

Cardiovascular Healthcare in Sudan: Education, Planning & Delivery

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Abstract: This paper attempts to outline the major challenges facing the Cardiovascular Medicine in Sudan. However it is not possible to cover such a broad subject within the timescale for the conference, but nevertheless, below is merely an outline in an attempt to highlight important concepts. Cardiovascular disease is highly prevalent in Sudan, but with poorly studied statistics, if at all. Moreover, the incidence and prevalence of Cardiovascular Risk Factors is equally high, poorly understood, underestimated by official bodies, and poorly tackled by healthcare professionals. Moreover, patients often have limited understanding of health issues and rarely taught how to take command of their own health, or be actively involved in ensuring their wellbeing.

1 Understanding the Magnitude of the Problem and Deficit

I believe cardiovascular healthcare is both chronically underfunded, underdeveloped as well as poorly delivered in Sudan. Cardiovascular disease (with its major manifestations being: Ischaemic heart Disease- IHD, Valvular Heart Disease- VHD, Stroke, Hypertension, Cardiomyopathy, etc) is highly prevalent in Sudan, but with poorly studied statistics, if at all. Moreover, the incidence and prevalence of Cardiovascular Risk Factors is equally high, poorly understood, underestimated by official bodies, and poorly tackled by healthcare professionals. Moreover, patients often have limited understanding of health issues and rarely taught how to take command of their own health, or be actively involved in ensuring their wellbeing.

Examples of the above included the high incidence of hypertension and Diabetes Mellitus, with their grave long-term sequelae and cardiovascular complications, and burden on Health and Economy. In Sudan we have, unfortunately, not been able yet to irradiate Streptococcal throat infections or treat these effectively in the wider society, to minimise the risk of Rheumatic Heart Disease, which continues to strike a large number of children and young adults causing significant Valvular Heart Disease with grave consequences on their health, education, working lives, as well as their families (often poor), economy and the wider society.

2 Tackling the Problem

2.1 Epidemiology

- The role of Dept/ Ministry of Health could not be emphasised strongly enough in obtaining ground level statistics of the prevalence of both the risk factors and cardiovascular disease, to allow current and future planning and delivery of cardiovascular healthcare. This necessitates carefully planned population based epidemiological studies, which need not be complex nor expensive, ensuring all relevant parties are involved and information thereafter well distributed. Community Health Depts. in individual Medical Schools could be vital partners in such studies, which have to be carefully organised.

Links with the certain Academic Institutions and Western universities already exist, but these require strengthening to allow Expertise and funding for such Population studies to become reality.

2.2 Health Education and Training

- This is a vital part of any nation's healthcare. From personal experience both as an undergraduate and a member of teaching staff at the University of Khartoum, Faculty of Medicine, I believe the emphasis on Cardiovascular healthcare education and delivery is poor, and often overshadowed, understandably, by the strive to ensure adequate understanding of the nation's biggest killers, such as infectious diseases. However, as we move into the 21st century, the geographical map of the nation's health is changing rapidly, with cardiovascular disease becoming more prevalent as cardiovascular risks are soaring out of control, and the country's socioeconomic built changes.
- As such, it is crucial to build the future of cardiovascular healthcare on sound basis of excellent undergraduate training, and further extend this into more vital postgraduate training and continuous professional development. Equally, the allied health professionals in delivering cardiovascular healthcare (nurses, paramedics, cardiac physiologists, cardiac catheter lab nurses/ technicians, radiographers etc) should receive the same level of attention, as they are an integral part of delivering a holistic service.
- In this regard, links could be easily established with academic and healthcare institutions in the UK/West to train:
 - a. **Postgraduate doctors/cardiologists:** This would involve a period of secondment/ attachment to a tertiary level cardiac/cardi thoracic centre in the UK, to allow the attaché to gain enough insight into the standards of modern Cardiovascular healthcare practice and delivery as a whole, and allow individuals to gain particular skills in this procedurally-based specialty such as:
 - **Coronary Intervention:** With emphasis on both basic coronary angiography, as well as skills for advanced coronary intervention, which is one of the cornerstones in delivering acute as well as elective cardiovascular treatment. I envisage this will take a minimum of 12-24 months to achieve. Liaison with the British Cardiovascular Society (BCS), and its affiliate British Cardiovascular Intervention Society (BCIS) would be possible in order to organise such training opportunities.
 - **Cardiothoracic surgery:** it is almost certain that all postgraduate doctors interested in perusing a career in this field would have to spend some time abroad to gain the necessary skills, and I am delighted to know that the Ministry of Health in Sudan has established certain links with International Centres to train Sudanese faculties in this advanced field. However, the emphasis should be on quality as well as quantity, in addition to ways of transferring this knowledge locally.
 - **Cardiovascular Imaging:** (Both for Doctors and cardiac physiologists): this section of cardiovascular medicine is concerned with obtaining skills for Echocardiography,

