Title:

REVISED GUIDELINES FOR EDUCATIONAL REQUIREMENTS FOR SPECIALISATION
IN ENDODONTICS IN AUSTRALIA AND NEW ZEALAND (July 2020)

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REVISED GUIDELINES FOR EDUCATIONAL REQUIREMENTS FOR
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Abstract

These revised guidelines developed by the Australian Society of Endodontology Inc. and the Australian and New Zealand Academy of Endodontists for educational requirements for specialisation in endodontics in Australia and New Zealand (version 2020) propose minimum criteria for training Specialists in our field. The document contains a definition of endodontics, and a description of the scope of endodontics. It

proposes criteria for selection of the students, describes the proposed main features and a general outline of the education programme.

Keywords: curriculum; education; endodontics; endodontology, specialties, dental.

NOTE: The original Australian Society of Endodontology (ASE) “*Guidelines for Educational Requirements for Specialisation in Endodontics*” were first published in the April 1979 issue of the *Australian Endodontic Newsletter* (pp. 18-20). The present revision (version 2020) involved the ASE and Australian and New Zealand Academy of Endodontists (ANZAE) in a process that started in April 2019 during the endodontic educators meeting held in Adelaide and finished in July 2020.

INTRODUCTION

The specialty of endodontics has been established in Australia since 1972-73 and in New Zealand since 1990. The need for practitioners with advanced endodontic training and specialist status is accepted by dental organisations and the registration authorities as being essential and an important aspect that helps to maintain a high standard of dental care within the community. Specialists are expected to contribute to Endodontic education and research within various Australian and New Zealand Dental Schools

In accordance with the recommendations of the Dental Board of Australia (<https://www.dentalboard.gov.au/Registration/Specialist-Registration/Specialist-registration-FAQ.aspx>) (the “Board”) and the Dental Council of New Zealand (the “Council”) for the training of dental specialists (<https://www.dcnz.org.nz/i-want-to-practise-in-new-zealand/dentists-and-dental-specialists/prescribed-qualifications-for-dental-specialists/>), for a dentist to be recognised as a specialist endodontist they shall have:

1. Completed a minimum of two years general dental practice (This requirement may be achieved by experience outside Australia or New Zealand, subject to consideration and approval by the Board or the Council.)
2. Meet all other requirements for registration as a general dentist (e.g. be fit for registration and must be competent to practise within that scope of practice)
3. Completed an approved/prescribed program of study/qualification for specialist registration in Australia or New Zealand. Alternatively, qualification equivalent pathways are available. In Australia, where a person holds a qualification not approved by the Board, the qualification is assessed against specific criteria to determine whether the qualification is substantially equivalent to a program of study approved by the Board (<https://www.dentalboard.gov.au/Registration/Specialist-Registration/Specialist-registration-FAQ.aspx>). In New Zealand, for non-prescribed qualifications training and experience are assessed by the Council (<https://www.dcnz.org.nz/i-want-to-practise-in-new-zealand/assessment-of-individual-qualifications-training-and-experience/>).

DEFINITION OF ENDODONTICS

Endodontics is that branch of Dentistry concerned with the morphology and pathology of the pulpo-dentine complex and the periradicular tissues. The study and practice of Endodontics encompasses the basic clinical sciences including the biology of the normal pulp, and the aetiology, diagnosis, prevention, diagnosis and treatment of diseases and injuries to the pulp and associated peri-radicular tissues.

SCOPE OF ENDODONTICS

The scope of endodontics encompasses the comprehensive diagnosis and treatment of pulp and periradicular conditions including pulp sensibility testing; radiology; dentine desensitisation and protection; vital pulp therapy including pulp capping; pulpotomy and pulpectomy; management of primary or immature permanent teeth with pulp or periradicular disease; chemomechanical debridement and subsequent filling of the root canal system; surgical removal of pathological periapical tissues; surgical management of root canals including placement of retrograde root fillings; endodontic re-treatment procedures; hemisection and root resection procedures; management of a discoloured crown; management of cracked teeth and root fractures; restoration of endodontically-treated teeth; management of oral and dental trauma including repositioning and splinting of luxated teeth, replantation and splinting of avulsed teeth and management of related endodontic complications of trauma; intentional replantation and auto-transplantation of teeth; management of root resorption and perforations; management of immature roots/root canals.

SELECTION OF STUDENTS

Selection of a student should be based on the University's academic qualifying requirements and selection criteria. It considers an applicant's ability to demonstrate interest and commitment to the chosen specialty and motivation for further study in the field of endodontics. Potential students should demonstrate enthusiasm for graduate education and evidence that the decision has been thought through. They should demonstrate good communication skills and a likely capacity for establishing and maintaining rapport with patients in a clinical setting.

