

Congress Proceedings

The joint 15th Pan-African Society of Cardiology and Kenya Cardiac Society congress proceedings, 2021

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Abstract

The 15th biennial Pan-African Society of Cardiology (PASCAR) congress held in Mombasa, Kenya, in November 2021, convened in its legacy of being the largest Pan-African conference on cardiovascular diseases (CVDs). The congress brought together members of cardiovascular societies from across the continent in the shared mission of advancing cardiovascular health in Africa. In partnership with the Kenyan Cardiac Society (KCS), the specific aims of the PASCAR conference were to (1) advance knowledge on CVDs in the region; (2) share local data, clinical cases, challenges and solutions and reinforce collaborative capacity initiatives in research and workforce training; (3) engage with policy makers to address health-system issues affecting access to CVD care in Africa; and (4) bring together local and international thought leaders in cardiovascular medicine to strengthen the partnerships between PASCAR, KCS, other African cardiac societies and key global stakeholders. Due to the COVID-19 pandemic, this congress demonstrated great success in providing both an in-person and a virtual platform of attendance, therefore making this an inaugural hybrid PASCAR congress, with inclusive and widespread participation from across the globe. We highlight the key areas of focus, various educational programmes and innovative initiatives that shaped the 15th PASCAR congress, including expert consensus on the future directions for advancing CVD care in Africa.

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The Pan-African Society of Cardiology (PASCAR) convenes its pan-African conference every two years, hosted by one of the African member cardiology societies. The Kenya Cardiac Society (KCS) won the bid to host the 15th PASCAR congress that was held in Mombasa, Kenya, in November 2021 and it was combined with the 38th annual KCS scientific congress. The first PASCAR congress was held in 1981, hosted by the Nigeria Cardiac Society under the leadership of its then President, Prof Ayodele Falase, during which PASCAR was officially inaugurated. At that time, this was a very important milestone spurred on by the realisation that most international cardiology

congresses were orientated towards the Americas and Europe, with little contextualised focus on the growing cardiovascular needs across the African continent.

In sub-Saharan Africa, cardiovascular diseases (CVDs) rank second among the causes of death and are responsible for 35% of all mortalities.¹ Therefore, the mandate of PASCAR is to prevent and treat CVDs in Africa, to elevate the training of health professionals on CVDs, to educate the public about heart diseases, to invest in CVD research and to collaborate with regional policy makers on advancing infrastructural capacity around CVD systems of care and access.

The PASCAR congresses have focused on analysing cardiovascular problems common in the region, new technology and fostering collaboration between cardiology professionals across the continent. As the burden of CVDs in Africa continues to rise, PASCAR and its partners are at the forefront of bridging the gaps in capacity building, education, policy and research to design regional solutions to the growing epidemic of CVDs in our populations. This publication serves to summarise the proceedings of the 15th PASCAR congress, held between 22 and 25 November 2021 in Mombasa, Kenya, where the theme was advancing cardiovascular care in Africa through collaborative research and training.

Congress objectives and organisation

The main objectives of the 15th PASCAR congress were to (1) advance skills and knowledge on CVDs affecting the continent through collaboration with thought leaders from across the globe; (2) engage with policy makers to address health-system issues affecting access to CVD care in Africa; (3) share challenges and solutions through locally generated research data and clinical cases from across the African continent; (4) strengthen collaborations between PASCAR, KCS, other African cardiac societies, and key stakeholders, including the World Heart Federation (WHF) and European Society of Cardiology (ESC).

The Congress organisation was planned at three levels. The overall congress organisation and planning was led by an organising committee, comprising representatives from the PASCAR governing council, the KCS executive committee and representatives from the WHF. A scientific committee comprising representatives from the PASCAR task forces, paired with KCS members, nominated based on their expertise in different CVDs, was also formed to develop the scientific



PASCAR heart failure course delegates.

programme. KCS formed a local organising committee charged with fundraising and overseeing logistical aspects.

