

# Advancing Dental Care: Education and Training Review

## Phase I Report – The case for change



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## Foreword from Wendy Reid and Sara Hurley

We would like to thank Nicholas Taylor and his team for this welcome and timely report. The first stage of the Advancing Dental Care: Education & Training Review has coincided with Health Education England (HEE)'s Workforce Strategy consultation, which ended on 23<sup>rd</sup> March 2018. The timing is therefore apt, and we are encouraged that similar themes have emerged from both consultation processes.



Both exercises, for instance, revealed the widespread opinion that multi-professional teams will be key to meeting future service demand, and that mutual knowledge and understanding of roles within clinical teams will be essential for effective teamworking and deployment of skill mix. We hope that progressive and supportive local cultures will provide the driver for this change.

Furthermore, we have heard the reiteration of the principle outlined in the Five Year Forward View, that closer integration across healthcare boundaries is required to achieve a seamless patient pathway. In delivering this objective, there are major benefits to be realised by raising the profile of the dental workforce and its pivotal role in the health of the nation. This will require a more holistic approach to the design and delivery of training – for dentists, dental care professionals and the wider workforce.

If we are to meet the challenges of the future, greater clarity is required on the skills and competences of the individual members of the dental team. Moreover, better use of the existing scope of practice will enable all clinicians to achieve their full potential and deliver the most appropriate care within their capabilities while boosting service capacity.

Greater flexibility, in particular, will enable career-long development and participation in quality improvement, through involvement in academia, for instance. Stakeholders have told us that, as well as benefiting patients, a flexible approach to lifelong learning will improve job satisfaction and encourage retention – a key priority the NHS in England.

These essential changes will require long-term commitment and collaboration across the oral healthcare system. We are therefore pleased that HEE's Executive Team have approved the commencement of Phase Two of the Review. This should start with focused engagement and the development of a robust evidence-base to inform and assess the feasibility of potential solutions.

We will work closely with Nicholas and the Advancing Dental Care team during the second phase of this Review, and look forward to testing ideas with students and new registrants in particular, to ensure we are providing them with intellectually stimulating and professionally rewarding careers delivering safe, quality oral care.

**Wendy Reid, Health Education England Director of Education and Quality, and Medical Director**

**Sara Hurley, Chief Dental Officer for England**

## Reflections from Nicholas Taylor

The Health Education England (HEE) Executive team invited me, as the current Chair of HEE Dental Deans, to take on the leadership of the broader programme of dental education and training restructuring and reform.

In the last twelve months, the Chief Dental Officer, Sara Hurley, and I have promoted and sought early feedback on a possible future structure of dental training, receiving support in principle from many organisations and individuals. To avoid any premature implementation of a new training model in dentistry, an initial exercise to review support and feasibility of these reforms has been conducted. To take this forward, the review has sought to:

- articulate the strategic direction and provide a clear narrative around the future model of dentistry education and training;
- develop the educational, service and economic cases for change;
- engage with stakeholders to test likely support for reform; and
- explore the feasibility of reform against a series of practical criteria.

I am pleased to present here the outcome of the review, including a set of recommendations for next steps.

The project team and workstream groups have worked tirelessly in taking forward this initiative, engaging with the workforce and gathering evidence. We owe a debt of gratitude to the many colleagues who willingly gave up their time to attend stakeholder events, contribute to discussions and respond to data collection requests. Their input has had an enormous influence on our understanding of the opportunities and challenges that lie ahead, and shaping our recommendations going forward.

### Nicholas Taylor

***Chair of English Dental Deans and The Committee of Postgraduate Deans and Directors (COPDEND)***

April 2018



## 1. Executive summary

Health Education England (HEE) exists for one reason only: to support the delivery of excellent healthcare and health improvement to the patients and public of England by ensuring that the workforce of today and tomorrow has the right numbers, skills, values and behaviours, at the right time and in the right place.

The composition of the dental workforce and the training structures in place to deliver that workforce are the product of historical developments and decisions. To fulfil its remit, HEE must periodically review existing models to ensure that established approaches meet future patient demand effectively and efficiently. Many factors need to be taken into account in such a review, but critically we must consider the need for a more holistic strategy to meet current and future healthcare requirements; demographic, technological and geographic factors; and future models of the commissioning and provision of services.

