Autumn 2015
Volume 12 • Number 2
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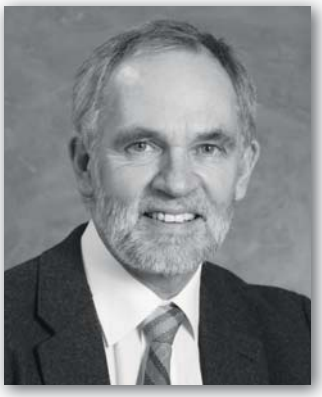

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Training the next generation of South African cardiologists – Are we on the right track?

"It is always safe to assume, not that the old way is wrong, but that there may be a better way" *- Robert R Harrower*

Robert Harrower was a controversial endocrinologist who promoted organotherapy to treat endocrine diseases. He may have been right that eating a thyroid gland may have some therapeutic value in patients with disorders of the thyroid, but in the field of cardiology we are more likely to learn from his quotation than from his therapeutic beliefs.

The training of cardiologists in South Africa has changed markedly over the last 20 years. Training centres across the country have accepted the challenge and continue to produce cardiologists of a high standard. Testament to this fact are the many South African trained cardiologists who have made their mark as leaders in the field of cardiology in the USA, UK and Europe as well as the number of applicants from other countries seeking to be trained at South African institutions. However, we should remember the advice of our colleague from endocrinology and we should embrace the belief that everything can improve.

In order to improve the training programme in South Africa we need to take stock of our strengths and weaknesses, and there are many. Amongst our strengths are a number of well-established training centres with a rich history of producing leaders in the field of cardiology, a reasonably well developed health care system, access to patients with a wide spectrum of cardiac diseases and a teaching approach based on individualised training at the bedside and in the cardiac catheterisation laboratory. Our main weakness centres around the small number of posts for both trainers and trainees. There are eight medical schools in South Africa at present and all of them cannot claim to be in a position to effectively train cardiologists. Those medical schools, who have the expertise and infrastructure to provide quality training are hampered by a lack of training posts. An example is the Division of Cardiology at Stellenbosch University. This training centre, located at Tygerberg Hospital, has built a reputation of producing well trained cardiologists. Yet they have only 2 training posts. Training 5 cardiologists, as they have done for a number of years, requires external funding for 3 trainees. "External funding" refers to funding not supplied by the Department of Health, the Hospital or the University. Grants from various sources, such as the Discovery Foundation and Life Healthcare Fellowships, have an important role to play here and make it possible to train additional applicants in supernumerary appointments. However, this source of funding is an ad hoc supplement of existing funding and not

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enough to consistently train the number of cardiologists required. To sustain the training of aspiring cardiologists, in addition to the limited number of funded posts provided to Divisions of Cardiology such as this one, it is glaringly obvious that additional training posts must be provided to the training centres, sufficient to meet the needs of the country.

South Africa also has a responsibility towards the rest of the continent to provide access to training for candidates from other African countries whose own countries cannot provide the required training. Ironically this responsibility is often easier to meet than the training of South African applicants due to the lack of funded posts. Many of the applicants from foreign countries are self-funded and train as supernumeraries. This creates the risk that training programmes become dependent on foreign supernumeraries to meet their service demands whilst being unable to fulfil their training mandate towards South African applicants.

The challenge of meeting our mandate towards SA trainees is further complicated by the need to increase the number of cardiologists from previously disadvantaged sectors of the community. The number of black graduates at our medical schools has significantly increased in recent years but is not yet universally reflected in the number of black South Africans qualifying as cardiologists. The small number of posts available to training centres is a major stumbling block to take on more trainees with potential from disadvantaged groups of society. I believe that the Government, through the Department of Health and the Department of Education, together with the Universities, must address the lack of training posts if we are to increase the tempo of producing cardiologists reflecting the diversity of our society.

What about the infrastructure required to train a cardiologist? Before reflecting on the equipment component of the infrastructure required we need to emphasise that the most vital part of the infrastructure is the presence of knowledgeable and skilful trainers to mentor and guide the trainees through the 3 year training programme. To be an effective training centre requires not only a sufficient number of cardiologists but also a sufficient number of trainees to create a vibrant culture of learning. The lack of enough trainer and trainee posts is a bigger challenge and a bigger shortcoming than the lack of high technology equipment. The impact of too few trainee posts has been highlighted. The impact of too few posts for cardiologists is also self-explanatory. A consequence of the limited number of posts for cardiologists at our training centres that is not always appreciated is the fragility this brings to the training capacity of the country to produce cardiologists. There are recent examples where the number of cardiologists at some of our training centres were allowed to dwindle to a single or no cardiologist at all with near disastrous consequences. Without motivated and skilled cardiologists at the helm in our training centres our capacity to train will be eroded in a very short space of time and it will take decades to regain the lost ground. A less obvious, but equally concerning fact, is the fragility of the cardiology service in the private sector which has to depend on the small number of trainees who qualify annually to sustain the service in the private sector. Some regions in our country are dependent on an equally small number of cardiologists in the public and private sectors, bringing a fragility to both services. Another factor is the apparent generation gap in the private sector, with the 40 - 50 age group underrepresented due to a variety of factors including emigration and the small numbers of cardiologists who qualified in the previous 2 decades. I am not saying all my colleagues in the private sector are getting long in the tooth, I'm just saying think about it!

Back to the equipment infrastructure required to train a cardiologist. Cardiology is a technologically advanced field of medicine requiring expensive and sophisticated equipment. Despite the current economic constraints it appears as if most medical schools have adequate access to the essential infrastructure required and trainees are exposed to the ECGs, stress ECGs, echocardiography and cardiac catheterisation facilities that form the backbone of modern cardiology. Access to advanced technologies, such as cardiac PET imaging and cardiac MRI, varies and may impact on the future ability of training centres to offer comprehensive training. The role of the HPCSA is important in this regard to regularly assess and accredit training centres as competent to offer the training programme. Some form of a training outreach programme may be required to give access to less well equipped units to some select technologies. Outreach in this context would cover both experts from select training centres spending time at training centres lacking in specific expertise as well as trainees from less well equipped centres spending time at centres with access to advanced technologies. Examples of such outreach programmes are already in place at some centres to ensure a balanced training program for all our trainees. The private sector is often mentioned as a means to access the latest technological advances and indeed most medical schools collaborate with colleagues in the private sector to ensure access to expertise and infrastructure. Our own unit recently placed its first atrial appendage occluder device in one of our patients with the assistance of colleagues from the private sector visiting our hospital. On the same day we were able to assist our colleagues in a private hospital by providing advanced imaging for a patient undergoing percutaneous closure of a paravalvular leak. The private sector is therefore an important part of the future training platform for South African cardiologists. However, the cardiology training centres at our public teaching hospitals will remain the cornerstone of our cardiology training program. The Department of Health, the Department of Education and our Universities will have to collectively address the requirements to maintain and develop the training programmes across the country, starting with the requirement of providing enough training posts.