The congress was preceded by pre-congress events on 22 November 2021, comprising the 6th WHF summit and two workshops conducted in parallel. The theme of the 2021 WHF summit was: Time to act on obesity: because preventing and controlling obesity can be a game changer in cardiovascular health. The WHF is a strategic partner of PASCAR and their summits, which began in 2016, convened members of governments, civil societies, industries, academia and allied health professionals in the mission to share, learn and deliberate on best practices surrounding the prevention and control of CVDs at a regional and global level. Previous editions have explored key issues, such as access to essential medications, mitigation of CVD healthcare costs, innovations in medical technology, and the role of the multidisciplinary workforce in cardiovascular health.

The congress was officially opened at the end of the pre-congress workshops with an opening plenary session. This plenary session was attended by representatives from the Kenyan Ministry of Health, regional civil societies, development partners, allied healthcare community partners and private sector representatives, to discuss health-system resilience to improve and maintain access to CVD care in Africa, including the particular regional challenges of doing so in the face of the ongoing COVID-19 pandemic. The congress was officially opened by the chief guest, Dr Mercy Mwangangi, who serves

as the chief administrative secretary in the Kenyan Ministry of Health, flanked by presidents of the PASCAR, KCS and WHF.

The scientific programme of the congress was organised in plenary and break-out sessions to cover major topics within CVDs, including hypertension; heart failure; rhythm disorders of the heart; cardiac imaging; coronary artery disease; COVID-19 and the heart; rheumatic heart disease; interventional cardiology; paediatric cardiology; congenital heart disease; cardiac surgery; preventative cardiology and cardiometabolic syndromes; and sports cardiology. The congress culminated in a grandstand live-case transmission from the Coast General Teaching and Referral Hospital showcasing a live percutaneous coronary intervention procedure using adjunctive technology.

The congress' expert faculty was drawn from around the globe, including from PASCAR, KCS, cardiology societies from across Africa, Europe and North America, as well as other international thought leaders nominated by the scientific committee members.

Highlights from the pre-congress meetings

World Heart Federation summit

The WHF summit was convened as a hybrid event, with five global and regional webinars held between October and November, culminating in the half-day event in Mombasa, Kenya during the PASCAR congress. As mentioned above, the WHF summit theme was: Time to act on obesity. The summit,

chaired by the current WHF president, Prof Fausto Pinto, brought together a wealth of perspectives and expertise from across Africa where the consequences of urbanisation, decreased levels of physical activity, shifting diets and increased economic growth have made obesity a looming public health crisis.

The summit had three plenary sessions that outlined the factors contributing to the rising obesity rates in Africa. These included a showcase on what people living with CVDs and obesity can teach the cardiovascular community about managing complex conditions; discussions specific to breaking down how health systems on the continent can shift from managing communicable disease to preventing and managing non-communicable diseases; and deliberations on current and future directions for effective research and collaboration between cardiologists, endocrinologists and physicians in combating the rise in obesity-related cardiometabolic diseases.

Global statistics show that obesity is growing as a prominent health challenge around the world, and specifically on the African continent,² with an emphasis among the low- and middle-income classes in Africa's urban cities. Eight of the 20 fastest-rising countries with adult obesity are in Africa.² The speakers emphasised the importance of advocacy around healthy lifestyle education, including the importance of dietary patterns in disease modification, as demonstrated through diabetes reversal programmes and in preventative medicine research.³

One of the speakers representing the youth emphasised the need to destigmatise obesity through encouraging young people to talk about obesity with each other, their communities and local healthcare providers and, furthermore, the need to establish safe and accessible nutrition and physical activity programmes targeting this population. This was particularly impactful to engage with and empower members of the youth in these discussions, as rates of childhood and adolescent obesity are growing exponentially in the region and are projected to increase in the coming decades.⁴

The summit also explored the gender-based differences in rates of physical activity, general fitness and engagement in routine exercise, with specific focus on addressing the challenges and cultural barriers faced among women in Africa. It was unanimously agreed that there was a need to create awareness on obesity and its connection to cardiovascular and metabolic diseases with a focus on primary prevention, destigmatisation and advocacy programmes, and strategic community engagement.

