EDUCATION, TRAINING AND ACCREDITATION

Orthopaedic education - accreditation

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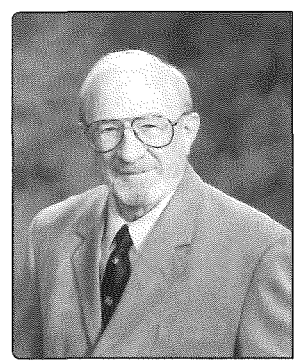

I am most appreciative of the opportunity given me by Professor Gräbe to contribute these few words about the accreditation of orthopaedic education. In 1989 at the meeting of the South African Orthopaedic Association I was honoured to present the Francois P. Fouchè Lecture titled "The Training of Orthopaedic Surgeons".[1] That lecture included some material on the accreditation of orthopaedic residency programmes in the United States. I will enlarge on that subject in the following dissertation.

In the United States the accreditation of orthopaedic residency programmes is only one step in the overall educational process. Medical schools are accredited by the Liaison Committee on Medical Education. Residency programmes are accredited by the specialty residency review committees (RRC) under the Accreditation Council for Graduate Medical Education (ACGME). Certification of the individual orthopaedic surgeon is done by the American Board of Orthopaedic Surgery (ABOS). Licensure to practise medicine in the United States is a function of the medical licensure board of each state. Privileges, what the individual orthopaedic surgeon can do in a hospital, are the decision of each individual hospital medical board.

The Accreditation Council for Graduate Medical Education (ACGME) has overall responsibility for the accreditation of all graduate medical education. The ACGME has representatives from the American Board of Medical Specialties, American Hospital Association, American Medical Association, Association of American Medical Colleges and the Council of Medical Specialty Societies.

The duties of institutions and residency programmes are described in the Graduate Medical Education Directory 2002-2003 published by the American Medical Association.[2] The following two paragraphs are from that publication.

"The single most important responsibility of a sponsoring institution of GME (Graduate Medical Education) is to ensure the provision of organised educational programs with guidance and supervision of the resident, facilitating the resident's professional and personal development while ensuring safe and appropriate care for patients. A resident takes on progressively greater responsibility throughout the course of a residency, consistent with individual growth in clinical experience, knowledge, and skill.

The education of resident physicians relies on an integration of didactic activity in a structured curriculum with diagnosis and management of patients under appropriate levels of supervision and scholarly activity aimed at developing and maintaining life-long learning skills. The quality of this experience is directly related to the quality of patient care, which is always the highest priority".[2]

The ACGME accredits institutions to be certain they meet the requirements for resident educational programmes. This covers those things which are common to all residency education.

Residency programmes are accredited by Residency Review Committees (RRC) which are specialty specific. The RRCs do the accreditation under authority and periodic review by the ACGME. In a somewhat simplistic approach I look on the role of the ACGME and RRC as assuring an orthopaedic resident that the residency programme offers him/her the opportunity of a quality education in orthopaedic surgery.

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Whether the resident gets the education is then up to the resident and whether they learned what they needed is determined by the ABOS. The American Board of Orthopaedic Surgery "exists to serve the best interests of the public and of the medical profession by establishing education standards for orthopaedic residents and by evaluating the initial and continuing qualifications and competence of orthopaedic surgeons".[3] The requirements for programme accreditation and the educational requirements for certification of the resident must be and are compatible. In this manner both organisations, the ACGME / RRC and ABOS, complement each other in the education of orthopaedic surgery residents.

The RRC for orthopaedic surgery is composed of nine orthopaedic surgeons, three appointed by the American Board of Orthopaedic Surgery, three by the American Academy of Orthopaedic Surgeons and three by the American Medical Association, and one orthopaedic surgery resident who is selected by the RRC from those recommended by the programme chairmen. The orthopaedic surgeon members have a six-year appointment and the resident member has a two-year term. Support staff for the RRC are members of the ACGME staff. Scheduling of site visits, collection of fees for the site visits and disbursing funds are done through the ACGME. All ten members of the RRC have equal votes on actions by the RRC. In addition the Executive Director of the American Board of Orthopaedic Surgery is *ex-officio* to the RRC without vote.

Historical perspective

In orthopaedic surgery, approval of residency programmes began informally soon after the incorporation of the American Board of Orthopaedic Surgery.[4] After the Second World War the American Medical Association (AMA) which was also accrediting programmes and the American Board of Orthopaedic Surgery (ABOS) began working together. About 1952 there was a more formal Residency Review Committee formed with orthopaedic surgeon representatives from the AMA and the ABOS. The American Academy of Orthopaedic Surgeons joined the RRC with three appointments in 1972. This brought the number of members to nine. In the 1980s the ACGME was formed to oversee the RRCs and assure appropriate uniformity in the accreditation of all specialty education and institutional responsibility. A resident member was added to the RRC about four years ago to obtain direct input from the residents' viewpoint.

