Enhanced NHS endodontic services in England: a postcode lottery?

Oliver P. Jones,*[1] Philip J. Lumley,[1,2] David J. B. Green[1] and Phillip L. Tomson[1,2]

Key points

Gives an overview of the proposed tiered complexity levels for the provision of endodontic treatment within the NHS.

Provides an overview of how enhanced NHS endodontic services are currently commissioned and provided across England.

Highlights the regional inequalities that are present with the commissioning and provision of enhanced NHS endodontic services across England.

Abstract

Aim To investigate the consistency of commissioning and provision of enhanced NHS endodontic services across England.

Methods The level of provision for enhanced endodontic services was sought using two methods. An electronic questionnaire was distributed to each of the thirteen director of commissioning operations (DCO) teams in NHS England to determine the perception from commissioners of what endodontic services are currently provided and commissioned. A systematic search to assess what is advertised by enhanced endodontic providers was also carried out to cross-reference with the information gained from electronic questionnaires.

Results A 77% response rate to the questionnaire was achieved. Eight out of the ten DCO teams that replied provided enhanced NHS endodontics to a greater or lesser extent, one did not and one was unsure. Three teams did not respond. Providers of services included dentists with enhanced skills, endodontic specialists, and dentists working within district or dental hospitals. Five out of ten DCO teams commissioned level two services and six commissioned level three services. Dental hospital acceptance criteria for enhanced endodontics differ regionally, but most accept level three and some level two complexity treatments, depending upon capacity at the time.

Conclusions This investigation demonstrates that although the majority of NHS commissioning areas within England provide enhanced endodontic services, these are not the same across the country. Therefore, patients are not getting equal access to services and it may vary depending upon location.

Introduction

The NHS *Five year forward view* observes that there are historic barriers between primary care and hospital delivered services which can prevent patients being able to access a coordinated health service that meets their need.[1] The NHS *Introductory guide for commissioning dental specialties* recognises this within dentistry, and stresses the importance of expanding and strengthening primary and 'out of hospital' care for patients.[2]

[1]Birmingham Community Healthcare NHS Foundation Trust, Birmingham, UK; [2]Institute of Clinical Sciences, University of Birmingham, UK.
*Correspondence to: Oliver Jones
Email: ollie_jones@btinternet.com

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All dental services in England are currently commissioned by the single government agency known as NHS England, as opposed to medical services which are predominantly commissioned by individual clinical commissioning groups. The aim of a single agency is to provide consistent standards of care delivery across the whole country, which meet the demands of patients. The vast majority of NHS dental care is provided through the general dental service (GDS) and personal dental service (PDS) via contracts between director of commissioning operations teams (DCO teams) and primary care contract holders. Dental care is also provided by district general hospitals and dental hospitals via hospital contracts.

NHS commissioning guides[2,3] and Health Education England[4] propose a tiered approach for the provision of dental speciality care pathways, with the aim of offering consistent commissioning and provision of care throughout England. The tiered levels reflect the complexity of patient care and competency of clinician required to deliver it (Fig. 1); ultimately dictating the setting in which the care should be provided.

For the dental speciality of endodontics, anecdote would suggest that there is regional variation in the way that enhanced NHS services are commissioned and provided across England, and that there is high demand for such services. It has, therefore, been recommended that work should be undertaken to determine what specialist services are being provided, by who and where, in order to help plan future services.[2]

A survey conducted in 2014 by the British Endodontic Society[5] found that 85% of dentists who undertook the survey were not confident that their patients could access NHS specialist endodontic treatment if required.

Endodontic treatment can also be challenging and it is thought that demand for endodontic expertise by both patients and general dental practitioners is high. A recent service evaluation at Birmingham Dental Hospital showed that 45% of all referrals for restorative dentistry were for enhanced endodontic treatment or advice.[6]

It has been proposed that this increase in referrals for advanced endodontic treatment has been due to a number of reasons, which include a lack of experience of newly qualified dental graduates and an increased practice of defensive dentistry.[7] This demonstrates a high demand for services for patients with more complex endodontic treatment needs that may not be possible to meet within conventional primary care services.

