A viewpoint on the current status of UK orthodontic education and the challenges for the future

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IN BRIEF

- Highlights that orthodontic education is currently facing several challenges.
- Suggests that orthodontic education needs to move to a holistic approach and combine with paediatric dentistry education.
- Suggests that courses should be developed that enable a practitioner to gain orthodontic clinical skills.

In this paper we will provide our personal viewpoint on the current provision of orthodontic education and discuss the need for further developments. This will include training relevant to the following: (i) student dentists, (ii) specialists, and (iii) general practitioners: particularly those who wish to develop an interest in orthodontics. We will attempt to take into account the many changes in methods of delivery of care, the changing demands of the public for high quality treatment and the influence of the curricula produced by the General Dental Council (GDC).

UNDERGRADUATE EDUCATION

Over the past 20 years undergraduate dental education has changed in response to both expanding dental knowledge and the needs of the population. Orthodontics is not unique and the content of training has responded to changes in delivery of care with most orthodontic treatment being provided by fixed appliances. As a result, many dental schools have stopped teaching student dentists removable appliance treatment and technical 'lab work'. They now aim to produce new practitioners who can monitor the developing occlusion and refer patients appropriately for fixed appliance treatment.[1]

As a consequence of these changes, the GDC made several changes to the contents in their guidelines on the content of orthodontic education.[2,3] We will not go through these, as it more relevant to consider the implications of the latest recommendations outlined in the latest *Preparing for practice* guidance.[4] In preparing these guidelines the GDC took the important step of changing their emphasis from the inputs into training to the outcomes expected following completion of training. One of the greatest changes was the GDC's recognition of the concept that a newly qualified practitioner would be considered to be a 'safe beginner'. This was a fundamental change for the providers of dental education.

When we examine the content of the guidance, the GDC has set out overarching outcomes that are relevant to all patient care, for example the ability to examine and diagnose. These are then focused down to specific dental problems. Orthodontics is not specifically mentioned but it is covered in the section on managing the developing dentition. This states that 'Upon registration with the GDC the registrant will be able to demonstrate the outcomes as relevant to the practice of dentistry and patient care'. For the management of the developing dentition these are:

- Identify normal and abnormal facial growth, physical, mental and dental development and explain their significance
- Undertake an orthodontic assessment, including an indication of treatment need
- Identify and explain developmental or acquired occlusal abnormalities
- Identify and explain the principles of interceptive treatment, including timely interception and interceptive orthodontics, and refer when and where appropriate
- Identify and explain when and how to refer patients for specialist treatment and apply to practice
- Recognise and explain to patients the range of contemporary orthodontic treatment options, their impact, outcomes, limitations and risks
- Undertake limited orthodontic appliance emergency procedures.

Importantly, the major departure from previous recommendations is that the newly trained graduate is not expected to carry out active orthodontic treatment with appliances.

It is also important to consider that there is less demarcation between 'orthodontic' treatment and 'paediatric dentistry' treatment. This may be interpreted that orthodontic and paediatric dentistry at undergraduate level is one 'subject' area with no traditional distinction between the two 'specialist' areas. This is, therefore, the future challenge for those who deliver teaching.

WHAT IS THE WAY FORWARDS?

This is relatively clear. We need to move from considering a young person as a 'paediatric' or 'orthodontic' patient to a more holistic approach of considering them as someone with a dental problem relevant to their development. This can be achieved by developing courses with no barriers between speciality staff. For example, there could be a core course in 'child dental health and development' with some components being delivered by all staff. While students are unlikely to gain experience in adjusting appliances, they will gain competencies that are relevant to their entry into foundation training. If they wish to obtain additional skills this could be achieved post qualification.

TRAINING THAT DOES NOT LEAD TO INCLUSION ONTO THE SPECIALIST LIST

This section is concerned with training that enables practitioners to increase their orthodontic competencies but does not lead to inclusion onto the specialist list of the GDC.

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Unfortunately, the methods of delivering and obtaining this training for orthodontics are not clear.