Special requirements

Orthopaedic surgery residency programmes must meet a set of special requirements which originate with the RRC but require ACGME approval. These requirements include the following areas.

All programmes are now for five years, of which four must be in orthopaedic surgery; however, one year, if in accredited resident position, may be spent in orthopaedic research. This is rarely done as most programmes want to use all four orthopaedic years in clinical residency.

The first year must now be under the direction of the director of the orthopaedic surgery residency programme and must contain six months of structured education in surgery which includes vascular surgery, plastic / burn, surgical intensive care and multi-system trauma; three one month rotations selected from emergency medicine, medical / cardiac intensive care, internal medicine, neurology, neurological surgery, paediatric surgery or paediatrics, rheumatology, anaesthesiology, musculoskeletal imaging and rehabilitation. No more than three months may be spent on orthopaedic surgery.

The remaining four years are spent on orthopaedic rotations. The duration of the various clinical areas and subspecialty rotations are prescribed by the educational requirements of the American Board of Orthopaedic Surgery. These include a minimum of six months of paediatric orthopaedics, 12 months of adult reconstruction and 12 months of orthopaedic trauma. Most programmes include subspecialty rotations in these areas including total joints, sports medicine, hand and upper extremity surgery, orthopaedic oncology, spine surgery and foot/ankle surgery.

The sponsoring institution must be the primary site where the residents have extensive experience in patient care. It is also the primary site for didactic and clinical conferences including the basic sciences. The governing body of the sponsoring institution must provide support for the programme director in meeting his duties. When other institutions are used for resident education as part of the programme there must be affiliation agreements which spell out their contribution and obligation to the programme. Service is not considered a reason for a residency programme or a clinical rotation.

The programme director is responsible for the content and organisation of the programme; for recruiting faculty; for obtaining adequate teaching and patient care facilities; for selecting residents; for monitoring residents' progress including support and / or disciplinary actions if needed; regular evaluation of residents' progress and informing them of their progress; and supervision of the residents. The programme director must have the authority to control the residents' educational experience in the affiliated hospitals.

Resident supervision and education is also a function of the attending staff. The attending staff must maintain their own academic interests, have a strong interest in teaching residents and devote adequate time to these areas. There must be at least three faculties who devote at least 20 hours a week to the programme. There must be at least one full time equivalent (45 hours per week) faculty member for every four residents in the programme.

The programme must have the other professional, technical and clerical personnel to support the educational mission of the programme.

Clinical aspects

The clinical problems seen by the residents and available for resident education must be of sufficient variety and volume to support the educational programme. These problems must include both non-operative and operative cases including outpatient and inpatient experience. The clinical problems must "include adult orthopaedics, including joint reconstruction; paediatric orthopaedics, including paediatric trauma; trauma, including multiple system trauma; surgery of the spine, including disk surgery, spinal trauma, and spinal deformities; hand surgery; foot surgery in adults and children; athletic injuries, including arthroscopy; metastatic disease; and orthopaedic rehabilitation, including amputations and post-amputation care".[2]

Residents must be able to demonstrate "compassionate, appropriate and effective"[2] patient care including preventive care.

"Residents must be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices".[2] In the course of meeting this requirement the residents must be taught to utilise scientific studies and methods.

Residents must be able to demonstrate effective communication skills with patients and with professional associates.

"Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population".[2]

The residents must be able to respond and utilise the medical system in an effective manner for patient care.

"Resident education must include orthopaedic oncology, rehabilitation of neurologic injury and disease, spinal cord injury rehabilitation, orthotics and prosthetics, and the ethics of medical practice".[2]

Educational programme

The educational programme must be such that the residents have the opportunity to take part in providing continuity of patient care. Orthopaedic education must include non-operative outpatient care of appropriate orthopaedic problems. In the course of the residents' education they must be given increasing responsibility, under supervision, for patient care in keeping with their knowledge and abilities. It is important to emphasise that the patients seek an orthopaedic surgeon because they have a problem and not as cases for resident education. Staff supervision is therefore a necessity to assure appropriate and quality patient care.

The residency programme must have at least four hours a week of formal teaching conferences and seminars. These must be regularly scheduled and held with faculty as either presenter or discusser. These conferences should include clinical indications and treatment, outcome evaluations and basic sciences. The basic sciences must include anatomy taught with dissection and lectures; orthopaedic pathology which includes correlative pathology; biomechanics in seminars and conferences; and, organised teaching in imaging techniques and indications. The basic sciences must be integrated into the daily discussions of appropriate patient problems.

The residents must have instruction in basic motor skills including the use of appropriate instruments. This instruction also includes arthroscopy.

Graduate medical education must take place in an environment of inquiry and scholarship. Residents and the clinical staff must take part in journal clubs, clinical discussions and critical consideration of scientific articles. Instruction must include experimental design, hypothesis testing and current research methods. Space and support personnel for investigative studies must be provided by the programme. A list of resident and faculty research projects must be kept and be available for review. There must be library facilities with appropriate texts and journals, electronic retrieval and availability of appropriate library material at all times.