The proposed, as yet unpublished, restorative commissioning guide produced by NHS England[3] will recognise that GDPs may not be able to provide all levels of complexity with endodontic treatment and that additional competencies are required for level two and three complexity treatments. Aims of tier two dental services are to relieve some of the pressure on secondary care services, help to upskill general dental practitioners and to provide care closer to home for patients.[4,8] The proposed criteria for level one, two and three complexity endodontic cases, outlined in current guidelines,[3,8,9] in terms of procedural difficulty, modifying factors and competence of clinician required to deliver care are summarised in Table 1.

It is expected that performers providing care under a primary care contract should have the competencies to be able to deliver comprehensive and effective level one complexity endodontic care (Fig. 2).[3] If the endodontic care is beyond the capabilities of the contract performer, due to case complexity or modifying factors, the case may be referred to enhanced providers if such commissioned services exist within the area. These enhanced providers may include dentists with enhanced skills, endodontic specialists or performers working within district or dental hospitals under consultant supervision. As with other dental specialties, it is proposed that endodontic referrals are triaged by consultants who would direct the cases to tier two or tier three providers, in line with complexity guidelines as part of the referral management process.[2,3]

One should bear in mind that, for many years, what is now considered level two and

Fig. 1 Proposed tiered approach for the delivery of enhanced dental care.2 Reproduced from 'Guides for Commissioning Dental Specialities and their implementation', NHS England. Contains public sector information licensed under the Open Government Licence v3.0

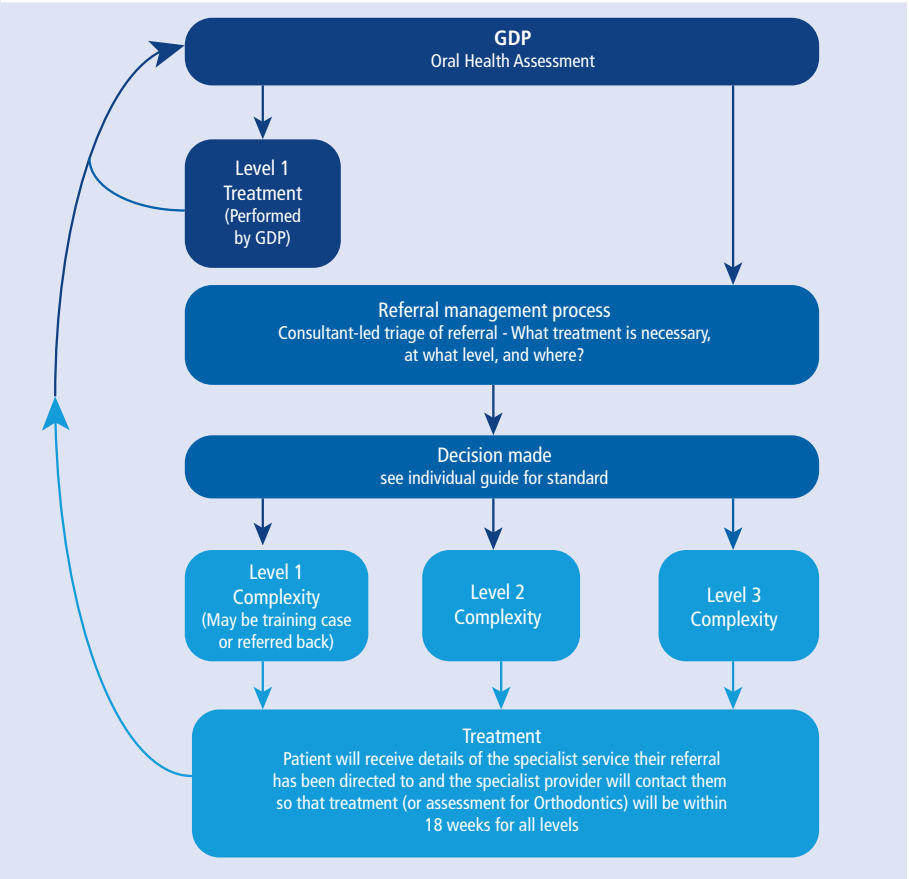


Table 1 Proposed complexity levels for enhanced endodontic treatment[3,8,9]

