

Rheumatic heart disease: A new era of pushing for global control as World Heart Day approaches

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As this year's World Heart Day approaches (Sunday September 29), focus is returning to a neglected and entirely preventable heart disease that largely affects the world's youngest and poorest populations: rheumatic heart disease (RHD). To highlight this long-neglected condition, *Global Heart*, the journal of The World Heart Federation (WHF) is publishing a special issue dedicated to RHD.

The World Heart Federation views the publication of the special issue of *Global Heart* as a vital step in its target of reducing global RHD deaths in under 25s by 25% by 2025. Reducing deaths and disease due to heart diseases (which includes RHD) also forms part of WHO's non-communicable disease strategy.

The issue covers a wide range of topics, including the simple raising of awareness that untreated sore throat caused by Group A *streptococcus* can lead to [acute rheumatic fever](#) (ARF), which causes painful swelling of the joints, rashes, fever, and eventually the permanent [heart valve damage](#) associated with RHD.

Currently, the burden of disease of RHD is conservatively estimated at 15.6 million prevalent cases with 282,000 new cases and over 233,000 deaths per year. But as the experts behind these papers will explain, these are likely to be huge underestimates and will surely be revised steeply upwards when the next global burden of disease data are

collected in 2014. Echocardiographic diagnosis is also detecting many more cases, both of definite RHD and also borderline cases where [heart abnormalities](#) are present but as yet no clinical disease exists.

That in many countries there is no guaranteed supply of the special form of penicillin (benzathine penicillin G/BPG) in many parts of the world—to treat both initial cases of sore throat and also for secondary prophylaxis to prevent [disease progression](#)—is also explored in the articles.

But there is hope on the horizon. The world has recently been gripped by a new wave of momentum to control RHD, with the hope of a new vaccine initiative launched by Australia and New Zealand, and the programmes that have begun in several Pacific Islands and Africa. What follows is a selection of highlights from the special issue.

Professor K Srinath Reddy, President of the World Heart Federation and also President of the Public Health Foundation of India, says:

"Rheumatic [heart disease](#) is a highly preventable health problem which is destroying the lives of children and young persons from poor families. It continues to be neglected by health systems despite being one of oldest heart diseases known to medical science for centuries and methods of prevention, through penicillin therapy for streptococcal sore throat, have been available for several decades. It is time RF and RHD receive renewed attention to save hearts too young to die. Prevention of RF and treatment of RHD should be an integral component of the global action plan against NCDs and part of national programmes for universal health coverage."

Global Heart Editor-in-Chief Professor Jagat Narula, Mount Sinai School of Medicine, New York, USA, adds: "In order to provide a worldwide perspective and promote research into RHD internationally, we are dedicating an entire issue of *Global Heart* to RHD which is timed

to coincide with World Heart Day. This issue calls into focus creative and innovative solutions for combating the consequences of the alarming burden of RHD. It urges the international community to make the prevention of RHD an obligatory component of the global action plan against non-communicable diseases, as an integral part of national health programs in countries where the disease is endemic, such as in sub-Saharan Africa, and also countries that have endemic regions, such as Australia and New Zealand."

Implementing what we already know, as well newly announced initiatives to develop vaccines and more research into areas such as subclinical disease, could prevent most of deaths and illness related to [rheumatic heart disease](#) (RHD) in the world. These and other issues are covered in the paper that opens the RHD special issue of *Global Heart*, the Journal of the World Heart Federation. The editorial is by *Global Heart* Editor-in-Chief Professor Jagat Narula, Mount Sinai School of Medicine, New York, USA; Dr Jonathan Carapetis, Telethon Institute for Child Health Research, University of Western Australia, Perth, Western Australia, Australia; Dr Liesl Zühlke, University of Cape Town and Red Cross War Memorial Children's Hospital, Cape Town, South Africa; and Dr Kathryn Taubert, Chief Science Officer, World Heart Federation, Geneva, Switzerland.

The paper charts the successes of near-elimination of RHD from high-income countries between the 1950s and 1990s and how interest in the condition subsequently waned, despite pockets of resurgence; yet it continues to cause an enormous burden of diseases and death in poorer nations. The authors say: "But since then, a new era has begun, notable for the emergence of voices from regions where ARF/RHD remains a major problem. Research, policy, and advocacy are now led by individuals, and some organisations, working in low- and middle-income countries (particularly in sub-Saharan Africa, South Asia, the Pacific, and Latin America), or in wealthy countries where RHD remains

prevalent in subgroups—often indigenous or other populations living in poverty, such as in Australia and New Zealand."

They add: "The new era has also resulted in wonderful collaborations on a global scale. Efforts to develop ARF vaccines have researchers from countries such as the United States, Australia, and New Zealand collaborating with researchers in Mali, Nicaragua, Fiji, India, and South Africa. A truly global effort resulted in a pivotal publication of agreed criteria for the echocardiographic diagnosis of asymptomatic RHD, and an ongoing collaboration to increase uptake of these guidelines and ensure that protocols for RHD screening are evidence-based, practical, affordable, and supported by essential secondary prophylaxis programs"

The authors also discuss the World Heart Federation's 5 targets to control rheumatic fever/RHD by 2025 (see below) and how the current burden of diseases estimates cited (more than 15 million cases and more than 200,000 deaths annually) are likely to be substantial underestimates and will increase when the Global burden of disease figures are revised in 2014. They say: "There are still no low- or middle-income countries with coordinated, national control programs. We still do not have a RF vaccine, although the recent announcement that the Australian and New Zealand governments are jointly sponsoring a program to fast track development of a RF vaccine gives hope that this may be achievable."

They conclude: "But we must keep in mind that, although there are still gaps in our knowledge about understanding the patho-genesis of RF, the role of skin infections, the relevance of so-called borderline RHD detected on echocardiography, and others, the major gap is one of implementation. There is no doubt that, if we put into practice the knowledge we already have, the majority of deaths from RHD around the world, as well as the new cases that continue to occur, could be prevented right now. This requires implementation science, but it also requires advocacy, awareness, commitment, coordination, and resources.

At least the new era means that the future of RF/RHD science and control is in good hands."

Provided by World Heart Federation

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