Cardiac MR, and CT coronary Angiography. Certain standards would have to be achieved for professionals to be an independent. Again, Liaison with Health Institutions, as well as professional Bodies (BCS/BSE) would be cornerstone in achieving this.

- b. Para-clinical staff:** Both in the cardiac catheter laboratory, as well as outpatient setting, cardiac physiologists play a vital role in cardiovascular healthcare delivery. Training opportunities would also have to be arranged for a sufficient number of key personnel, who could subsequently participate in raising the standards and quality of care provided in Sudan.
- Above mentioned, there is certainly a scope for Expatriates in the UK to organise regular visits to the mother country and take part in establishing, and delivering regular educational and training sessions for postgraduate doctors and other health care professionals in this field, however the impact of this could be limited, and would certainly not be long-lasting or on large enough scale to effect a huge change.
 - Ultimately, the aim should be to establish a formal training programme in Sudan for future cardiologist, and allied healthcare professionals in this field, who would be able to deliver a quality assured care to the nation as a whole.

2.3 Public Education

- Disseminating healthcare Education is a recognised essential component of a complete healthcare system. Educating the public in Sudan about their Cardiovascular Health is not only deficient, but perhaps does not exist. As such, this is huge challenge, but would be vital to address. The role relies not only on healthcare professionals, but also governmental and academic institutions. Tools such as dedicated Internet website, TV adverts, Filed lectures, School training could be exploited to this effect

2.4 Planning, Funding & Delivery

- Cardiac services delivery relies heavily on technology, and as such delivering a complete 21st century level cardiovascular healthcare is both expensive, and difficult to maintain. Established cardiac centres in Sudan are not only in need for their staff to receive formal training, but also for the basic tools to achieve their goal of treating all cardiovascular patients locally, as most of these travel abroad to receive care that is beyond giving them basic pharmacology.
- Establishing serviceable and reliable cardiac catheter laboratories, X-Ray equipments, cardiac catheter laboratory consumables (catheters, contrast media, stents, balloons, syringes etc), technical equipment for pacemaker check and follow-up, imaging machines, etc, is of paramount importance to delivering the ultimate cardiac care one would wish for in this day and age!. Therefore, recruiting the fund from relevant governmental organisations with proper allocation to build and sustain these services needs to be emphasised. I am certain that capital aid from NGO's would be thoroughly appreciated towards this aim, if it was channelled appropriately.

2.5 Involving the Industry

- Cardiovascular healthcare delivery is crucially and closely linked to technological advances, a race in which most of the famous pharmaceutical companies are heavily involved. As such attracting such companies to invest in healthcare systems in Sudan is crucial, from as early as the planning phase of building cardiac centres. Moreover, maintaining an everlasting relationship with these companies (competitively) is important in ensuring sustainable technology. In addition, it is practically feasible to involve the industry in providing Educational Grants for both National meetings, as well as sponsoring International Training Fellowships, crucially suited for this speciality.

2.6 Professional Bodies

- Finally, I dream of a Ministry of Health Strategy that carefully studies and plans for Advancement of Cardiovascular Healthcare in Sudan, and equally of a Sudanese Cardiovascular Society/ Cardiac Care Network (SCS) that, in line with national strategy, aims to be a genuine learning organisation where education, training and personal/professional development is encouraged and valued. In addition, it needs to recognise that its commitment to supporting and maintaining a high quality-learning environment for all staff can be achieved through partnership and working together with national and international organisations. As an organisation, SCS has a responsibility to ensure that it builds an environment providing opportunities that support lifelong learning.