the largest reporters are national private pathology networks. Provincial incidence, therefore, cannot be derived, and everything we currently know about the disease's national geography comes from death certificates.
2. While oesophageal cancer can be recorded as a cause of death, it is often not, and the cause may be labelled as "oesophagus – not specified", thereby omitting valuable data like tumour histology and location.
3. Provincial population data by age, sex, and population group are not published, so provincial rates must be reconstructed rather than measured directly.

A potential solution is an integrated national oesophageal cancer database which includes the current pathology-based data which would record the pathology data, a population-based database maintained by public health personnel that would record demographic and geographical data, and a clinical database maintained by clinicians that would record data like patient conditions, cancer stage and management, and patient-reported outcomes, like the effect of current treatment modalities on quality of life. These databases should be linked, which would provide all the information needed to truly understand the impact of oesophageal cancer in South Africa. Achieving this will require sustained collaboration among these role players, together with appropriate governance, funding, and data-sharing mechanisms.

Conclusion

The problem of oesophageal cancer in South Africa requires a coordinated national response spanning prevention and risk reduction, earlier recognition, timely diagnosis, appropriate curative or palliative treatment, and research. These priorities are interdependent: reducing risk and understanding the disease's aetiology may inform future prevention, while earlier diagnosis and better care will generate the clinical data needed to guide resource allocation and improve outcomes.

Better data by themselves will not improve patient outcomes. Better patient care will. But without reliable data, South Africa will remain unable to determine where the burden is greatest, whether access to care is improving, or whether interventions are making a meaningful difference. The opportunity now is to move from recognising the problem to building a coordinated national response in which prevention, early recognition, equitable access to care and research inform one another.