PASCAR Africa heart failure course 2021 workshop

The PASCAR Africa heart failure course 2021 was launched on 27 March 2021. The course is delivered in partnership with Cardiff University. The course has been developed for Africa by Africans, with the aim to create a network of appropriately trained specialists with an interest in heart failure to take leadership roles in their region, country and local institutions.

The inaugural course enrolled 22 candidates: 15 cardiologists, three cardiovascular disease fellows and four specialist medical physicians from across Africa. The course attendees represented various African countries, including Kenya, Tanzania, Senegal, Sierra Leone, Ghana, Nigeria, Cameroon, Rwanda, Zambia, Zimbabwe, South Africa, Sudan, Uganda and Mozambique. The candidates are expected to develop systems of care designed to offer early diagnosis and optimise treatment, without undue

burden on resources, through capacity-building initiatives.

The programme was delivered virtually on the last weekend of each month between March and September 2021. The course included 50 hours of didactic talks and interactive discussions, as well as case presentations by candidates, which were critically reviewed by faculty mentors and peers. As part of the course, participants attended the joint PASCAR and KCS congress.

During the congress, this pre-conference workshop was organised for further face-to-face training, collaboration and mentorship. In this session, co-ordinated by Prof Mahmoud Sani, some selected participants presented a synopsis of their research work, which is a requirement for completing the course, titled 'A description of my current heart failure landscape and evidence-based approaches to improve services'. Drs Isa Oboirien, (Nigeria), Irina Mbanze (Mozambique), Nafisa Elsammani (Sudan), Amha Weldehana (Rwanda), Ido Ukpeh (Nigeria) and Theresa Ruba Koroma (Sierra Leone) presented papers. They all highlighted challenges of heart failure services in their countries and recommended ways of improvement. The leadership of the PASCAR heart failure task force is working with the presenters to publish a summary of this work.

During the meeting, the peculiarities of heart failure on the African continent were discussed. Heart failure in Africa is associated with higher age-adjusted mortality and patients are two decades younger than their counterparts in Europe and America.⁵ This has very important implications for the continent as heart failure affects young people in their economically productive ages. It also has mainly non-ischemic aetiology with hypertension, dilated cardiomyopathy, rheumatic heart disease, HIV-associated cardiomyopathy and pericardial disease being common risk factors.⁶ In addition, heart failure in Africa is more common among men, where hypertensive heart disease is prevalent and more common among women in areas where rheumatic heart disease and peripartum cardiomyopathy are common.⁷ Also mentioned was the rising incidence of heart failure among people over the age of 60 years, which is associated with higher rates of morbidity, hospital admission and mortality, and lower overall quality of life.⁷

Clinical research training course on cohort studies in Africa

The pre-congress short course was organised by Prof Friedrich Thienemann (South Africa) and Prof Anastase Dzudie (Cameroon). The lecturers covered methods and experience on cohort study research in Africa.⁸ The sessions were delivered through didactic lectures and pre-recorded video presentations by pre-eminent invited faculty speakers. Prof Thienemann introduced phase II of the Pan-African Pulmonary Hypertension Cohort study (PAPUCO II).^{9,10} He emphasised the need to focus on pulmonary hypertension associated with infectious diseases, such as HIV, tuberculosis, schistosomiasis and rheumatic heart disease, and to increase the recruitment target to 1 000 participants by inviting more centres from more countries to join the study. Prof Anastase Dzudie discussed the various study designs and the 'A to Z' of study proposal development. He pointed out that a clear understanding of the research question ultimately leads to appropriate outcomes.

