

BRITISH SOCIETY OF PAEDIATRIC
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EDUCATIONAL GUIDELINES



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Intended learning outcomes for undergraduate training in paediatric dentistry

Teachers Branch of the British Society of Paediatric Dentistry
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Introduction

In 1999, National Health Service Education for Scotland (NES), formerly known as the Scottish Council for Postgraduate Medical and Dental Education (SCPMDE) funded a 3-year project to consider the issue of assessment of dental graduates in the early postgraduate years of dental vocational training. The aim of the project was to design a comprehensive, valid and reliable system of assessment to embrace the continuum of undergraduate and early postgraduate dental education and training [1]. A natural progression from this work was to develop a set of competencies for senior house officer (SHO) training, and the British Society of Paediatric Dentistry (BSPD) was asked to work with the NES to develop those competencies necessary for training in paediatric dentistry at the SHO level. The Consultants' Group, Trainees' Branch and Teachers' Branch of the BSPD were actively involved, and produced the *Competency Document for Senior House Officer Training in Paediatric Dentistry* in December 2001 [2].

The document presented herein is a further progression in the establishment of the continuum between undergraduate, early postgraduate and specialist training in paediatric dentistry. These intended learning outcomes have been developed by the Teachers' Branch of the BSPD, taking close account of all other developments in competency-based teaching and assessment in paediatric dentistry [3] as well as the guidelines produced by the General Dental Council in *The First Five Years. A Framework for Undergraduate Dental Education* [4], by the Quality Assurance Agency in Higher Education in *Subject*

Benchmarking Statements – Dentistry [5] and the European Union in the DentEd project [6]. This document follows the format of *The First Five Years* in which specific learning outcomes are defined in terms of competence, knowledge and familiarity. The definitions are reproduced in full below:

'Be competent at: Students should have a sound theoretical knowledge and understanding of the subject together with an adequate clinical experience to be able to resolve clinical problems encountered, independently, or without assistance.

'Have knowledge of: Students should have a sound theoretical knowledge of the subject, but need have only a limited clinical/practical experience.

'Be familiar with: Students should have a basic understanding of the subject, but need not have direct clinical experience or be expected to carry out procedures independently.'

The value of the document will be in curriculum planning for undergraduate training in paediatric dentistry, and in the planning of assessment and carrying out course evaluation. The intended learning outcomes are described within the domains of Clinical Skills, Communication, Professionalism and Management. Each domain is divided into major areas for intended learning outcomes and ordered with the highest skill levels (competencies) first, then knowledge and familiarity outcomes. This structure can, therefore, be used to identify those skills in paediatric dentistry which a student needs to acquire and have assessed formally before she or he can graduate. The Clinical domain describes skills within the discipline of paediatric dentistry (intradisciplinary skills) while the other three domains have each been divided into two subsections, i.e. intradisciplinary and interdisciplinary skills, with the intention that

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they may be acquired and assessed across and between disciplines during undergraduate training. The process by which agreement has been reached has involved two interactive workshops on competencies in paediatric dentistry held at BSPD teachers' study days in 2000 and 2001, consideration of the NES dental vocational training and SHO documents as templates and feedback from teachers of paediatric dentistry. In order to facilitate the process, a small group (A.M., E.S.D. and S.C.) was convened by the Teachers' Branch of the BSPD to consider the NES template, and where appropriate, adjust the list of intended learning outcomes. In addition, the levels of the competency were adjusted to suit a graduate on graduation. Following circulation of a draft document to all members of the Teachers' Branch for consideration, collation of responses enabled a further draft to be completed prior to approval by the BSPD Council. This document is now published for general use below.

References

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- 3 European Academy of Paediatric Dentistry, Education Committee 2002–3. *Undergraduate Teaching Programs in Europe: First Draft of a 'Golden Standard'*. Athens: European Academy of Paediatric Dentistry, 2002.
- 4 General Dental Council. *The First Five Years. A Framework for Undergraduate Dental Education*. London: General Dental Council, 2002.
- 5 Quality Assurance Agency for Higher Education. *Subject Benchmarking Statements – Dentistry*. Gloucester: Quality Assurance Agency for Higher Education, 2002.
- 6 DentEd. *Orthodontics and Paediatric Dentistry*. TNP 39501-CP-3-99-1-IE-ERASMUS-ETN 1999-1025/001/1: DentEd, 2001.