Complexity level	Complexity criteria
Level 1[3,9]	Root canals with less than 30° curvature and considered negotiable along their entire length No root canal obstruction or damaged access Re-root canals of poorly condensed, short obturations with evidence of patent canals beyond existing root filling
Level 2[3,8,9]	Root canal curvatures >30° but <45° and considered negotiable along their entire length Locating and negotiating canals that are not considered negotiable in the coronal third, but patent thereafter Teeth with incomplete root development Molar endodontics for patients with reduced mandibular opening Removal of fractured posts short in length and not accompanied by other complications cited for level 3 complexity Re-root canals of well condensed root fillings short of the apex
Level 3[3,9]	Root canal curvatures >45° or S shaped canals Root canals not considered negotiable along their entire length Management of teeth with iatrogenic damage Management of teeth with pathological resorption Management of teeth with developmental anomalies Complicated re-root canal treatments including well condensed obturations, separated instruments and silver points Peri-radicular surgery
Modifying factors[9]	Coordinated medical and/or dental multidisciplinary care Medical history that significantly affects clinical management: history of head and neck radiotherapy; patients who are significantly immunocompromised Limited access Undiagnosed facial pain

Fig. 2 Map illustrating location of director of commissioning operations teams in England.[11] Reproduced from 'NHS GP Health Service', NHS England. Contains public sector information licensed under the Open Government Licence v3.0

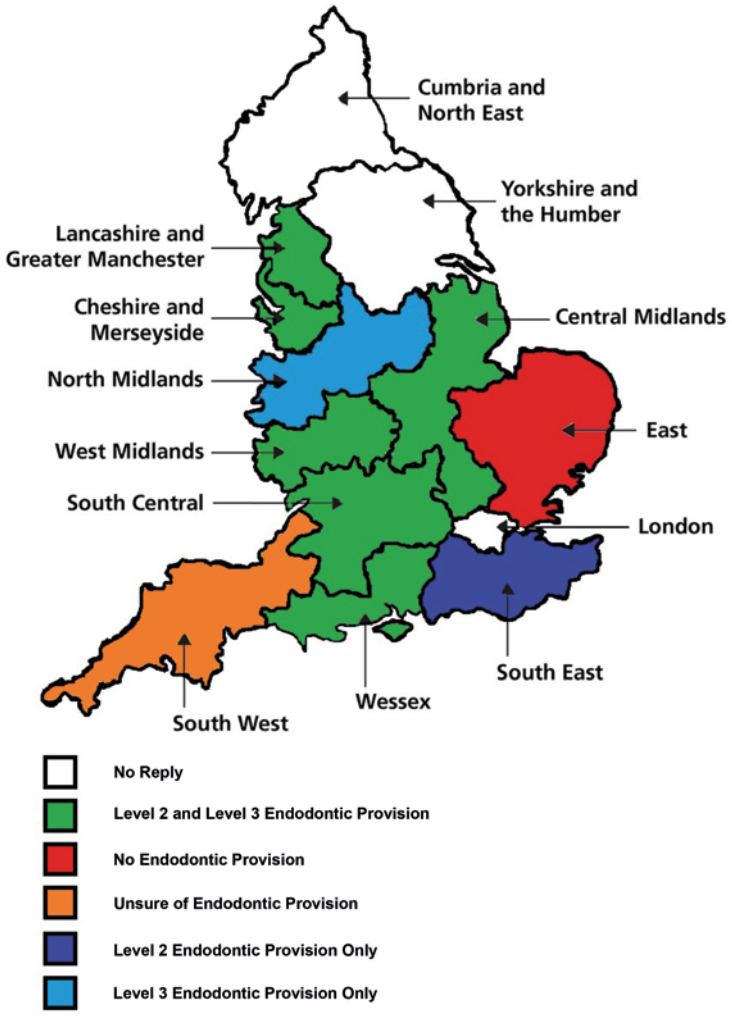


Fig. 3 Regional map of England illustrating enhanced endodontic service provision

