Introduction

One of the new factors of importance in medical practice in South Africa is the growing recognition of the role of hospital licensing and credentialing. Part of the process of consideration for accreditation of hospitals will include the level of qualifications and expertise that a hospital expects of the medical practitioners to whom that hospital grants clinical privileges.

In addition, the Health Professions Council of South Africa has requested the College of Anaesthetists of South Africa to define the "scope of practice" in the speciality of Anaesthesia.

In considering the qualifications and expertise in anaesthesia required for the administration of Anaesthesia by practitioners to patients, and the granting of hospital privileges to both Anaesthetists and Anaesthesiologists, some background knowledge of the status of Anaesthesia in South Africa is necessary.

The standards of specialist training in anaesthesia in South Africa are amongst the best in the world. However, there are inadequate numbers of specialist anaesthetists (anaesthesiologists) to meet the needs of the country. The internationally recommended ratio of anaesthesiologists for the population is 1:7-8,000. In South Africa the ratio is less than 1:50,000. In Poland, which is one of the worst in Europe, the ratio is 1:20,000. There are thus insufficient anaesthesiologists in South Africa.

As a result of this deficiency, a large proportion of the anaesthetics administered in South Africa are performed by non-specialists, some of whom do not have training beyond that of the basic internship programme. This document serves to set out what reasonable scope of practice in anaesthesia can be expected from practitioners in the Republic of South Africa. Various levels of training as well as the practitioner's location have been taken into account.

At the outset it is important to realise that South Africa is a vast country encompassing both first and third world standards in various locations. At present large cities tend to maintain excellent standards and are covered by specialist anaesthesiologists, while smaller secondary hospitals and rural areas are largely reliant on less skilled practitioners whose level of training in anaesthesia varies greatly.

It is generally accepted that the period of training in anaesthesia received as an undergraduate combined with the statutory exposure during internship is not adequate to acquire the necessary skills for the performance of safe anaesthesia. Nevertheless many doctors either by choice or out of necessity regularly embark on the administration of anaesthesia.

At present the Health Professions Council of South Africa neither sets a reasonable standard for the training of undergraduates in anaesthesia nor does it regulate safe standards for the practise of anaesthesia in general. It is a distinct reality that many patients are exposed to hazardous anaesthesia in untrained hands in often less than ideal circumstances. It behoves the Health Professions Council to take an urgent look into standards and practice of anaesthesia in order to improve the standard of service delivery around the Republic.

The Impact of Expertise in Anaesthesiology on Patient Outcome

The relevance of training in anaesthesia should not be beyond scrutiny. In this regard, it should be noted:

- Anaesthesia is a high-risk speciality as regards patient outcome; errors and mistakes can cause death within minutes.
- The high risk involved in the practice of anaesthesia is recognised by medical insurance companies, which levy a higher subscription rate for anaesthesiologist members.
- It is probably a correct assumption that the better the training, the better the quality of service (see below).
- The relative outcome of specialist versus non-specialist anaesthesia as regards patient morbidity and mortality has not been evaluated in South Africa; data is thus based on comparative studies from different locations.

<table>
<thead>
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<th>STATUS OF ANAESTHETIST</th>
<th>DEATH RATE</th>
<th>PLACE</th>
<th>AUTHOR</th>
<th>YEAR</th>
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<tr>
<td>Specialist</td>
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<td>England &amp; Wales</td>
<td>Lunn (CEPOD)</td>
<td>1987</td>
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<td>Specialist/Non-specialist</td>
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<td>Groot Schuur</td>
<td>Harrison</td>
<td>1990</td>
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<tr>
<td>Non-specialist</td>
<td>1:3,000</td>
<td>Harare</td>
<td>McKenzie</td>
<td>1994</td>
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<td>Coetzee</td>
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Local experience confirms this trend. A report from an urban private practice, where both specialists and non-specialists function in the same institutions, reads as follows:

“During the period 1988-95 the practice had 6 critical incidents in 60,000 anaesthetics with Specialist Anaesthesiologists. In the same time frame, there were at least 25 critical incidents in 5,000 anaesthetics administered by untrained Anaesthetists. These were the reported incidents. Nursing staff have indicated that untrained Anaesthetists have problems in 6 out of 10 anaesthetics and this is mostly in young, healthy patients.”