A key driver for our work has been Professor Steele's independent review of NHS dental services in England<sup>1</sup>. The report called for a stronger focus on ensuring that the skills, competencies and capacity of the whole oral health workforce can deliver on prevention priorities in a range of settings and are targeted at vulnerable or high-risk groups. This is reflected in the ambitions of the NHS Five Year Forward View, first stated in 2015 and restated in 2017<sup>2</sup>. Through initial engagement we have received numerous proposals for improvement that could deliver within the case for change articulated by Professor Steele.

Considering there to be a compelling case for change, HEE commissioned the Advancing Dental Care Review in 2017 to begin to identify a future dental workforce model and the training required to deliver it. The Review's project team has now completed the first phase of that task. It has explored a series of options, sharing thinking as widely as possible, engaging with stakeholders to receive feedback and to further develop proposals.

The first phase of this Review began to identify how training and professional development can encourage the whole oral health workforce to utilise its full skillset, as required. Drivers include capacity-building within the existing and future workforce, and enabling individuals to work within multidisciplinary teams and effectively engage with other professions such as health, education and social workers.

The Review has examined the numbers and competencies of the General Dental Practitioner (GDP) and specialist workforces, with a view to addressing the increase in patients with additional and/or specialised healthcare needs. This outcome would be supported by an equitable redistribution of training across the workforce, and improving access to oral healthcare. Other primary considerations included opportunities for life-long learning supported by new technologies, and developing and driving career progression while appreciating work-life balance.

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<sup>1</sup> Department of Health, *NHS Dental Services in England: An independent review led by Professor Jimmy Steele* (DoH; 2009)

<sup>2</sup> NHS England, *Five Year Forward View*, 2014; available at: [www.england.nhs.uk/ourwork/futurenhs](http://www.england.nhs.uk/ourwork/futurenhs) (Accessed 28th March 2018)



The Review identified a number of common themes underpinning our findings and recommendations. These include a call for flexibility in pre- and post- registration training pathways to facilitate workforce training adjustments. More opportunities for part-time training after registration to enable all dental professionals to develop their careers while retaining their existing skills would be welcomed. Moreover, career development opportunities should be available to dental professionals throughout their working lives to improve job satisfaction and encourage retention in the later stages of their careers. Lastly, academic and research opportunities should be embedded into all training and non-training posts to increase training capacity and innovation across the professions and locations of care.

The first phase of the Review has marked the start of what will be an open, inclusive process involving staff, providers and patient groups as we co-design practical solutions for the coming decades.

The Review is aligned with HEE's consultation on the health and social care workforce<sup>3</sup> and asks some major and urgent workforce questions. It has been undertaken at a time when the impact of the United Kingdom's withdrawal from the EU on the dental workforce remains to be understood and restrictions on European recruitment could provide further drivers for UK workforce transformation.

We recognise that there are other ongoing factors that will impact on the dental education agenda, that do not fall within the scope of this Review. Amongst these is the General Dental Services (GDS) Contract. Nonetheless the Review's objectives to provide a flexible workforce that is responsive to changes in demand and equipped with appropriate skills and competencies, will be of interest and value to those designing the new GDS contract. The Review also considered the *Starting Well: A Smile4Life initiative*, which aims to reduce oral health inequalities and improve oral health in children under the age of five years – focusing, in particular, on those children who are not currently visiting the dentist.<sup>4</sup>

This is a long-term project. It is unlikely that the first cohorts of newly-trained professionals will emerge for another five to ten years and, as such, the time is right to consider these changes now. The Review provides a unique opportunity to consider important changes to better meet future patient and service needs.

While our focus has been on the future, we have also identified areas where more immediate developments are possible. During the second phase of the Review, it will be imperative to assess feasibility in terms of cost, sustainability, and ease of implementation. It will be necessary to consider the implications for other stakeholders, such as Higher Education Institutions (HEIs), including dental schools, potential applicants to pre-and post-registration programmes in dentistry, patients and NHS Trusts.

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<sup>3</sup> Health Education England, *Facing the Facts, Shaping the Future: A draft health and care workforce strategy for England to 2027*; available at: <https://www.hee.nhs.uk/our-work/workforce-strategy> (Accessed 28th March 2018)

<sup>4</sup> NHS England, *Starting Well: A Smile4Life initiative*; available at: <https://www.england.nhs.uk/commissioning/primary-care/dental/starting-well/> (Accessed 28th March 2018)

The recommendations in this report represent a move towards a significant re-conceptualisation of dental education and training for the current and future workforce, one that is fit to deliver the services required in an age of rapid technological and clinical advancement. With patients at the centre of any proposed changes, dental clinical pathways and access to care have been firmly kept in mind.

