

Peer review and accreditation in cardiac electrophysiology

An electrophysiologist's perspective on peer review by R. Scott Millar.

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ABSTRACT In line with the world-wide trend towards peer review and audit in all branches of medical practice, the Cardiac Arrhythmia Society of South Africa (CASSA) has begun a process of voluntary accreditation of Cardiac Electrophysiologists, beginning with those members of the Executive Committee of CASSA in active EP practice. The immediate aim is to provide other practitioners, the public and funders with a list of electrophysiologists who meet agreed standards of experience and competence. The long-term goal is the registration of Cardiac Electrophysiology as a sub-speciality of Cardiology. SAHeart 2008; 5:178-180

WHY PEER REVIEW?

Registration with the Health Professions Council of South Africa is a legal requirement to practice medicine. Specialist registration can only occur after recognized training and certification by an examining body, such as the Colleges of Medicine of South Africa, and now includes Cardiology. Surely this is enough?

While training at the certified training units is structured to provide exposure to all aspects of cardiology, the pace of change is very rapid, particularly in regard to invasive procedures. Most trainees will get reasonable exposure to percutaneous coronary interventions and will be able to build their skills on that base, but very few are exposed

sufficiently to invasive electrophysiology to enable them to practise independently in that field without further training and experience. Such training is hard to come by in SA, presently offered only at Groote Schuur in Cape Town, so most aspirant cardiac electrophysiologists go overseas for training. However, there is no legal requirement for this training before setting up practice as an electrophysiologist, nor is there certification by the Colleges of Medicine or any other body. There is a need to know who is an electrophysiologist by medical practitioners referring patients, patients seeking help, and funders who are being asked to pay for the procedures.

CASSA'S INITIATIVE

The Executive Committee (EXCO) of the Cardiac Arrhythmia Society of South Africa (CASSA) recognized the need for some form of accreditation of cardiac electrophysiologists and began to investigate this about 2 years ago. A subcommittee has drawn up criteria both for recent trainees in electrophysiology (EP) (Table I) as well as for practitioners who have been involved in the field for years (Table II). These criteria include training, practice patterns and experience. Members of CASSA EXCO who are in active EP practice have applied for and been granted accreditation by the subcommittee, led by me (as a retiree with the least conflict of interest), using the procedure outlined in Table II. The process is now open, on a voluntary basis, to all members of CASSA and SA Heart Association.

EXPERIENCE ELSEWHERE

There is a world-wide trend towards clinical audit and peer review of practitioners. Cardiothoracic surgeons in the USA were among the first to recognize the need and to institute procedures for recording the results of individual surgeons.⁽¹⁾ Cardiac surgery has proved to be a relatively easy subject for audit because the procedures are well defined, the primary outcome of in-hospital mortality is easy to measure and sophisticated data collection has been practised by cardiothoracic surgeons in different parts of the world.⁽²⁾ Individual New York State cardiac surgeons' mortality figures for coronary bypass grafting were first published in 1991, but an unintended consequence of this publication has been the avoidance of high-risk patients by many surgeons. Attempts have been made to adjust for risk to give a fairer estimate of performance. It is also recognized that results reflect much

more than the skill of an individual, but are strongly influenced by institutional factors, such as the quality of anesthesia and intensive care. Interestingly, there is no evidence that patients have used the figures when choosing which surgeon should perform their operation.

The landmark "Bristol case" in the United Kingdom precipitated intense debate on the subject of surgical results.⁽³⁾ This case, in which an unacceptably high operative mortality for congenital heart repair (arterial switch for transposition of the great arteries) was recorded by a senior surgeon, was brought to light by an anesthesiologist working in the same hospital. The "whistle blower" was initially ignored by authorities and ostracized by his colleagues. He subsequently emigrated to Australia. The enquiry proved him to have been correct, however, and precipitated widespread changes in clinical governance and review. Among the issues raised were those of the training of doctors in advanced procedures and how to approach the learning curve of doctors undertaking standard procedures. Surgical results for hospitals and individual surgeons are now in the public domain in the UK.

TABLE I: Requirements for candidates recently registered as Cardiologists in South Africa

| Training | |
|--|-----|
| At least 2 years beyond the requirement for registration as a Cardiologist. Should spend this period in a recognized academic training institution in SA or elsewhere, doing predominantly EP procedures, device implantation, and clinical management of patients with arrhythmias. Should attend courses for more specialized procedures, where appropriate (e.g. 3D mapping, ablation of atrial fibrillation), depending on the facilities and experience gained at the training institution. | |
| Numbers and types of invasive procedures to be completed over 2 years during training (as 1st operator) | |
| <i>Invasive EPS (including diagnostic studies)</i> | 100 |
| <i>Radio-frequency catheter ablation</i> | 50 |
| AV node modification for AVNRT or accessory pathway ablation | 20 |
| Other (atrial flutter; ventricular tachycardia, etc., other than AV node ablation) | 15 |
| <i>Permanent pacemakers</i> | 80 |
| Dual-chamber | 25 |
| Biventricular | 5 |
| <i>ICDs</i> | 5 |
| The above procedures must be clearly documented in a logbook, containing details of the patient's ID, age, diagnosis, indication for the procedure, nature of the procedure, outcome and complications. The logbook must be signed by the supervisor(s), and the candidate's competence certified by the head of the department in which the candidate completed EP training. | |