Prof Karen Sliwa, past president of the WHF, gave a lecture discussing cohort studies in minors and pregnant women. She

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Edna Gbonu Pessimia
Dr Theresa Ruba Koroma
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PASCAR Africa heart failure course 2021 – global collaboration.

emphasised that studies must prioritise the safety of minors and unborn babies at every stage of their conduction and meet guideline-based ethical standards. Dr Sandra Mukasa (South Africa) addressed the principals of good clinical practice (GCP) of evidence-based clinical practice and the fact that research involving humans must be scientifically justified and described in a clear, detailed protocol.

Researcher Antoneta Mashinyira (South Africa) outlined the methods employed in data collection, database management and trial administration. Dr Lori Dodd (United States) gave an informative and practical guide on sample size considerations, which determine the accuracy of our estimates and the power of any study to draw conclusions. Lastly, Dr Patrick Katoto (Congo) highlighted various aspects of how to create a data-analysis plan. All in all, this was a resourceful session, setting the

stage for vibrant research and multidisciplinary collaboration in Africa.

Imaging workshop

The imaging workshop sessions focused on advanced specialist cardiac imaging techniques (echocardiography, transoesophageal echocardiography, cardiac computed tomography and cardiac magnetic resonance imaging) in Africa. With the growing burden of CVDs, Africa’s healthcare system needs to grow in tandem with the demand for holistic specialist cardiac assessment, as well as managing adverse outcomes and complications arising from this disease spectrum. The sessions were tailored in a structural manner, with each presenter taking us through different forms of cardiac imaging, with relevant clinical case correlates to enhance

the interactive nature of the sessions.

The first session was on transthoracic echocardiography (TTE) and transoesophageal echocardiography (TEE), presented by Prof Justiaan Swanevelder. He took the audience through the introductory basics of TEE, discussed various imaging views, went through case discussions of intra-operative TEE, and highlighted the major consensus guidelines and safety principles.

Drs Andre du Plessis and Islam Shawky presented illuminating talks on an introduction to cardiac computed tomography (CCT) and CCT angiography (CCTA), modalities that provide key benefit in assessing cardiac disease based on high negative predictive values, particularly for coronary artery disease (CAD) assessment. This session on CCT provided scientific and clinical updates on the indications and uses of CCT for the investigation of CAD and other CCT applications in various CVDs, including heart failure, valvular heart disease, diseases of the aorta and pre-procedural/pre-surgical imaging assessment. The session concluded with highlighted CCT imaging challenges that gave the audience and presenters an opportunity to provide real-time feedback and engagement around routine and nuanced clinical imaging scenarios.

The cardiac magnetic resonance imaging (cMRI) session was presented by Prof Ntobeko Ntusi, whose key message was on the principles of cMRI physics. His talk discussed methods of parametric analysis of myocardial and pericardial pathology, the different sequences used to highlight various pathologies and confirm diagnoses, some of which may be missed on TTE. He also demonstrated imaging findings of HIV-related CVD, which is a wide spectrum of disease, not only limited to vasculitis.

These exemplary sessions of the various cardiac imaging modalities served to reinforce how diverse, complementary and necessary cardiac imaging is, in concert with clinical diagnosis and evaluation, and how underutilised cardiac imaging is in Africa. During each talk, the session participants and faculty

discussed ways to build capacity around cardiac imaging and mitigate the challenges related to imaging-device procurement, workforce training and healthcare costs in the implementation of cardiac imaging resources on the continent.