We shall confine our discussion to formal training that enables a dentist to become a Dentist with a Special Interest in Orthodontics (DwSI). This is essentially a primary care practitioner who treats a caseload of patients, but is not a specialist. Importantly, they can be recognised by commissioners as being able to provide an orthodontic service, providing they work within their competencies. Dentists with a special interest may attain these skills in several ways.

A popular method has been three-year part-time training programme run by the British Orthodontic Society and the Faculty of General Dental Practice. This leads to the Diploma in Primary Care Orthodontics run by the Faculty. While this has been successful for several intakes, it was disappointing to find that the course did not have an intake recently due to a lack of suitable applicants. This may be a reflection of some uncertainty over whether commissioners will contract with DwSIs to deliver primary care orthodontics, rather than specialists.

In addition to this training programme several universities have started, or are starting, training programmes in additional orthodontic skills. These are part-time courses that run over 2-3 years leading to a university qualification. As with the Diploma in Primary Care Orthodontics, completion of the training does not satisfy the requirements for entry onto the GDC specialist list.

When we consider the role of these courses in orthodontic education it is clear that they provide a formal training for dentists in additional skills that should enable practitioners to work as a Dentist with a Special Interest. Nevertheless, they do not lead to specialist registration. It is unfortunate that if a dentist with a special interest wants to undergo further training to become a specialist, the only option is for them to attend a full-time three year formal training programme. This is an anomaly, as one would expect that prior training should be recognised towards specialisation. Yet this is currently not the case, as the GDC will not recognise prior learning. As a result, any concept of a 'skills escalator' for orthodontic training is not possible. This major deficiency restricts access to orthodontic training and solutions to this problem should be explored.

TRAINING THAT LEADS TO INCLUSION ONTO THE SPECIALIST LIST

One of the main purposes of specialist lists is to inform, and hence protect, the public by indicating which registrants have the competencies expected of a specialist. The GDC established Specialists Lists in 1998 and for a dentist to use the title 'specialist' they must be on a GDC Specialist List. In order to become a specialist in the UK you must complete a training programme approved by the GDC.

At present there are over 1,000 orthodontic specialists registered with the GDC making it the largest speciality in the UK. Orthodontics is one of the two specialisms in dentistry recognised in Europe and to be recognised a specialist an individual must undergo three years or equivalent full time training. The GDC is currently reviewing the need for specialist lists, from the point of view of public protection. As a result, there may be further changes in specialist training. We shall just discuss the current training.

Table 1 The modules that make up the orthodontic specialist curriculum

Generic specialist skills	Orthodontic specific specialist skills
A professional and ethical approach to patient care	Diagnose anomalies of the dentition
A professional attitude to all members of the dental team	Detect deviations in the development of the dentition, of facial growth and the possession of functional abnormalities
A scientific attitude, an inquiring mind and the stimulation of professional curiosity	Evaluate the need for orthodontic treatment
A thorough understanding of scientific methodology	Formulate a treatment plan and predict its course
An ability to interpret the relevant literature	Carry out interceptive orthodontic measures
An awareness of current legislation and working practices relating to the practice of dentistry	Execute simple and complex treatment procedures
An ability to develop themselves by both reflective practice and self-evaluation	Evaluate orthodontic progress and treatment outcomes
An ability to teach (this includes all members of the dental team)	Possess an overview of the multidisciplinary approach for the treatment of dentally and medically compromised patients
An ability to promote and apply dental health education	Be able to acquire and interpret research information and data
	Be able to prepare oral and written clinical and research findings

SPECIALITY TRAINING

Orthodontic training is well established in the UK with approximately 35 salaried Specialist Registrar training places per year. Since their inception, training programmes have developed and evolved and they now offer a very structured training experience in order that they comply with the recommendations of the curriculum produced by Speciality Advisory Committee in Orthodontics and approved by the GDC.