1 Clinical domain

- 1.1 Patient examination and diagnosis.
- 1.2 Treatment planning and patient management.
- 1.3 Health education and disease prevention.
- 1.4 Medical emergencies and dental trauma.
- 1.5 Anxiety and pain control, anaesthesia, and sedation.
- 1.6 Periodontal therapy and management.
- 1.7 Hard- and soft-tissue surgery.
- 1.8 Therapeutic management of the hard and soft tissues of the head and neck.
- 1.9 Management of the developing dentition.
- 1.10 Restoration of teeth.
- 1.11 Replacement of teeth.

2 Communication domain

- 2.1 Communication with patient and family (intradisciplinary).
- 2.2 Communication within the dental team (interdisciplinary).

3 Professionalism domain

- 3.1 Professionalism toward patients and family (intradisciplinary).
- 3.2 Personal professionalism and professionalism within the dental team (interdisciplinary).

4 Managerial domain

- 4.1 Personal and clinical organization (interdisciplinary).

1 Clinical domain

The dental graduate upon qualification should:

1.1 Patient examination and diagnosis

- 1 be competent in obtaining a medical, dental, family, social, and where appropriate, feeding, dietary and developmental history from a child, patient, parent or guardian.
- 2 be competent in assessing the medical, dental, family, social, and where appropriate, feeding, dietary and developmental history of a child patient.
- 3 be competent in recording the medical, dental, family, social, and where appropriate, feeding, dietary and developmental history obtained of a child patient.
- 4 be competent in performing a clinical examination of the patient (relevant to age group) that encompasses facial, intra-oral, head and neck, general and behavioural aspects of a child patient.
- 5 be competent in evaluating the child's skills in personal oral hygiene and providing the child patient with an effective oral hygiene strategy for their control.

- 6 be competent in prescribing, justifying and performing intra- and extra-oral radiographic examination appropriate for the diagnostic needs of the patient.
- 7 be competent in assessing intra- and extra-oral radiographs.
- 8 be competent in distinguishing between pulp health and disease.
- 9 be competent in identifying the type, location, extent and activity of dental caries.
- 10 have knowledge of facial and dental growth and development.
- 11 have knowledge of occlusal development in the primary, mixed and permanent dentition.
- 12 have knowledge of periodontal disease and identify conditions which may require treatment.
- 13 have knowledge of the different types of tooth tissue loss including dental erosion.
- 14 be familiar with the symptoms associated with temporo-mandibular joint disorders.
- 15 be familiar with natal and neonatal teeth.
- 16 be familiar with the signs of abuse or neglect, and the reporting procedures.
- 17 be familiar with the clinical features associated with oral mucosal diseases.
- 18 be familiar with developmental soft-tissue abnormalities.
- 19 be familiar with the signs of substance or drug abuse, and any relevant action that should be taken.
- 20 be familiar with oral conditions which may require treatment or referral to a specialist.

1.2 Treatment planning and patient management

- 1 be competent in developing comprehensive and integrated treatment and preventive plans, taking into account diagnosis, social, medical and psychological influencing factors for child patients.
- 2 be competent in formulating a suitable recall maintenance programme for child patients.
- 3 be competent in the effective management of dental emergencies.
- 4 be competent in explaining to the patient/parent or guardian (in a manner they can understand) their responsibilities associated with the treatment plan, including preventive education and time requirements for treatment.
- 5 be competent in obtaining valid consent from patient/parents/guardians/carers.
- 6 have knowledge of formulating and managing alternative treatment plans for child patients such as those with special needs.

- 7 have knowledge in appropriate referral for specialist advice and treatment for child patients such as those with special needs.
- 8 have knowledge of how to liaise with other healthcare professionals.

1.3 Health education and disease prevention

- 1 be competent in assessing the need for, and providing preventive procedures and instruction in oral health methods which incorporate sound biological principles in order to preserve oral hard and soft tissues, and to prevent disease.
- 2 be competent in providing patients/parents/carers with comprehensive education and instruction of self-care methods for prevention of dental disease.
- 3 be competent in performing restorative procedures which will preserve the tooth structure.
- 4 be competent at performing dietary analysis by appropriate means for children, and provide the patient/parent or guardian with appropriate dietary and nutritional advice to optimize oral health.
- 5 be competent in providing advice and treatment for increasing resistance of primary, mixed and permanent dentition by means of fissure sealants and fluorides.
- 6 be competent in the assessment of the results of preventive treatment and the provision of appropriate aftercare and preventive education.
- 7 be familiar with the epidemiological aspects of health education and promotion (e.g. community fluoridation and sealant programmes), and the principle aspects of national/international documents on oral health.
- 8 be familiar with the need to develop alternative preventive treatment plans based for children with medical, physical, psychological or social problems, and be able to refer appropriately.

