

Key steps could reduces cases and deaths from rheumatic heart disease in the African Union

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Rheumatic heart disease (RHD) remains a major cause of cardiovascular disease in Africa, even as acute rheumatic fever and RHD have become

rare in high-income countries. In a new study led by investigators at Brigham and Women's Hospital, the team modeled the investment case for control of RHD in the African Union (AU) region. Results showed the potential to reduce RHD death by almost a third by increasing coverage of RHD interventions in regions of the AU to 2030, with a high return on investment in both the long and short term. Their results are published in *The Lancet Global Health*.

"Investing in early detection of [rheumatic fever](#) and [rheumatic heart disease](#) and providing cardiac surgery to those who need it could have a dramatic effect, saving around 70,000 lives by 2030," said corresponding author Gene Bukhman, MD, Ph.D., of the Division of Cardiovascular Medicine and Division of Global Health Equity. "Our findings illustrate the importance and high return on investments in the PEN-Plus package of integrated [disease management](#) as well as [cardiac surgery](#)."

Rheumatic heart disease is the most commonly acquired heart disease in people under age 25 and causes more than 280,000 globally deaths each year. The [disease](#) is the result of accumulated damage to the heart valves caused by rheumatic fever. Rheumatic fever is an autoimmune inflammatory reaction to strep throat and frequently occurs in childhood, potentially leading to death or life-long disability.

Rheumatic [heart disease](#) can be averted by preventing streptococcal infections or treating them with antibiotics when they do occur. Bukhman and colleagues constructed a model to estimate the health effects, costs, and monetized health gains from increasing coverage of a set of RHD interventions between 2021 and 2030. These interventions include strategies for expanding integrated outpatient care for severe, chronic noncommunicable diseases (NCDs) at district hospitals, encompassing the WHO's Package of Essential NCD Services (PEN-Plus). Examples include preliminary echocardiographic RHD diagnosis, medical treatment of RHD, and postoperative anticoagulation.

The team's modeling approach estimates a 30 percent reduction in death from RHD by increasing coverage of these interventions. The authors note that in the short term, investment in primary prevention would not avert a large number of deaths and would be costly because of the large number of childhood pharyngitis cases. But in the longer term, primary prevention would offer a significant return on investment by preventing costly secondary effects.

"Investing in these measures could avert large amounts of morbidity and mortality and provide returns in economic welfare," said Bukhman. "Our findings indicate that these achievable interventions could accelerate progress towards eliminating RHD in the AU."

More information: Matthew M Coates et al, An investment case for the prevention and management of rheumatic heart disease in the African Union 2021–30: a modelling study, *The Lancet Global Health* (2021). [DOI: 10.1016/S2214-109X\(21\)00199-6](https://doi.org/10.1016/S2214-109X(21)00199-6)

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