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REFERENCES

1. National Cancer Registry. National Cancer Registry 2024 [Internet]. Cape Town: Cancer Association of South Africa; 2026. Available from: https://www.cansa.org.za/files/2026/04/National-Cancer-Registry-2024.
2. Francis D, Webster E. Poverty and inequality in South Africa: Critical reflections. Dev South Afr. 2019;36(6):788-802. https://doi.org/10.1080/0376835X.2019.1666703.
3. Van Rensburg HCJ. South Africa's protracted struggle for equal distribution and equitable access - still not there. Hum Resour Health. 2014;12:26. https://doi.org/10.1186/1478-4491-12-26.
4. Mntungwana S, Khosa NV, Buso AE, Sithole N. Barriers to chronic disease healthcare access in rural Eastern Cape Province, South Africa. Int J Environ Res Public Health. 2025;22(12):1881. https://doi.org/10.3390/ijerph22121881.
5. Willie MM, Maqbool M. Access to public health services in South Africa's rural Eastern Cape Province. SSRN Electron J. 2023;4:110-7. https://doi.org/10.2139/ssrn.4405870.
6. Schaafsma T, Wakefield J, Hanisch R, et al. Africa's oesophageal cancer corridor: Geographic variations in incidence correlate with certain micronutrient deficiencies. PLoS One. 2015;10(10). https://doi.org/10.1371/journal.pone.0140107.
7. National Cancer Registry. National Cancer Registry [Internet]. Johannesburg: National Institute for Communicable Diseases, National Health Laboratory Service. Available from: https://www.nicd.ac.za/centres/national-cancer-registry/.
8. Ramaliba TM, Muchengeti MM, Sithole N, et al. Incidence patterns and temporal trends of breast, prostate, oesophageal and cervical cancer in rural Eastern Cape Province, South Africa 1998-2021. Cancer Epidemiol. 2026;103:103151. https://doi.org/10.1016/j.canep.2026.103151.
9. Statistics South Africa. Mortality and causes of death in South Africa [Internet]. Pretoria: Statistics South Africa. Available from: https://isibaloweb.statssa.gov.za/pages/surveys/pss/hvs/cod/2021/cod2021.php.
10. Made F, Wilson K, Jina R, et al. Distribution of cancer mortality rates by province in South Africa. Cancer Epidemiol. 2017;51:56-61. https://doi.org/10.1016/j.canep.2017.10.007.
11. Simba H, Kuivaniemi H, Abnet CC, Tromp G, Sewram V. Environmental and lifestyle risk factors for oesophageal squamous cell carcinoma in Africa: A systematic review and meta-analysis. BMC Public Health. 2023;23:1782. https://doi.org/10.1186/s12889-023-16629-0.
12. Simba H, Kuivaniemi H, Lutje V, Tromp G, Sewram V. Systematic review of genetic factors in the aetiology of oesophageal squamous cell carcinoma in African populations. Front Genet. 2019;10:642. https://doi.org/10.3389/fgene.2019.00642.
13. Chen WC, Brandenburg JT, Choudhury A, et al. Genome-wide association study of oesophageal squamous cell cancer identifies shared and distinct risk variants in African and Chinese populations. Am J Hum Genet. 2023;110(10):1690-703. https://doi.org/10.1016/j.ajhg.2023.08.007.
14. Van Loon K, Mwachiro MM, Abnet CC, et al. The African Esophageal Cancer Consortium: A call to action. JCO Glob Oncol. 2018;4:1-9. https://doi.org/10.1200/JGO.17.00163.
15. Ferndale L, Aldous C. Oesophageal cancer in South Africa: A scoping review. S Afr J Oncol. 2022;6. https://doi.org/10.4102/sajo.v6i0.217.
16. Ferndale L, Sartorius B, Aldous C, Thomson SR. Oesophageal cancer in Area 2 of KwaZulu-Natal: Predictors of late presentation. S Afr J Surg. 2019;57(2):3-9. https://doi.org/10.17159/2078-5151/2019/v57n2a2948.
17. Govender M, Ferndale L, Clark DL. Oesophageal cancer in South Africa: The long timeline from onset of symptoms to definitive management. S Afr J Oncol. 2017;1. https://doi.org/10.4102/sajo.v1i0.6.
18. Nocawe GS, Tshifhumulo R, Sharpley N, Ndebia EJ. Experiences of people living with diagnosis of oesophageal cancer: Case of Eastern Cape municipalities, South Africa: A phenomenological study. East Afr J Humanit Soc Sci. 2026;5(1):215-28. https://doi.org/10.58721/eajhss.v5i1.1712.
19. Nkomo PN. Is the referral system appropriate for public healthcare in South Africa? An ethical analysis. Stellenbosch : Stellenbosch University; 2025. Available from: https://scholar.sun.ac.za/handle/10019.1/132541.
20. Ngoie KD, Jenkins L, Schoevers J. Evaluating referrals between rural district hospitals and a regional hospital in South Africa. Afr J Prim Health Care Fam Med. 2025;17(1):e11. https://doi.org/10.4102/phcfm.v17i1.4956.
21. Watermeyer G, Van Wyk MEC, Goldberg PA. An audit of provincial gastroenterology services in the Western Cape. S Afr J Surg. 2008;46(3):68-72. PMID: 18807301.
22. Dalwai E, Buccimazza I. System delays in breast cancer. S Afr J Surg. 2015;53(2):40-42. https://doi.org/10.7196/sajsnew.7741.
23. Anderson BO. NCCN Harmonised Guidelines for Sub-Saharan Africa: A collaborative methodology for translating resource-adapted guidelines into actionable in-country cancer control plans. JCO Glob Oncol. 2020;6:1419-21. https://doi.org/10.1200/GO.20.00436.
24. Nel D, Omar M, Chinnery G, Jonas E. Disparity in oesophageal cancer management in South Africa: A comparison between two tertiary centres with special focus on the palliation of dysphagia. S Afr J Surg. 2019;57(2):10-5. https://doi.org/10.17159/2078-5151/2019/v57n2a2842.
25. Ferndale L, Ayeni OA, Chen WC, Aldous C, Thomson SR. Development and internal validation of the survival time risk score in patients treated for oesophageal cancer with palliative intent in South Africa. S Afr J Surg. 2023;61(1):66-74. https://doi.org/10.36303/SAJS.3955.
26. Ferndale L, Bhadree S, Chen WC. External validation of a prognostic score for oesophageal cancer (PSOC) for patients treated with palliative intent in a resource-limited setting. S Afr Med J. 2026;116(6). https://doi.org/10.7196/SAMJ.2026.v116i6.4209.
27. Mahlawat N, Patiyal N, Vias P, Sood A, Bhagra S. A retrospective analysis of the burden and treatment patterns of oesophageal cancer over one year in a tertiary healthcare institution in the Western Himalayan region. Int J Basic Clin Pharmacol. 2025;14(4):513-8. https://doi.org/10.18203/2319-2003.ijbcp20251835.
28. Ramashia PN, Nkosi PB, Mbonane TP. Barriers to radiotherapy access in sub-Saharan Africa for patients with cancer: A systematic review. Int J Environ Res Public Health. 2024;21(12):1597. https://doi.org/10.3390/ijerph21121597.
29. Milligan L, Roodt L, Malherbe F, Cairncross L. Breast cancer surgical services in South Africa: Availability and barriers to guideline-concordant care. S Afr Med J. 2026;116(3). https://doi.org/10.7196/SAMJ.2025.v116i3.3154.
30. Jin HL, Zhu H, Ling TS, Zhang HJ, Shi RH. Neoadjuvant chemoradiotherapy for resectable oesophageal carcinoma: A meta-analysis. World J Gastroenterol. 2009;15(47):5983-91. https://doi.org/10.3748/wjg.15.5983.
31. Aiolfi A, Bona D, De Bernardi S, et al. Impact of centralizing oesophageal cancer surgery at high-volume centres on long-term survival: Individual patient data meta-analysis. Ann Surg Oncol. 2025;32(10):7891-900. https://doi.org/10.1245/s10434-025-17823-7.