TABLE II: Criteria for retrospective accreditation as an established Invasive Cardiac Electrophysiologist

| Eligibility and Training | |
|---|-----|
| The applicant must be registered as a Cardiologist by the Health Professions Council of South Africa and, in addition, have at least 5 years of appropriate experience in invasive electrophysiology, supplemented by attendance at training courses. | |
| Clinical | |
| A large proportion of the cardiologist's practice should consist of patients with arrhythmias (>30%). | |
| For established Electrophysiologists seeking accreditation, the following numbers of invasive procedures should have been carried out in the previous 2 years: | |
| <i>Invasive EPS (including diagnostic studies)</i> | 150 |
| <i>Radio-frequency catheter ablation</i> | 100 |
| AV node modification for AVNRT or accessory pathway ablation | 50 |
| Other (atrial flutter; ventricular tachycardia, etc., other than AV node ablation) | 30 |
| <i>Permanent pacemakers</i> | 20 |
| Dual-chamber | 10 |
| Biventricular | 10 |
| <i>ICDs</i> | 10 |
| The indications for the above procedures should follow the guidelines published by the European Society of Cardiology (together with AHA & ACC), as subscribed to by the South African Heart Association. | |
| In addition to performing procedures, the Electrophysiologist should be seeing new patients and following old patients. Follow-up of patients with biventricular pacemakers and ICDs is particularly critical. A detailed knowledge of the complications, characteristics and quirks of the various devices is essential. It is not acceptable for such patients to be tested and advised by representatives of device manufacturers, without intimate involvement by the cardiologist. | |
| An accredited Electrophysiologist should be following a minimum of 50 patients with permanent pacemakers, 10 with biventricular pacemakers and 10 with ICDs. | |
| CASSA will give attention to an ongoing registry of all cases undergoing invasive EPS or device implantation. This may be done as part of the Cathlab database being developed by the SA Heart Association, but may need to be done independently, if the SA Heart database does not fulfil its requirements. It will be compulsory for all CASSA-accredited Electrophysiologists to provide ongoing information to this database, and to agree to periodic peer review of their input and results. | |

TABLE II: Criteria for retrospective accreditation as an established Invasive Cardiac Electrophysiologist *continued*

| Mechanisms |
|--|
| 1. Completion of a questionnaire documenting past training and experience, and current activity. |
| 2. Fulfil the criteria for invasive procedures performed in the previous 2 years, as listed above. |
| 3. Submit, on request, clinical details and relevant ECGs and EP traces of at least 3 of the most recent invasive EP studies performed. |
| 4. Submit, on request, clinical details and relevant ECGs in at least one ICD implant and one biventricular pacemaker implant. |
| <p>Details of the last 20 EPS should be available to the committee. A minimum of 3 of these will be selected for review of the tracings, together with review of the indications, procedure, outcome and complications. The committee may ask to review other patient records to assist in its assessment of the applicant.</p> <p>In the case of established Electrophysiologists applying for accreditation, the review will be performed by the chairperson of the committee (Prof Scott Millar), together with at least one other member who has no direct association with the candidate. In the case of a dispute, Prof Scott Millar will ask the President of CASSA to assist with the adjudication, and to choose a third reviewer (not involved in the initial review).</p> |

So far, cardiologists have not joined their surgical colleagues in submitting to an audit of their patients' outcomes, but are likely to follow. The National Health Service Information Authority, through the National Clinical Audit Support Programme, has developed the Central Cardiac Audit Database (CCAD). This project is designed for online clinical data collection, collation and analysis for adult and pediatric cardiac surgery, acute myocardial infarction, interventional cardiology and pacing/electrophysiology.⁽⁴⁾

Society has granted us as a profession the privilege of regulating ourselves. This is based on trust that our training provides the knowledge and skills necessary to serve the public, placing the interests of the patient first. Increasingly, the public is demanding transparency in this process and the assurance that individual practitioners are competent in their chosen field. Beyond the basic training provided by the universities, culminating in a medical degree, professional societies have taken the lead in prescribing training and assessing competence in specialized fields. However, the rapid development of medical technology and increasingly sophisticated means of treatment have outstripped the basic skills required for certification in broader medical specialties, and have resulted in splitting into smaller sub-specialties and even for skills in one particular procedure.

Organizations such as the American Heart Association, the American College of Cardiology and the European Society of Cardiology have cooperated in producing treatment guidelines, and also attempts to define the requirements for competence in a particular field, such as cardiac electrophysiology.⁽⁵⁾ CASSA has used these as a guide to developing the requirements for recognition as an electrophysiologist, with peer review of practice, in an attempt to assess competence in the field.

LONG-TERM GOALS

The current initiative was undertaken as an initial step towards registration of cardiac electrophysiology as a sub-speciality of cardiology, itself a sub-speciality of internal medicine. Much still needs to be done towards this goal, from persuading the HPCSA to recognize cardiac EP as a sub-speciality, to specifying training and designing and organizing an examination. South Africa is a long way from being able to provide outcome data for individual practitioners or institutions, but the "cathlab database" being developed by the SA Heart Association may ultimately fulfil this role, in line with international practice.

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