A summary of our recommendations is set out below:

### Summary of Recommendations

**A To approve Phase 2 of the Advancing Dental Care (ADC) project as a 3-year programme of work in order to determine long-term efficacy of a new dental education and training structure in England.**

A1 Phase 2 will enable detailed stakeholder consultation; establish a robust evidence-base to inform developments across all requisite domains; and allow time for development and testing of economic models and training pilots. If approved, it is proposed that ADC Phase 2 bases its initial scheme of work on the recommended activities set out below.

**B Commission a number of research and/or evaluation studies in order to further build and refine the evidence-base for change**

B1 Undertake a comparative evaluation of current UK and international undergraduate and pre-registration models of clinical delivery

B2 Commission a workforce study on dental graduates' end destination, attrition rates, workforce mobility and model of working

B3 Undertake a dental workforce assessment to understand the numbers for a Dental Care Professional (DCP) skill-mix team and the funding implications.

B4 Conduct a comparative study of the costs and effectiveness of foundation training placements, delivery models and settings, and model the economic viability and impact of changing the proportion of training undertaken in different settings, while ensuring the development opportunities for transition from the safe beginner to independent practitioner.<sup>5</sup>

B5 Undertake an accurate workforce planning exercise based on a population needs assessments to agree best geographical distribution of training posts in England and obtain further data to fully understand the total resource of training.

B6 Commission the development of a resource impact template to allow education & training commissioners to baseline the costs of and income from dental training activities and forecast the impact of implementing recommendations with a view to realising efficiencies for re-investment into priority areas.

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<sup>5</sup> UK Committee of Postgraduate Dental Deans and Directors (COPDEND), *The Dental Blue Guide: A Reference Guide for Dental Foundation Training in England, Wales and Northern Ireland*, 2016. Available at: <http://www.copdend.org/data/files/Foundation/Blue%20Guide%202016.pdf>

**C Commission a series of taskforce reviews in order to inform models of training**

- C1 To review approved training models and funding streams for pre- and post-registration DCP training and investigate whether current commissioning arrangements are sufficiently flexible to meet future workforce needs, widening accessibility to speciality training and accrediting prior learning.
- C2 To consider the relevance/future need/distribution of the 13 dental specialties.
- C3 To explore the concept and function of a Speciality in General Dentistry.
- C4 To consider how Undergraduate Placement Fee (UPF) is used to support dental training in trusts, and whether there should be UPF allocation for first-year training as programmes become increasingly clinical in year one.
- C5 A taskforce review, comprising representation from each local office, to explore why training is more attractive in some areas and not others; to share and consider the various commissioning models and identify a preferred model or approach to its selection, which can be rolled out across England.
- C6 To develop a dental academia workforce strategy in both the dental schools and primary care based on a survey of projected workforce supply of dentist and DCP academics.
- C7 To establish a cross-system working group, chaired by the Chief Dental Officer, to explore ideas not solely within HEE's remit to develop (Scope of Practice, building more prevention into practice, technology and multi-professional undergraduate curricula).

**D Develop a number of pilots to test new training models**

- D1 Fully scope and evaluate models identified as best practice, for instance the General Professional Training/Longitudinal Dental Foundation Training model currently being delivered in the North East of England.
- D2 Pilot initiatives which enable dentists and dental care professionals in training to have access to placements (outreach) providing experience across primary (General Dental Services) and secondary care settings as well as with other Primary Care professionals (pharmacists, General Medical Practitioners and their teams, health visitors, district nurses, etc.).
- D3 With regards to post-registration/graduate education and training, pilot initiatives which strengthen the flexibility and appropriateness of education and training that enables dentists and DCPs to refresh and gain specific skills linked to identified priorities.
- D4 HEE (NHS Leadership Academy) to develop and pilot a self-help, team building pack, specifically designed to help dental teams assess their current level of efficient and effective working practices and support the design of development plans for further strengthening team performance.
- D5 HEE (NHS Leadership Academy) to develop system leadership from within primary care, identifying and supporting high-calibre individuals to maximise their potential.