Evaluation

The residents must be evaluated by the teaching faculty on a regular basis and the results of the evaluations must be discussed with each resident at least twice a year. The faculty should evaluate the programme including the affiliated hospitals at least annually and this should include input from resident evaluations of the programme. In this regard each programme should have written goals for the programme by year of training and by rotations including affiliated hospital rotations.

The programme should use resident performance results such as the Orthopaedic In-Training Examination (OITE) and ABOS certifying examinations in the evaluation of the programme.

Each residency programme is evaluated by the RRC at least every five years and more often if the programme has difficulties, is on probation or has a change of programme director. Dates for review and site visitors are determined by the RRC.

The office of the Secretary of the RRC for orthopaedic surgery notifies the programme to be reviewed of the date and the site visitor. The programme must complete a document giving information about the programme (Programme Information Form - PIF) which includes the institutions in the programme; director and staff at each institution including the contribution from that institution and the *curriculum vitae* of the staff; a narrative description of the clinical programme, basic science lectures, clinical sessions, and research staff and projects; a diagram of the resident's rotations for the five years of training which includes the institution, the duration of the rotations and the clinical area; a list of the residents in the programme by year of training; the pass / fail record of the previous five years' residents on the certification examination by the American Board of Orthopaedic Surgery; and, a list of the rotations and operative cases for the previous year's finishing residents. A copy of the Programme Information Form is sent to the site visitor at least two weeks before the scheduled visit.

The site visitor's function is to verify the information provided by the programme, address the status of previous deficiencies and clarify any parts of the PIF which are unclear. The site visitor also lists any areas which he/she believes warrant special attention by the RRC. The site visitor follows a specified format called the Specialist Site Visit Report (SSVR).

After the site visit three copies of the PIF and the SSVR are sent to the RRC. Two members of the RRC review these reports before the semi-annual meetings of the RRC and report to the full committee. These two reviewers do make recommendations for action, the basis of which is deviation form the special requirements for residency programmes in orthopaedic surgery and from the institutional requirements. The Committee may raise further questions for the programme director. The Committee makes the accreditation, including the time for subsequent review and the number of residents per year and total number of residents in the programme.

In 1985-1986 the RRCs for orthopaedic surgery, general surgery and plastic surgery developed special requirements for post-residency training (fellowships) in Surgery of the Hand. Concurrent with this the respective certifying boards jointly developed an examination for Added Qualifications for Surgery of the Hand. This certifying examination like that for the American Board of Orthopaedic Surgery is time-limited to ten years.

Following the accreditation of hand surgery fellowships the ACGME approved the RRC for Orthopaedic Surgery's request to develop Special Requirements for fellowships in adult reconstruction, spine, paediatric orthopaedics, musculoskeletal oncology, sports medicine, foot/ankle and orthopaedic trauma. As with the accreditation of residency programmes the accreditation of fellowships gives assurance to those taking the fellowships that there is an opportunity for a quality education experience. At this time the American Board of Orthopaedic Surgery does not offer certification examinations in any of these other fellowship areas.

Different methods of accreditation

It is apparent from this presentation that accreditation of residency programmes in the United States is a detailed and formal process. This is necessary because of the large number of residency programmes and the diversity of sponsoring institutions, i.e. university, private hospital, county hospital and military. Other countries with fewer residency programmes use different methods of accreditation and certification of orthopaedic surgeons. In 1995 I was permitted by Professor Einhard Erken and Professor Roelie Gräbe to do a site visit very much along the lines used in the United States at the University of the Witwatersrand and the University of Pretoria, respectively. At that time the structure of those programmes differed from each other and to varying degrees from those in the United States. I know several South African orthopaedic surgeons and am familiar with the practice of orthopaedic surgery in South Africa so I know that your system produces excellent orthopaedic surgeons. In Canada all of the orthopaedic residency programmes are university-based and are accredited at the same time the university medical school is accredited.[5] In Belgium the system is again different with the number of residents determined nationally and entrance and continuation in orthopaedic surgery dependent on examinations. The last examination at the end of the six years of residency also accredits them to practise.[6] Again I know these systems produce excellent orthopaedic surgeons.

Summary

In summary I have presented the accreditation of residency programmes in the United States which is a system developed to ensure the opportunity for a quality education in orthopaedic surgery. Other systems in other countries also produce excellent orthopaedic surgeons. Those items which are common to all residency programmes in orthopaedic surgery include dedicated programme directors and attending staff (faculty), an organised educational programme, patient care problems of sufficient number and variety, and often some research experience. The one thing that we must not forget in the increasing technology of orthopaedic surgery and the pressures for "production of orthopaedic care" is that our primary goal was and must be providing competent, compassionate and ethical care for our patients.

References

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