1.4 Medical emergencies and dental trauma

- 1 be competent in providing basic and effective life support.
- 2 be competent in identifying pharmacological agents, their correct dosage and route of administration for the treatment of common emergencies, and recognize emergency situations which have arisen as the result of pharmacological treatment or the interaction between such agents.
- 3 be competent in the identification and prompt referral of medical and dental emergencies which are beyond the scope of management of the dentist.

- 4 be competent in diagnosing acute dental and dento-alveolar injuries affecting the primary and permanent dentition, and be able to refer appropriately for treatment.
- 5 be competent in evaluating dental pulp health in the long term following traumatic injury.
- 6 have knowledge of the management of minor soft-tissue injuries and be able to refer appropriately.
- 7 have knowledge to be able to restore teeth with crown fractures.
- 8 have knowledge of splinting of traumatized anterior teeth.
- 9 be familiar with anomalies of the developing permanent dentition which may arise from injury to the primary dentition.

1.5 Anxiety, pain control, sedation and anaesthesia

- 1 be competent in recognizing common signs and symptoms of oro-facial pain, anxiety and apprehension.
- 2 be competent in the assessment and obtaining valid consent for child patients prior to undergoing conscious sedation and general anaesthesia.
- 3 be competent in the administration of local analgesia for pain management in children, and recognize and manage complications relating to its use.
- 4 have knowledge in the assessment and management of anxiety in child patients using behavioural techniques, and when appropriate, with conscious sedation techniques.
- 5 have knowledge in the prevention, recognition and effective management of complications relating to the use of conscious sedation.
- 6 have knowledge in the selection and prescription of drugs for the relief of pain and anxiety.
- 7 have knowledge of the appropriate measures to minimize hazards from nitrous oxide exposure.
- 8 be familiar with the prevention, recognition and effective management of complications relating to the use of general anaesthesia.

1.6 Periodontal therapy and management

- 1 be competent in the evaluation of the health of the supporting structures of the teeth.
- 2 be competent in providing child patients/parents/carers with dental health education and instruction of self-care methods for the prevention and treatment of gingivitis and periodontal disease.
- 3 be competent in providing maintenance of oral hygiene programmes for child patients including regular recall.
- 4 be familiar with the need to assess and refer the child patient appropriately.

1.7 Hard- and soft-tissue surgery

- 1 be competent in the extraction of primary teeth using local anaesthesia.
- 2 have knowledge of how to recognize and treat, intra-operative and postoperative surgical complications.
- 3 be familiar with the management of impacted teeth using surgical techniques including exposure and removal of teeth.

1.8 Therapeutic management of the hard and soft tissues of the head and neck

- 1 be competent in prescribing antibiotics for systemic conditions requiring prophylaxis.
- 2 have knowledge of localized odontogenic infections, and how they may be diagnosed and treated.
- 3 be familiar with systemic conditions and associated treatments (e.g. radiotherapy and chemotherapy) and their effect on oral health.
- 4 be familiar with potential drug interactions which may occur between medications prescribed by the child's doctor and those used in dental practice.
- 5 have knowledge of the management of bacterial, viral and fungal infections of the soft tissues.
- 6 be familiar with the prescribing of steroid cover in patients with adrenal suppression.

1.9 Management of the developing dentition

- 1 be competent at performing an occlusal analysis of the developing dentition.
- 2 be competent at taking records including impressions and radiographs.
- 3 be competent at recognizing abnormalities of facial growth and development, and developing malocclusions for the purposes of early referral for specialist advice.
- 4 have knowledge of facial growth and development, and be able to predict the likely effects on development of the dentition.
- 5 be familiar with the effect on morphology of functional components of soft-tissue structures.
- 6 be familiar with how to correct incisor cross-bite in the absence of skeletal discrepancy.

1.10 Restoration of teeth

- 1 be competent in using a rubber dam for the isolation of teeth.

- 2 be competent in intra-coronal restoration of primary and permanent teeth using all commonly available plastic restorative materials.
- 3 be competent in the selection and handling of dental materials for restorative procedures based on a sound knowledge of their composition and physical properties, and taking into account patient risk factor.
- 4 have knowledge of carrying out extra-coronal restoration of primary teeth using pre-formed crowns.
- 5 have knowledge to perform pulp treatment of vital and non-vital primary teeth.
- 6 have knowledge of non-surgical endodontic treatment of immature permanent teeth.
- 7 be familiar with acid-etch-retained veneers.
- 8 be familiar with the use of micro-abrasion techniques.
- 9 be familiar with aesthetic management of non-vital permanent teeth.