## 2. Background

### 2.1 The case for change – dental health needs

The causes of oral diseases are well understood, they are almost entirely preventable and many people now experience good oral health. Yet, despite improvements over the last 20-30 years, there is still evidence of poor oral health which places a significant burden on the individual, society and the National Health Service (NHS).<sup>6 7</sup> In some areas, disease has changed to such an extent that there is no longer enough work to enable dentists to build-up and maintain their skill set in all clinical procedures.<sup>8</sup> There are, however, pockets of considerable dental disease in some communities and demographic groups. Recent reports by the Royal College of Surgeons of England Faculty of Dental Surgery have highlighted particular concerns about the oral health of children and older people requiring system-wide, whole-team prevention and treatment strategies.<sup>9 10</sup>

In response to improvements in oral health and an increased demand for cosmetic dentistry, many dental practices are expanding their remit in terms of offering a much wider range of cosmetic services. Changes in dental disease patterns, alongside increased austerity in Government funding, have resulted in a need to reconfigure the workforce so that it can deliver the services required. As the Steele Report demonstrated, much of the routine clinical work historically done by a dentist may be undertaken by a suitably-trained therapist in future.

Changing patterns of disease are having a profound impact on service needs. As a general trend, dental disease in the UK has changed dramatically. As shown in Figure 1, there have been significant improvements in recent decades in adult oral health in England that are projected to continue into the future. Over the same period, the profile of the population is ageing, suggesting a need for a greater emphasis on different treatment modalities and care pathways. There is also evidence of the impact of the relative maldistribution of the dental workforce geographically, certainly in a number of key specialities and the availability of therapists.<sup>11</sup>

To reduce health inequalities, it will be important to take an approach of “proportionate universalism”, which suggests that health actions must be universal, not targeted, but with a scale and intensity that is proportionate to the level of disadvantage.<sup>12</sup> It is also important to address the variety of challenges that are superimposed on the range of needs across the whole of England and the multiple communities seeking care. In order to make full use of the skill-set of GPs working in a primary care ‘high street’ environment there needs to be clarification of roles in order to make best use of the skills of the clinicians and an offer of access to training and accreditation.

<sup>6</sup> Appleby, J, Merry, L, Reed, R, *Root Causes: quality and inequality in dental health*, Briefing, QualityWatch, 2017

<sup>7</sup> Royal College of Surgeons of England, *Actions for the Government to improve oral health*, 2014

<sup>8</sup> Steele JG, Treasure ET, O’Sullivan I, Morris J, Murray JJ, ‘Adult dental health survey 2009: transformation in British oral health 1968–2009’, *British Dental Journal* 2012; 213:523–527.

<sup>9</sup> The Royal College of Surgeons of England Faculty of Dental Surgery, *The state of children’s oral health in England*, 2016

<sup>10</sup> The Royal College of Surgeons of England Faculty of Dental Surgery, *Improving older people’s oral health*, 2017

<sup>11</sup> Centre for Workforce Intelligence, *Securing the future workforce supply. Dental care professionals stocktake*, 2014

<sup>12</sup> Marmot M, Allen J, Goldblatt P, Boyce T, McNeish D, Grady M, et al, *Fair society, healthy lives: the Marmot Review: Strategic review of health inequalities in England post-2010*, 2010