As with undergraduate education there has been a change in emphasis from methods and resources required for teaching to taught to concentrating on the outputs, namely the knowledge skills and attitudes that a specialist should demonstrate. These are clearly defined in the curriculum as are the methods by which they should be assessed.[5]

A new modular curriculum was introduced in 1995, to comply with best educational practice, and the latest version of the curriculum was introduced in 2010 following a request for an update by the GDC's Specialist Dental Education Board in 2008.

The orthodontic specialist curriculum consists of 34 modules which detail both generic specialist skills, orthodontic specialist skills and a research component. This is illustrated in Table 1.

Orthodontic training programmes are commissioned by postgraduate deaneries that monitor both trainee progress and the quality of the training programmes. They are normally centred on a teaching hospital with sessions in a district general hospital. Most trainees undertake a masters or doctorate level programme in a university that delivers both the didactic teaching and the required research component. The British Orthodontic Society (BOS) has developed a virtual learning environment to support the delivery of the curriculum for trainees.

At present there are no training programmes where time is spent in a primary care environment. As most trainees will ultimately practice in primary care it is logical for a proportion of their training to be undertaken in this clinical environment, but while attempts have been made to achieve this aim, this has not been possible because of the potential cost and lack of availability of suitable trainers and training practices. This is one aspect of specialist training that could, and arguably should, evolve in the future.

Training is completed when all elements

have been successfully completed, including the gaining of a membership qualification from one of the Surgical Royal Colleges, the completion of a research qualification and successful completion of the Deanery-led assessment process (Annual Review of Competence Progression). At this point a trainee will be awarded a Certificate of Completion of Specialist Training (CCST) which allows them to be placed on the GDC's specialist list.

TRAINING TO A CONSULTANT ORTHODONTIST; POST-CCST TRAINING

Orthodontics is one of the two specialisms in dentistry that has Post-CCST training. This is a two year training period designed to prepare a trainee for the role of orthodontic consultant. This training is provided in hospital trusts. As this training period does not lead to a specialist qualification the curriculum has not been agreed or quality assured by the GDC.

It has a further 11 further modules that focus on the treatment of patients requiring multi-disciplinary care as well as hospital management and teaching.[5] Trainees are again assessed via the deanery process and the exit examination is the Intercollegiate Speciality Fellowship Examination.

THE FUTURE: THE IMPLICATIONS FOR TRAINING OF FUTURE DELIVERY OF ORTHODONTIC CARE

The GDC's *Scope of practice* and *Standards* documents describe what each registrant is trained to do but also states that each registrant must work within their competence.[6,7] This has, in some ways, been reflected in NHS England definitions of the potential new care pathways:

- Level 1 – Procedure/conditions to be performed or managed by a dentist commensurate with level of competence as defined by the Curriculum for Dental Foundation Training or its equivalent
- Level 2 – Procedures/conditions to be performed or managed by a dentist with additional competencies above those commensurate with level of competence as defined by the Curriculum for Dental Foundation Training or its equivalent but below the level of a professional recognised as a specialist at the GDC defined criteria
- Level 3 – Procedures/conditions to be performed or managed by a professional recognised as a specialist at the GDC defined criteria and on the specialist list.

Orthodontics already has a well-established developed model of delivering care in this way with most care being delivered by orthodontists. It is unclear how this will change in the future, although it is possible that NHS commissioners will in future seek to have care delivered by specialists rather than DwSI or GDPs which will obviously have an impact on the orthodontic training requirements.

SUMMARY

As with all dental education and training, orthodontic training is not static and needs to continue to evolve with constantly changing circumstances. When we consider undergraduate orthodontic training we appear to be in a state of stability with the publication of the new GDC curricula. However, there are considerable challenges and uncertainty with postgraduate orthodontic training. There are clear curricula and methods of delivery of specialist training. The greatest challenge is to develop more flexible postgraduate training pathways that recognise prior learning. The obstacles to progress in this area are mostly concerned with regulation. These are not surmountable and steps should be taken to remove these barriers, so that we can increase access to specialist training. This would be for the benefit of both the profession and the public.

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