level three complexity endodontic care, as defined by the draft commissioning guide,[3] has been provided with great success within the general dental service. One study reports the ten-year survival rates of root-treated teeth within the general dental services of England and Wales to be 74%.[10] However, it has been proposed that the NHS contract change in 2006 has disincentivised dentists from undertaking these enhanced cases.[7]

The aim of this investigation was to determine how NHS enhanced endodontic services are commissioned and provided across England and how this compares to the proposed tiered structure outlined in the commissioning guides.[2,3] It will aid in the understanding of where the commissioning of endodontics is presently at, in order to support planning for the future.

Methodology

To understand the perspectives of both commissioners and providers, two methods were used when gathering information about the current commissioning and provision of enhanced NHS endodontic services. The first involved an electronic questionnaire that was created with the assistance of clinicians and commissioners. This questionnaire was designed with four sections:

1. Background of that director of commissioning operations team (DCO): the area covered, the population, the presence of a dental hospital within the area and the presence of a restorative managed clinical network
2. Current enhanced endodontic provision within the area: is there a tiered approach to service delivery and who provides it?
3. Referral management for endodontic services: how many referrals are received and how they are triaged?
4. Current enhanced endodontic contracts: how tier two and three services are commissioned within the area, if at all?

Further questions were asked regarding the demand for endodontic services in the area and what obstacles were seen that would prevent further enhancement of services. Questionnaires were emailed to each of the thirteen DCO teams in England (Fig. 2) and data were collected between January and April 2018.

The second method involved a thorough search of information advertised by enhanced endodontic providers on criteria for case

acceptance.

Results

Responses were received from ten out of the thirteen director of commissioning operations teams, giving a response rate of 77%. The questionnaires were completed by a range of staff involved with the commissioning teams including dental contracts managers, commissioning managers, primary care and secondary care leads.

Background

Responses were received from Lancashire and Greater Manchester, Cheshire and Merseyside, Central Midlands, North Midlands, West Midlands, East of England, South Central, South East, Wessex and the South West. Of the ten areas that responded to the questionnaire, four contained a dental hospital (Lancashire and Greater Manchester, Cheshire and Merseyside, West Midlands, and the South West) and seven were reported to have an active restorative managed clinical network (MCN).

Current endodontic services

Eight out of the ten DCO teams that responded provided some level of enhanced endodontic service, one did not, and one was unsure as to what was being provided (Fig. 3):

- Seven areas had providers of tier two services for endodontic treatment, two did not and one was unsure. Within three areas this was provided by the dental hospital, and the other four areas provided by a combination of specialists, dentists with enhanced skills (DES) or district general hospitals (DGH)
- Seven areas had providers of tier three services for endodontic treatment, two did not and one was unsure. Within three areas this was provided by the dental hospital, and the other four by specialists or within district general hospitals.

Referral management

Seven of the director of commissioning operations teams had an up and running electronic referral management system, but it was not specified as to whether this was yet active for specialist restorative services.