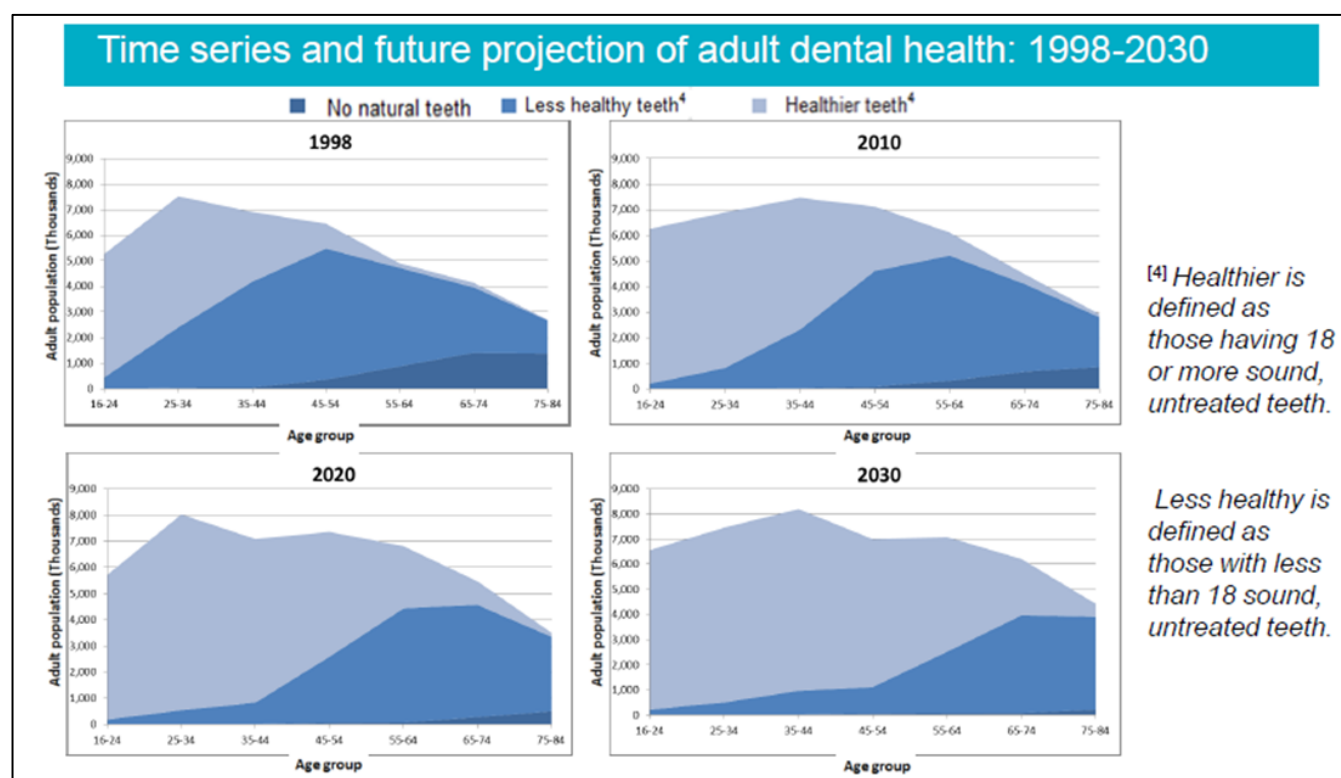


Figure 1 - Time series and future projection of adult dental health: 1998 -2030  
Data source/s Adult Dental Health Survey, 1998 & 2009

The projected impact of the elderly on dental practitioner workforce capacity highlights the imperative to consider strategies that address existing inequalities in the distribution of the dental practitioner cadre.<sup>13</sup> To note, NHS England's Smile4Life initiative has taken significant steps in identifying priority areas for intervention, on the basis of decay experience at a local authority level, existing oral health improvement plans and trends in oral health.

Improving the distribution and accessibility of dental practitioners and DCPs will require a flexible approach that promotes the deployment and employment of the skill sets of the whole workforce and raises awareness of the underutilised potential of the current DCP scope of practice. There is a collective obligation to grasp every opportunity to improve patient outcomes and exploit the business potential to further optimise practice performance.

Therefore, it is timely and apt to take stock of dental education. In order to offer the best value in terms of outcomes for our patients and the profession, we have an obligation to identify the optimal approach to secure a dental workforce that is fit for purpose, now and in the future.

## 2.2 The case for change – workforce profile

For 70 years, since the beginning of the NHS, GPs have delivered the majority of NHS provision and contributed hugely to the improvement in the oral health of the nation. GPs will continue to be the mainstay for the provision of NHS dental care with the general dental practice team being

<sup>13</sup> Watt RG, Listl S, Peres M, Heilman A, *Social inequalities in oral health: from evidence to action*, International Centre for global health inequalities research and policy, 2016; available at: [http://media.news.health.ufl.edu/misc/cod-oralhealth/docs/posts\\_frontpage/Socialinequalities.pdf](http://media.news.health.ufl.edu/misc/cod-oralhealth/docs/posts_frontpage/Socialinequalities.pdf)

complemented by dental professionals in the community, hospital, academic, research and public health arenas. However, delivery of quality care is dependent on a quality team; as the General Dental Council (GDC) states: “good dental care is delivered by the dental team” and “all members of the team contribute to the patient’s experience of dental treatment.”<sup>14</sup> It is clear that the DCP cadre is an essential element in the delivery of care and prevention. We must consider, therefore, the collective training aspects in order to develop the clinical team as much as we have previously focussed on the individual acquisition of skills and competencies.

The need for the dental team and clinical leadership endures but within the context of the 21st century there is a need to re-orientate NHS dental services towards prevention. While there is increasing tooth retention, there are new challenges that come from managing oral health in an ageing population with existing co-morbidities, reducing inequalities in oral health across socioeconomic groups and the increasing demand for more complex dental procedures. Therefore, there is an imperative to focus on developing a motivated, multidisciplinary workforce with the critical capacity to meet these needs. As well as technical skills, this requires the enabling and nurturing of strong skills in interprofessional and partnership working.