EDUCATIONAL PROGRAMME

Courses of study in Australia and New Zealand are university-based and arranged according to the availability of facilities and staff within the various Dental Schools, where clinical instructors should be registered endodontists. Local University By-laws and Rules for specialist training programmes may prescribe additional requirements to those outlined below.

Training programmes should be the equivalent of three years full-time study.

It is recognised that a student should have a principal academic supervisor who is an Endodontist allocated by the Dental School in which he/she will be working for the duration of the course. Training programmes should be supervised by a programme director who is a registered specialist Endodontist.

Merit is also seen in having external assessors review the student's clinical progress at regular intervals. Separate supervisor(s) may be allocated for the research project where other areas of expertise are required.

Time Allocation - A minimum of 50% up to a maximum of 60% of the total course time should be devoted to clinical activities. The remaining time should be allocated to didactic and research activities. Students should also participate in the endodontic teaching programme for dental students for a minimum of 10% of the course time.

GENERAL OUTLINE OF PROGRAMME

The training programme is designed to develop theoretically and clinically competent endodontists who are reflective, potential leaders and educators in the field.

1. Basic Sciences

The program should include relevant aspects of the basic sciences so students develop advanced knowledge, translational understanding and application of anatomy, physiology, histology and embryology to practice. Such disciplines include oral pathology, molecular biology, oral microbiology, immunology, pharmacology, neurology, general medicine, biostatistics and research methodology.

2. Clinical Sciences

The program should include relevant aspects of the clinical science disciplines which have a greater application to endodontics and which require a higher level of knowledge and understanding than that provided during the primary dental degree.

3. Endodontics

An intensive course of reading, tutorials and seminars should be devised to cover current endodontic theory and practice and support self-directed study. Early in the course, familiarity should be established with all recognised textbooks and high

quality journals on endodontology, and this should be maintained throughout the entire course. Access to library resources for review of relevant literature, both past and present, is essential in conjunction with regular assignments and seminars. Training on how to search literature and critically appraise research evidence and outcomes should be provided.

Encouragement should be provided for engagement in continuing professional development activities which include content relevant to the science and practice of endodontics.

The clinical programme should be broad and should include opportunities for multidisciplinary engagement to provide wide experience in endodontic practice.

The formal training programme should provide extensive knowledge and/or experience in the field of endodontics (see Appendix One for suggested content).

4. Research Training

An important part of the advanced training programme is a research project of direct application to endodontics. This provides the student with valuable experience in research methodology and critical evaluation of the relevant literature. The student should plan the research project in conjunction with the supervisor(s). The research project should be completed in accordance with AQF Level 9 extended or NZQF Level 10 requirements and the University's requirements. Ideally, a manuscript should be submitted for publication in a peer-reviewed international dental journal. Students should also be encouraged to present the results of the project at scientific meetings (e.g. ANZAE, ASE Inc, International Association for Dental Research (ANZ Division), and other relevant dental meetings).

5. Assessment of the Research Project

The research report/dissertation/thesis should be submitted to at least two examiners for assessment. At least one of these examiners, but preferably both, should be an "external examiner" who has had no contact with the student during the training programme. The external examiner(s) should preferably be familiar with the general topic of the research and should have teaching and research experience at the Doctor of Clinical Dentistry level. It is also recognised that each University may have

its own rules/regulations regarding examination of a research report/dissertation/thesis.

6. Case Documentation

Students should fully document their cases and maintain a logbook/case portfolio for assessment by supervisors and examiners. The logbook/case portfolio should include a written summary of the case, all relevant radiographs, photographs, histopathology reports, referral letters, etc. It should also include an overall summary of the types of cases managed by the student so supervisors and examiners can ensure that each student has gained a broad range of experience.

Students should be encouraged to participate in the ASE Inc. Annual Case Report Competition and they should also consider publishing interesting cases in local, national or international dental and endodontic journals.

7. Inter-relationships with Other Disciplines of Dentistry

Close co-operation with the relevant departments that teach Restorative Dentistry, Periodontics, Oral and Maxillofacial Surgery, and Paediatric Dentistry as well as other departments (such as pain clinics, Accident and Emergency departments of major teaching hospitals providing primary care of acute dental trauma) should be established and maintained.

Fixed and removable prosthodontics (including implantology), dental and maxillofacial radiology, periodontology, paediatric dentistry, orthodontics, oral pathology and oral medicine and special needs dentistry should all receive some time allocation during the training programme. Attendance at selected postgraduate courses or appropriate parts thereof should be encouraged.