Six out of ten DCO teams reported an unmet demand for endodontic services within their area. One even commented that they believed patients were accessing private care due to the

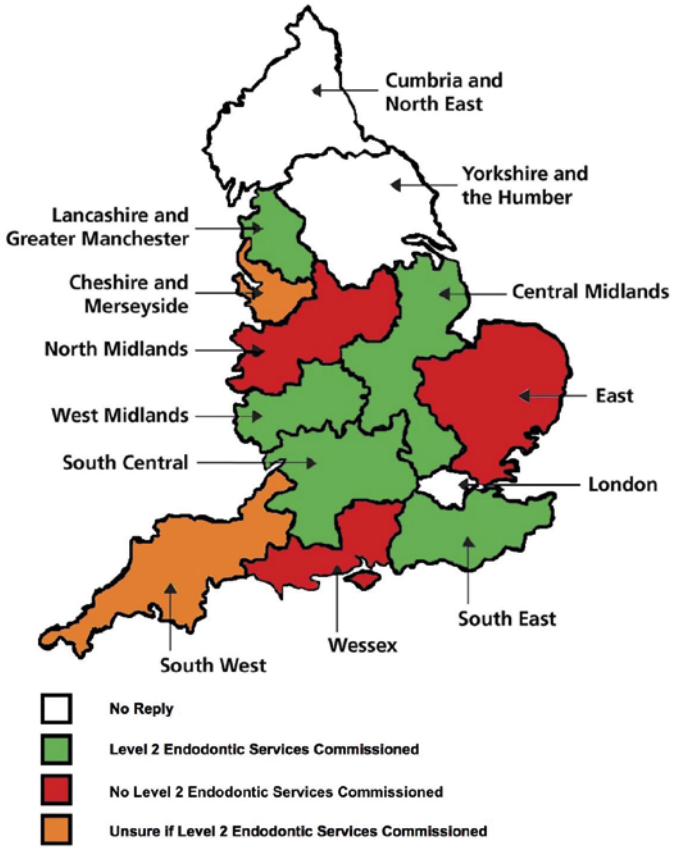


Fig. 4 Regional map of England illustrating level two endodontic service commissioning

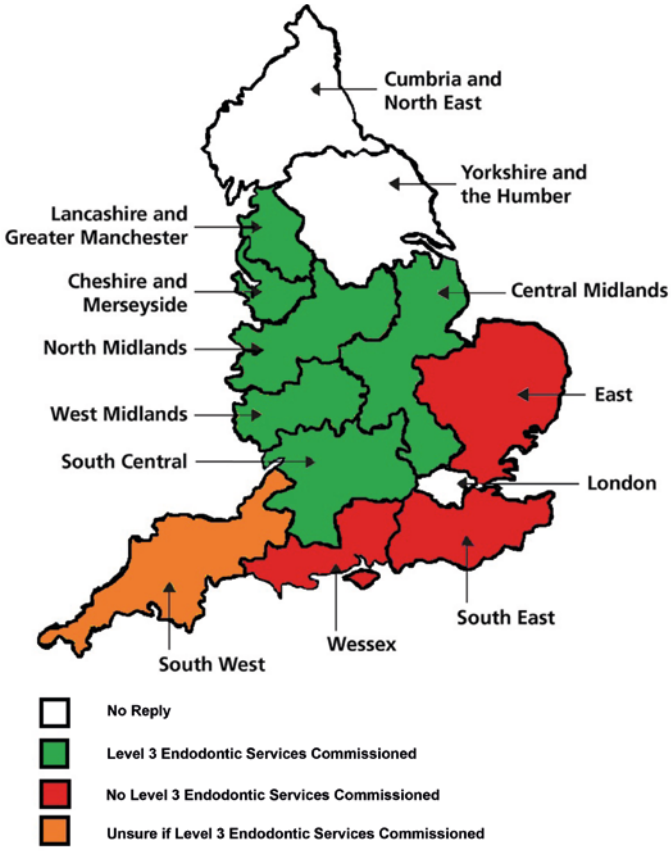


Fig. 5 Regional map of England illustrating level three endodontic service commissioning

Table 2 Overview of enhanced endodontic acceptance criteria for the different teaching hospitals in England (cont. on page 6)