Highlights from the scientific sessions

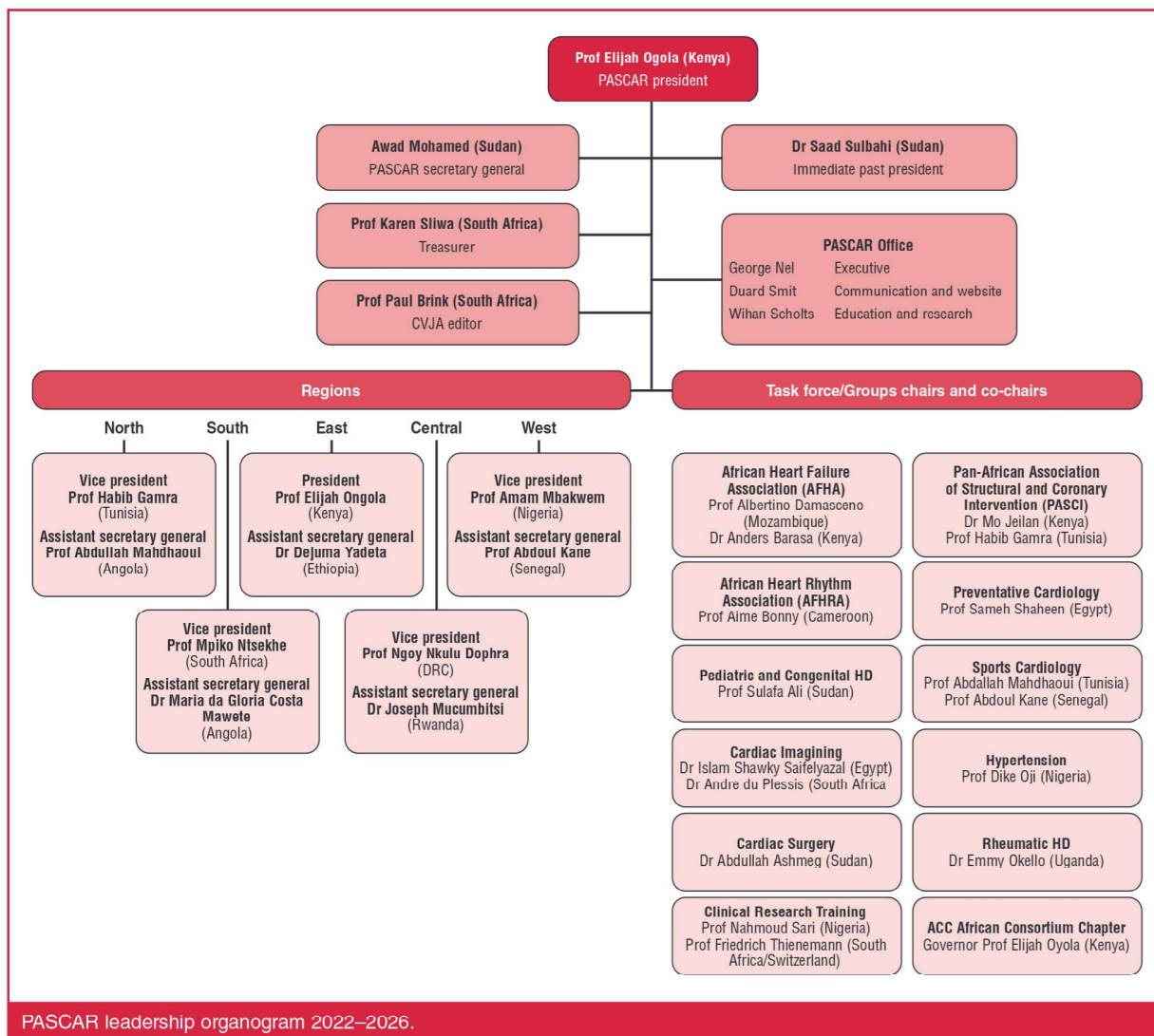
The scientific programme comprised more than 25 sessions, with more than 90 local and internationally based faculty speakers at the helm, providing scientific instruction in a wide range of CVD topics pertinent to the global and African context. Keynote sessions included: the Africa heart rhythm session on cardiac arrhythmias and device management in Africa, where the challenges of access to arrhythmia care, the intersection of heart failure and rhythm disorders on the continent, and indications for device selection and implantation were discussed with case-based, practical applications; and the COVID-19 and the heart session, chaired by Prof Fausto Pinto and Dr Bernard Samia, highlighted data from the WHF COVID and CVD study, recommendations for thrombosis management in the COVID era, and robust discussions on ways to reinforce healthcare system resiliency, among several others, as listed previously.