1.11 Replacement of teeth

- 1 be competent in carrying out a prescription for the dental laboratory.
- 2 be competent at assessing the quality of the lab work completed by the technicians.
- 3 be familiar with formulating a treatment plan for child patients requiring prosthodontic treatment.

2 Communication domain

The dental graduate upon qualification should:

2.1 Communication with patient and family

- 1 be competent in increasing the awareness and understanding of child patients and their carers during the careful explanation of preventive options, treatment options and procedures, including the risks associated with general anaesthesia, through the use of effective verbal communication skills.
- 2 be competent in the effective management of difficult or anxious patients through the use of suitable interpersonal and behavioural skills (e.g. voice control, tell-show-do, positive reinforcement and distraction).
- 3 be competent in effective communication with the parents of the child patient.
- 4 be competent in obtaining valid consent explaining in clear terms to child patient/parents/guardians/carers the underlying principles.
- 5 have knowledge of the areas of speech and language development, and behavioural, cognitive, developmental and social psychology.

- 6 have knowledge of different situations where referral to a specialist is necessary and how this may be conveyed in a sensitive manner that causes the least anxiety possible.
- 7 be familiar with managing multi-culturally related problems.

2.2 Communication within the dental team

- 1 be competent in communicating, debating and interacting with clinical I tutors and peers in a professional manner, both verbally and in writing.
- 2 have knowledge to prescribe effectively (verbally/in writing) to the dental therapist, dental hygienist and laboratory technician.
- 3 have knowledge to communicate with all members of the dental team in an appropriate manner that inspires confidence, motivation and teamwork.
- 4 have knowledge to communicate with future fellow professionals verbally and in writing, in a manner that is effective and inspires confidence and respect.
- 5 have knowledge of how to communicate effectively (verbally and in writing) with referral bodies and a willingness to seek advice when necessary.

3 Professionalism domain

The dental graduate upon qualification should:

3.1 Professionalism toward patients and family

- 1 be competent in providing routine treatment for all child patients with courtesy and respect.
- 2 be competent to interact with all child patients, and their parents and guardians without discrimination.
- 3 have knowledge of the need to provide treatment options which are sensitive to the needs of the patient and recognize the right to choose of patient/parent or guardian.
- 4 have knowledge of the need to maintain honesty and confidentiality with all child patients.
- 5 have knowledge of the need to provide preventive education for all child patients in a manner that they can understand and which promotes the importance of oral health.
- 6 be familiar with continual analysis of the outcomes of treatment given in an effort to provide the highest standards of patient care.
- 7 be familiar with the need for compassionate care for all child patients and can demonstrate a willingness to put the needs of the child patient before her or his own.

3.2 Professionalism within the dental team

- 1** be competent in self-assessing her or his own capabilities and limitations, in order to provide the highest standards of patient care.
- 2** have knowledge of the importance of the need to commit to evidence-based care and continuing professional development.
- 3** be familiar with the total unacceptability of practising while impaired by alcohol, drugs or illness, and the actions which should be taken by her- or himself and the General Dental Council with regard to the incompetent, impaired or unethical colleague.
- 4** have knowledge of the need to interact with the dental team and peers without discrimination.

3.3 Ethics and clinical governance

- 1** have knowledge of the need to interact with child patients, staff, peers and the general public without discrimination, showing respect to these groups.
- 2** be familiar with the content of the United Nations Charter of Civil Rights and the Children's Act.
- 3** be familiar with the principles of ethical behaviour relevant to dentistry, including honesty, confidentiality,

personal and professional integrity, and appropriate moral values.

- 4** be familiar with the procedures relating to patients' complaints.

4 Managerial domain

The dental graduate upon qualification should:

4.1 Personal and clinical organization

- 1** be competent in the efficient and organized maintenance of patients' records.
- 2** be competent in the efficient management of time and resources on a daily basis, both in personal activities and in relation to patient care.
- 3** be familiar with the basic principles of a quality assurance programme, and risk assessment and risk management procedures within the primary and secondary healthcare services.
- 4** be competent in using up-to-date cross-infection control procedures, and following health and safety guidelines relating to patients, staff and oneself.
- 5** have knowledge of the safety issues in relation to radiography in dental practice.
- 6** have knowledge of legislation concerning the practice of dentistry in the UK.

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