Dental hospital	Acceptance criteria
Birmingham[12]	Advice and treatment planning Curvatures >45° or S shaped canals Canals not considered negotiable along entire length Resorption Complicated non-surgical cases including: posts >8 mm, perforations, separated instruments Re-root treatments if well condensed and to apex Apical surgery
Bristol[13]	Primary treatment of functionally and aesthetically important teeth, with complex endodontic needs, with a strong long-term prognosis with generally a minimum 2 mm of coronal tissue above gingival level and prognosis for endodontic intervention is better than extraction Medical risk if teeth are removed for example, patients who have had radiotherapy or bisphosphonates Trauma Resorption Investigation of atypical facial pain with a likely endodontic cause Possible postgraduate training cases outside of normal need
The Eastman[14]	Primary root canal treatment of teeth with anatomical complexities: combination of curved, narrow, long root canals, multiple curves in root canals, calcified pulp chamber or root canals; canal space not visible on diagnostic quality radiographs, adults with incomplete root development, anatomical anomalies (for example, invaginations; palato-gingival grooves) Surgical endodontics of restoratively sound teeth when orthograde endodontic treatment is not viable Acute traumatic dento-alveolar injuries in adults or consequences thereof Vital pulp therapy (traumatic pulp exposures; stabilised deep caries with adequate tooth structure, possible exposure and absence of periapical disease) Root resorption: affecting single restoratively viable tooth or affecting multiple teeth Endodontic diagnosis or opinion Facilitation or management of complex retreatment Post removal and instrument retrieval, in cases where this would be deemed to be viable Canal location or negotiation
Guy's and St Thomas[15]	Apical periodontitis in teeth that have already been endodontically treated Apical periodontitis in teeth with technical difficulties including calcified canals, severely curved canals and internal resorptions Endodontic disease caused by dental trauma Apicectomy is only indicated when endodontic treatment has been impossible to complete because of: continuing extra-radicular infection, calcification or non-negotiable canals, a post which cannot be removed, management of perforations, biopsy of a suspicious periapical lesion
King's College Hospital[16]	Advice and treatment planning on complex endodontic problems Endodontic complications of trauma Single/multiple root canals with curvature >40° Single/multiple root canals that are not considered negotiable through their entire length Periradicular surgery when conventional endodontics has been previously tried and failed Teeth with perforations or pathological resorption Root canal treatment or retreatment of second molar teeth only if it is a strategic abutment Concessions will be made for patients on bisphosphonates or who have had radiotherapy to the jaws
Leeds[17]	Curvatures >45° or S shaped canals Canals not considered negotiable along their entire length Developmental abnormalities Endodontic complications of trauma Pathological resorption Iatrogenic damage; for example, perforations, ledges, blockages Complicated re-root treatments (posts over 8 mm, separated files, carrier obturations) Periradicular surgery where the existing root filling is of good technical quality

lack of available enhanced NHS endodontic services. Unfortunately, the questionnaire was unable to capture information regarding the number of referrals received for enhanced endodontic care. It is anticipated that this type of information will be readily retrievable once electronic referral management systems are in place for restorative services.

Endodontic contracts

Seven out of the ten areas that responded commissioned enhanced NHS endodontic services to a greater or lesser extent, two did not and one was unsure (Fig. 4 and Fig. 5). These services are commissioned differently depending upon where they are provided. If provided within hospitals, then the funding is part of the overall restorative budget and commissioned as part of the hospital contract. For out of hospital services, they are commissioned via NHS standard contracts or PDS agreements. There is one area that provides tier two and tier three services, but does not commission them. They are instead funded on a case-by-case basis via independent funding requests that require approval by the NHS England area team.

When asked about barriers to further enhancing NHS endodontic services, the most common was a lack of information regarding the demand for services. Other barriers included a lack of funding, a lack of available skills and the difficulties in accrediting providers (Fig. 6).

Of the three areas that did not respond to the questionnaire, the authors recognise that all provide enhanced endodontic services within dental hospitals, as well as commissioned NHS tiered endodontic services outside of the dental hospital. However, without information provided directly from the commissioning teams or individual providers, it would be inappropriate to comment further. In the four areas that responded which contained a dental hospital, it was unclear as to whether there were tier two or three commissioned services present outside of the hospital.