In addition to the robust and comprehensive scientific programme, hundreds of scientific and clinical abstracts were submitted for presentation at the PASCAR congress. Abstract presenters represented members from all five PASCAR regions (north, east, west, central and southern Africa) and were an excellent demonstration of the ongoing research and clinical capacity-building initiatives being spearheaded by PASCAR members and affiliates across the continent.

Notably, the top abstract presentation award was won by Carol Mutai who made a presentation on training of healthcare workers in select county hospitals on STEMI diagnosis and management. The abstract was recognised because of the impact



PASCAR governing council members, task force chairpersons and congress delegates.



the project made to improve access to quality cardiovascular care at the community level.

General controversies in cardiology

A session was designed in collaboration with the ESC and representatives from the *European Heart Journal* to discuss nuanced and controversial cardiology clinical care questions in a debate format. It was as entertaining as it was informative. Panellists gave their statements either for or against the proposed topics, which centred on common cardiovascular conundrums, such as acute coronary syndromes and the use of thrombolysis as first-line reperfusion therapy in the post-COVID era, implementation of low-carbohydrate diets for all CVD risk groups, CCTA use for ubiquitous coronary imaging in resource-limited settings, and use of angiotensin receptor-neprilysin and sodium-glucose co-transporter-2 inhibitors for all patients with reduced ejection fraction in sub-Saharan Africa. Each of the faculty panellists used pivotal trials and recent data to support their positions on the given topic and, after each topic discussion,

an expert discussant summarised the arguments and provided unifying conclusions that contextualised the conversations for the sub-Saharan African context.

The Bongani Mayosi memorial session

In a powerful and inspiring session chaired by Prof Mpiko Ntsekhe, the life, achievements and legacy of African cardiologist and PASCAR leader, Prof Bongani Mayosi, were remembered at the 15th PASCAR congress by a keynote address by Prof Mayosi's erstwhile mentee, Prof Mark Engel. Well remembered by the PASCAR and global cardiovascular community, Prof Mayosi's memory, remarkable contributions to the cardiovascular field, commitment to research training, mentorship and collaborative spirit were honoured. Remarkable quotes made by Prof Mayosi and tributes by colleagues served to inspire and empower the congress attendees in forging on in the shared mission of advancing cardiovascular health through collaborative research, training and clinical care.

‘Life as you rise’ – Prof Mayosi

‘Professor Mayosi never forgot the challenges he had to overcome, and he therefore dedicated himself to mentoring and supporting others faced with similar challenges’ – Prof Mark Engel

‘Make your research beyond yourself. Be humble, pray for wisdom each day, and don’t worry about who gets the credit’ Prof Mayosi

Congress outcomes and recommendations

A new PASCAR governing council was elected with Prof Elijah Ogola from Kenya as the new president. Each of the five main regions of the continent was represented by a vice president and assistant secretary general.

The main recommendation of the congress was to strengthen and solidify the role of the task forces to achieve the four goals of PASCAR, namely, to prevent and treat CVDs in Africa, to educate and train African healthcare professionals about CVDs, to educate lay persons about heart disease and to invest in cardiovascular research. More involvement of the younger generation and female cardiologists was encouraged.

Two areas of focus have been identified by PASCAR as integral to the future of the organisation and cardiology in the continent. One new task force was formed for clinical research training, to serve this important field.

Conclusion

The 15th PASCAR congress held in Mombasa was an extraordinarily successful hybrid event in the context of a pandemic that continues to shake the world, with successful in-person participation and engagement, and online participation of a wealth of international collaborators, faculty and attendees. It has refocused the eyes of the cardiovascular community on the

pressing needs of CVD in Africa, charted the way forward for research and capacity building, and encouraged all attendees to consider innovative and integrated methods to employ evidence-based interventions into policy and practice.

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