Whilst this last comment may be regarded as something of an overstatement, nevertheless the general tenor of this report emphasises the extent of the problem.

Current standards of training
Undergraduate students are exposed to a minimum period of two weeks of training in anaesthesia as part of the medical undergraduate curriculum. There is no consensus between medical schools and some undergraduate students receive considerably more exposure from both a formal teaching and practical hands on perspective. The net result is that it is totally unreasonable at present to expect or discern a distinct standard of training and exposure. Some medical graduates may have a vague opinion on the administration of anaesthesia while the vast majority are hopelessly at sea.

The statutory exposure to forty anaesthetics during the internship year has become a laughable legal hurdle to graduates wishing to register with the HPCSA. While it is intended that every intern personally administer forty anaesthetics under supervision during their internship training most interns experience a two-week anaesthetic rotation where they will at best observe and assist in the administration of the necessary number of anaesthetics. Most interns use the time in anaesthesia to brush up on essential skills like airway maintenance and intubation rather than gain experience in the administration of anaesthesia. It is also reality that a significant proportion of the anaesthetics that interns are exposed to are regional anaesthetics and not general anaesthetics.

After completing the above periods of training it is hopeless to expect a registered medical practitioner to have any real working knowledge or approach to anaesthesia.

Postgraduate training
Postgraduate training in anaesthesia may be either on an ad hoc basis or via more formal instruction. The College of Anaesthetists (CA) offers both Diploma and Fellowship certification in anaesthesia.

Diplomate graduates of the CA are required to undergo a minimum period of six months supervised training in an approved institution as well as a formal assessment and examination. Diplomates can be expected to have safe and well-rounded approach to the administration of regional and general anaesthesia as well as conscious sedation in low risk patients undergoing non-major surgery.

Fellows of the College undergo a minimum four-year programme, including exposure to the subspecialty of critical care. At the end of registrar-training fellows are rigorously assessed as to their competence to practice the speciality of anaesthesia. The College examination at present takes the form of a two-part examination with the first part being completed during the period of registrarship. These examinations are conducted by examiners drawn from all the teaching institutions in the country thus ensuring external assessment and the setting of a national standard.

An alternative path to specialization exists in that practitioners may complete a Master’s degree in anaesthesia through any of the accredited Universities. As with the College Fellowship qualification, completion of an MMed together with four years of anaesthesia training allows practitioners to register as specialist anaesthesiologists with the HPCSA.

Post certification training and continuing Professional Development
Subsequent to the HPCSA introducing the concept of continuing professional development practitioners are expected to acquire points toward ongoing education and re-certification. It is important to note that for general practitioners practising anaesthesia no regulation applies to the obtaining of points in anaesthesia specifically. It is therefore possible for the general practitioner anaesthetist who may apply a substantial amount of practice time to anaesthesia to obtain ongoing registration without receiving any ongoing training or exposure in this field. The same would apply to the diplomate anaesthetic practitioner.

Registered specialist anaesthesiologists by the nature of their practice tend to gain the necessary CPD points in anaesthesiology. As their practice is confined to anaesthesia their points are earned in appropriate forums and the goal of ongoing education is achieved.

Recommendations for the scope of practice of anaesthesia
The two large groups here are INDEPENDENT practice and SUPERVISED practice. In order to practice anaesthesia it is recommended that practitioners be accredited to practice anaesthesia in either capacity.

1. The community service doctor
This group of practitioners is often placed in a position where they are required to administer anaesthesia because there is no other trained medical practitioner available. The recommendation is that these doctors receive 2 months of supervised training and should thereafter only administer anaesthesia under supervision, which may be remote.