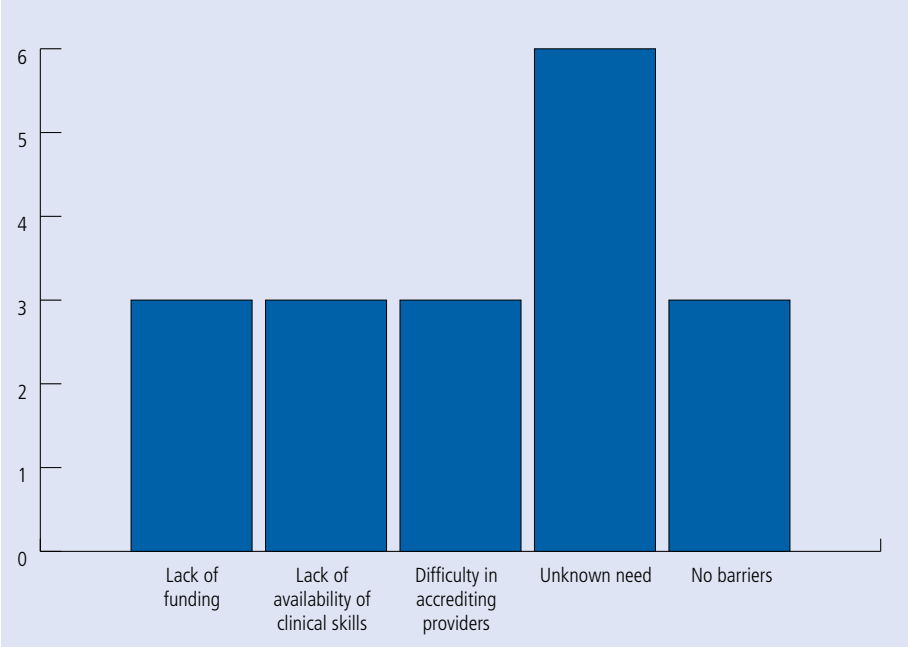
The referral process and the acceptance criteria for enhanced endodontics differ regionally, but an outline of endodontic acceptance criteria for different dental hospitals in England is presented in Table 2. This information was gathered from the individual hospitals online referral criteria and is accurate as of August 2018, but is subject to change.

There is some variation between different teaching hospitals, but generally, level three

Table 2 Overview of enhanced endodontic acceptance criteria for the different teaching hospitals in England (cont. from page 5)

Dental hospital	Acceptance criteria
Liverpool[18]	Advice and treatment planning Moderate/severe dento-alveolar trauma (avulsion, intrusion, root fractures) Patients with complex medical histories or on medications that affect their dental management Developmental abnormalities (Amelogenesis imperfecta, dens in dente) Pathological resorption Apical surgery in the presence of adequate orthograde treatment Possible training cases: re-root treatment, removal of separated instruments, non-negotiable canals, perforations with good prognosis, anatomical complexities
Manchester[19]	Advice and treatment planning Complex anatomy: sclerosed canals or excessive curvatures Separated instruments Management of open apices, resorption and trauma Where the medical history supports endodontic treatment over extraction (bisphosphonates or previous radiotherapy)
Newcastle[20]	Postgraduate treatment will usually be limited to a 'troubleshooting' service which aims to overcome immediate challenges and allow treatment to be successfully completed in primary care: overcoming anaesthetic problems, removal of old root fillings where this has proved challenging for the referrer, canal location, removal of fractured instruments or posts, perforation repair Priority will be given to: Patients at medical risk from tooth extraction Primary and re-treatment of functionally and aesthetically important teeth Management of dental trauma and its consequences including root resorption Investigation of atypical pain Investigation of suspicious pathology Surgical endodontics
Sheffield	The same referral criteria are used as Leeds Dental Hospital

Fig. 6 Barriers seen by DCO teams to further enhancing specialist endodontic services



complexity and some level two complexity cases are accepted for treatment and align with the complexity levels outlined previously.[3] Prerequisites to an enhanced endodontic referral being accepted to an institution include: a stable oral environment without active dental disease, treatment able to be carried out under local anaesthetic, ability to place a rubber dam and restorable teeth with strategic importance and good prognosis. Many institutions may also progress root treatments to a stage where they can be predictably completed by the referring dentist. One should bear in mind that it seems there is a caveat that acceptance criteria are subject to change to take into account the availability for endodontic services as demand and ability to provide services changes.