8. Teaching Experience

Students should be involved in teaching duties such as the instruction of dental students in pre-clinical and clinical endodontics. This could be reinforced by the presentation of seminars and other class meetings in endodontics to the dental students. Where possible, students should attend courses/seminars on teaching

methods that are applicable to university teaching and continuing professional development activities in endodontics.

9. Experience in Endodontic Practice

Students should be encouraged to spend time observing and assisting Endodontists in private or public endodontic clinic(s). This provides additional clinical experience and allows direct observation of the many facets of speciality practice including practice management, report writing and the ethics associated with specialist practice.

10. Progressive Assessment

Students should be formally assessed to ensure his/her progress and preparedness is at the expected level for the stage of learning to proceed in the programme. This assessment could include written and oral examinations and an update of the research work. In addition, the logbooks/case portfolios should be assessed at regular intervals. Students should receive feedback on their progress after each informal and formal assessment and where necessary remedial support should be offered.

11. Final Assessment

Each year of the course should have formal end-of-year examinations to assess a student's progress in all aspects including knowledge and clinical skills. At the end of the final year, at least one external examiner should be engaged to assess the student's knowledge, clinical skills and the research project. External examiners should not have had any contact with the student during the training programme. It is preferable that at least one of the external examiners come from another state of Australia or New Zealand, and have experience in teaching and/or examining at the Doctor of Clinical Dentistry level.

12. Continuous Education

The role of continuous education and lifelong learning should be highlighted throughout the programme. Students should also maintain their Continuing Professional Development (CPD) throughout the training programme as required by the Board and/or Council because formal degree courses for specialist training are not considered by the Board/Council to be CPD activities. Students should be encouraged to maintain a broad range of CPD activities in all areas of dentistry.

CONCLUSION

The Australian and New Zealand Academy of Endodontists and the Australian Society of Endodontology Inc. believe that these Guidelines for a course leading to a higher qualification in endodontics satisfy the educational requirements required for recognition nationally and internationally as a specialist Endodontist.

These Guidelines, particularly the detailed course content (Appendix One), should be reviewed regularly to ensure that they continue to provide such an educational background.

APPENDIX ONE – SUGGESTED DETAILED COURSE CONTENT

- Embryology and developmental defects affecting the teeth
- Root canal morphology including teeth with genetic and developmental abnormalities
- Microbiology and immunology of pulp, root canal and periapical conditions
- Endodontic pathology
- History of the discipline and a thorough knowledge of the endodontic literature
- Patient assessment and medical history
- Diagnosis of pulp, root canal and peri-radicular conditions
- The differential diagnosis of other conditions that have similar presentations to pulp, root canal and periapical conditions
- Differential diagnosis of oro-facial pain
- Pain management, including pharmacology and psychology
- Evaluation of previous endodontic treatment
- Dental and maxillofacial radiography and radiology techniques including the assessment and interpretation of images
- Clinical photography
- Endodontic materials and instruments

- Use of magnification and the dental operating microscope
- Local anaesthesia and sedation
- Infection prevention and control in dental practice
- Methods for isolation of teeth during endodontic treatment
- Endodontic management of teeth with infected root canal systems and associated periapical pathosis
- Methods of debridement and filling of root canals
- Management of canal obstructions and iatrogenic problems.
- Management and treatment planning of complex cases, including interdisciplinary treatment planning
- Diagnosis and management of teeth with concurrent endodontic and periodontal diseases
- Paediatric endodontics
- Management of medically compromised patients
- Principles and methods for restoring endodontically treated teeth
- Applied pharmacology and therapeutics
- Conservative pulp treatment - including: dentine desensitisation and protection, indirect pulp capping, direct pulp capping, pulpotomy and pulpectomy
- Pulpectomy and associated endodontic procedures
- Management of infections in immature teeth
- Principles of, and techniques for, endodontic surgery
- Management of endodontic emergencies
- Management of traumatic injuries to the teeth and mouth - including crown fractures, crown/root fractures, root fractures, concussion, subluxations, luxations, avulsions, alveolar bone fractures, abrasions, contusions and lacerations
- Auto-transplantation of teeth
- Aetiology, recognition and management of resorptive defects
- Management of root perforations
- Aetiology and management of discoloured teeth
- Diagnosis and management of cracks in teeth
- Compromised endodontic procedures (e.g. devitalisation, mummification, etc.) and their associated problems
- Principles of implantology
- Record keeping for specialist endodontic practice
- Dentolegal aspects of specialist and general practice

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