2. The general practitioner
The level of training given at an undergraduate level, as outlined previously, cannot be seen as sufficient to allow for the independent practice of anaesthesia. A general practitioner who has no additional training in anaesthesia falls into this group.

In a dire emergency such a practitioner may be expected to provide anaesthesia care to the best of his ability (ASA class V). Every effort should be made to have the patient transferred to a centre where better care is available or the case should at the very least be discussed with a specialist anaesthesiologist.

3. The diplomate anaesthetist
The diplomate anaesthetist is eligible for independent practice of both general and regional anaesthesia in fit and
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healthy patients (ASA class I) and patients with controlled systemic disease (ASA class II). Patients with poorly controlled systemic disease or functional limitation should only be anaesthetised in consultation with a specialist anaesthesiologist (ASA class III) i.e. with a supervisor.

Regarding paediatric anaesthesia it is reasonable to expect the diplomate to provide safe anaesthesia for fit and healthy paediatric patients over the age of two years, providing the practitioner has maintained the necessary skills and the nature of the intended surgery is minor and elective.

The scope of practice of the diplomate with regard to obstetric anaesthesia is broader in that the diplomate should be capable of providing safe and appropriate anaesthesia to all obstetric patients barring those with severe systemic disease (ASA class III).

In the face of emergency, or where no alternative exits, the diplomate may in consultation with a specialist anaesthesiologist administer anaesthesia to sicker patients. (ASA class IV and V) This constitutes supervised practice.

4. Specialist in training (registrar)
The anaesthetic registrar is permitted to administer anaesthesia under specialist supervision. This supervision must be in a ratio of 2:1 (2 registrars to 1 specialist). Under circumstances where the anaesthesia is low risk this may be extended to 4:1 and if high risk 1:1.

5. The Specialist anaesthetist (anaesthesiologist)
The specialist anaesthesiologist can be expected to provide anaesthesia services independently to all patients irrespective of the state of health or co-existing disease. (ASA class I, II, III, IV, and V) It behoves the individual practitioner to confine his practice to those areas in which he has maintained the necessary skill. This applies particularly to the sub-specialties of cardiac, thoracic, neuro and paediatric anaesthesia.

Summary
In view of the risks involved and the possibility of simple errors resulting in severe negative outcomes such as hypoxic brain damage and death, the Scope of Practice for the various classes of medical practitioner should be confined as follows:

- Community Service Doctors:
  - 2 months’ training under direct supervision
  - Subsequent anaesthetic practice under supervision, which may be remote

- General Practitioners
  - Independent practice of anaesthesia not recommended.

- Diplomate Anaesthetists
  - Independent practice for ASA I and II patients.
  - Supervision for all other ASA categories.

- Registrars (specialists in training)
  - Supervision at all times.

- Specialist Anaesthetists (Registered as Anaesthesiologists)
  - Independent practice for all categories of patient.
  - It is suggested that elective neonatal anaesthesia only be conducted in specialist units.

Conclusion
It is only through thorough training and ongoing education that the standard of anaesthesia care within South Africa can be raised in order to protect patients. This needs to be addressed at undergraduate as well as postgraduate level. The issue of CPD accreditation specifically in anaesthesia should receive urgent attention.

This document was prepared for the South African Society of Anaesthesiologists by the Executive Committee, with input from Doctors I Joubert, A Levin, D Lines and Professors D Morrell and C Lundgren.

Appendix

The American Society of Anaesthesiologists Physical Status Classification:

- Class I
  - A fit and healthy patient

- Class II
  - A patient with mild systemic illness (e.g. controlled hypertension)

- Class III
  - A patient with severe systemic disease that is not incapacitating (e.g. angina)

- Class IV
  - A patient with severe systemic disease that is incapacitating (e.g. unstable angina)

- Class V
  - A moribund patient who is not expected to live for longer than 24 hours, with or without surgery.

The suffix “E” denotes a patient undergoing emergency surgery.