Discussion

NHS commissioned services are subject to change, and although this is not a comprehensive analysis of enhanced NHS endodontic services in England, it is currently the only investigation looking at the topic. The authors recognise that the results of this investigation are heavily dependent upon accurate information being provided from the commissioning teams completing the questionnaire.

The majority of NHS endodontic services are successfully delivered within primary care. However, demand for enhanced endodontic services is high, and they are therefore also provided by hospital services, enhanced practitioners and specialist practitioners. As highlighted in this investigation, access to these services can depend upon the location of the individual requiring treatment. If that patient does not live in an area where enhanced NHS endodontic services are commissioned or provided, they may have to travel further or pay privately to access treatment.

It has been highlighted through this investigation that the majority of commissioning areas feel as though there is an unmet demand for endodontic services. Unfortunately, there was a lack of information provided in terms of the number of referrals being received for endodontic treatment meaning it was difficult to assess the demand accurately. With the increasing uptake of electronic referral management systems, it is anticipated that this data will become easier to capture and can be used to inform the commissioning of specialist services in the future.

The role of the restorative managed clinical network (MCN) will become more important as the tiered approach to providing services improves.[8] An MCN should involve clinicians from a variety of backgrounds, both primary and secondary care, working together to improve the service delivery and care pathways for patients.[8,21] Topics of discussion at meetings often include referral criteria, patient pathways and current concerns. Primary care practitioners are the cornerstone of a successful

MCN and are actively encouraged to attend these meetings so that their points of view can be taken into account when decisions about improving services are made.

Across the country and across the various specialties, dentists with enhanced skills (previously 'dentists with special interests') based in the primary care setting are being used to alleviate pressure on secondary care services to provide a faster, more convenient service to patients.[22] A dentist with enhanced skills (DES) has been defined as 'any dentist working in the primary care setting who provides services which are in addition to their usual and important generalist role'.[22] For endodontics, a DES is a dentist who has achieved additional qualifications and has the sufficient experience to deliver level two complexity endodontic treatments (Fig. 2),[11] and to refer onwards where necessary.[8,23] A study conducted in London found that general dentists were in favour of schemes for dentists with enhanced skills to help with more advanced endodontic care and make referrals easier.[24]

Accreditation of dentists with enhanced skills should be based on the local needs of the population so that services can be planned appropriately and the management of workload between primary and secondary care can be improved.[23] However, as highlighted through this investigation, the lack of local needs assessments is a significant barrier in facilitating this.

The authors are aware of such a service present in South Cumbria, with the use of dentists with enhanced skills working under consultant guidance. This has been found to have reduced waiting times for patients and improved patient satisfaction with clinical care, outcomes and experience.[3] Elsewhere in the country, contracts have been put out for tender in London for tier two NHS endodontic services.

Conclusion

Based upon this work, it appears that the majority of director of commissioning operations teams within England do provide tiered levels of endodontic care to a greater or lesser extent, but it differs regionally. In areas that contain a dental hospital, it seems that the hospital provides all enhanced endodontic services due to there being no such providers elsewhere. This can place significant demands upon these hospitals.

Although this is not a comprehensive data set, it is the best that is available to date. It does demonstrate a trend that patients across England are not getting equal access to enhanced NHS endodontic services, especially if that area does not have a dental hospital. In order to advance such services, there must be regional needs assessments, workforce planning and provision for extra funding. With such investment to treat periradicular disease, this will inevitably lead to improved tooth retention and enhanced quality of life for our patients.

Acknowledgements

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