The demand for dental services is subject to continuous change, which has informed the need for substantial service redesign in the NHS. The planning and delivery of education and training must be responsive to these needs. Training requirements in the future should deliver a workforce capable of providing a service in a way that accords with Professor Steele’s recommendations around prevention, more routine practice and complex care, as well as multi-professional/disciplinary working.<sup>15</sup> Given the average length of time it takes to train a dentist (five years), a dental therapist (three years), and a dental hygienist (two years), HEE needs to try and anticipate the change, identifying what the business of dentistry will need in the future in terms of staffing and skill mix.

Developing the right people with the right skills and the right values is, of course, HEE’s mandate. HEE must move quickly to produce the optimal workforce required to deliver high quality, effective, compassionate and appropriate care through these reformed services, making the best use of available financial resources. The dental profession will need to be agile and flexible so that HEE can continue to make a real difference for patients and the public through high-quality education, training, development and transformation of the current and future workforce.

Evidence suggests an increasing proportion of dental care could be delivered by professions such as dental therapists and dental technicians as opposed to relying upon the highly specialised skills of the qualified dentist.<sup>16</sup> Yet, the profile of the dental workforce, despite a degree of evolution, is largely based on historic population needs and where dentists have chosen to work.

<sup>14</sup> General Dental Council, *Standards for the Dental Team*, 2013; available at: <https://www.gdc-uk.org/professionals/standards/team> (Accessed 28<sup>th</sup> march 2018)

<sup>15</sup> Department of Health, *NHS Dental Services in England: An independent review led by Professor Jimmy Steele*, 2009

<sup>16</sup> Brocklehurst P, Macey R, ‘Skill-mix in preventive dental practice: – will it help address need in the future?’, *BMC Oral Health* 2015;15 (Suppl 1):S10. doi: 10.1186/1472-6831-15-S1-S10

Despite various reports highlighting this situation, recent data as shown in Table 1 below reveal the composition of the workforce is not responding swiftly to changing needs.<sup>17</sup>

UK Registered Dental Workforce		
Registrant type	Dec' 2008	Jan' 2017
Dentist	32,281	41,441
DCP *	56,880	67,669
➤ Dental Nurse	42,959	55,358
➤ Dental Technician	7,460	6,176
➤ Dental Hygienist	5,160	6,898
➤ Dental Therapist	1,464	2,869
➤ Clinical Dental Technician	121	352
➤ Orthodontic Technician	16	521
<b>ALL</b>	<b>91,548</b>	<b>109,110</b>

\* Note – some DCPs may have more than one title

Table 1 - UK Registered Dental Workforce; Source: GDC, 2009; 2017

## 2.3 The case for change – training pathways

It could be contended that dental workforce reform can be achieved simply by adjusting training commissions for each profession. However, this Review provides an opportunity to explore new training structures and pathways with the aim of increasing flexibility (both for individual trainees and the service) and efficiency and the use of significant sums of taxpayers' money. We need to take this opportunity to future-proof the profession, to ensure it can adapt and respond to the challenges of the future with an increasing emphasis on prevention for all life stages and, in particular, for older people in care settings. In driving this forward we need to ensure that dental teams make best use of dentist and DCP skills to deliver against the clinical priorities and to offer career advancement as individuals are nurtured.

HEE should focus on providing appropriate opportunities to apply to study dentistry and to progress within the profession. We need to make it easier for those that have the ability to develop enhanced skills, specialise and formalise their competencies with a recognised qualification and registration, and most importantly meet the needs of our population. We need to make that journey (for all) as smooth, effective and as efficient as possible.

<sup>17</sup> Centre for Workforce Intelligence, *A strategic review of the future dentistry workforce*; available at: [www.cfw.org.uk](http://www.cfw.org.uk) (Accessed 28th March 2018).

When this Review was launched in 2017, HEE did not have a pre-determined conclusion and was open to suggestions and debate, although some ideas were put forward as a starting point to work from based on early discussions within HEE, with the Chief Dental Officer (CDO) and with a range of stakeholders. The basic premise for HEE's proposal arose from the GDC's publication *Scope of Practice*<sup>18</sup> and Figure 2 below. This shows the overlapping and distinct roles of the different dental professionals. While the range of procedures that can be undertaken by a dentist is extensive, it is also striking that the procedures that are uniquely limited to dentists is much smaller, with dental, therapists, hygienists, clinical dental technicians and others qualified to undertake many of the duties.

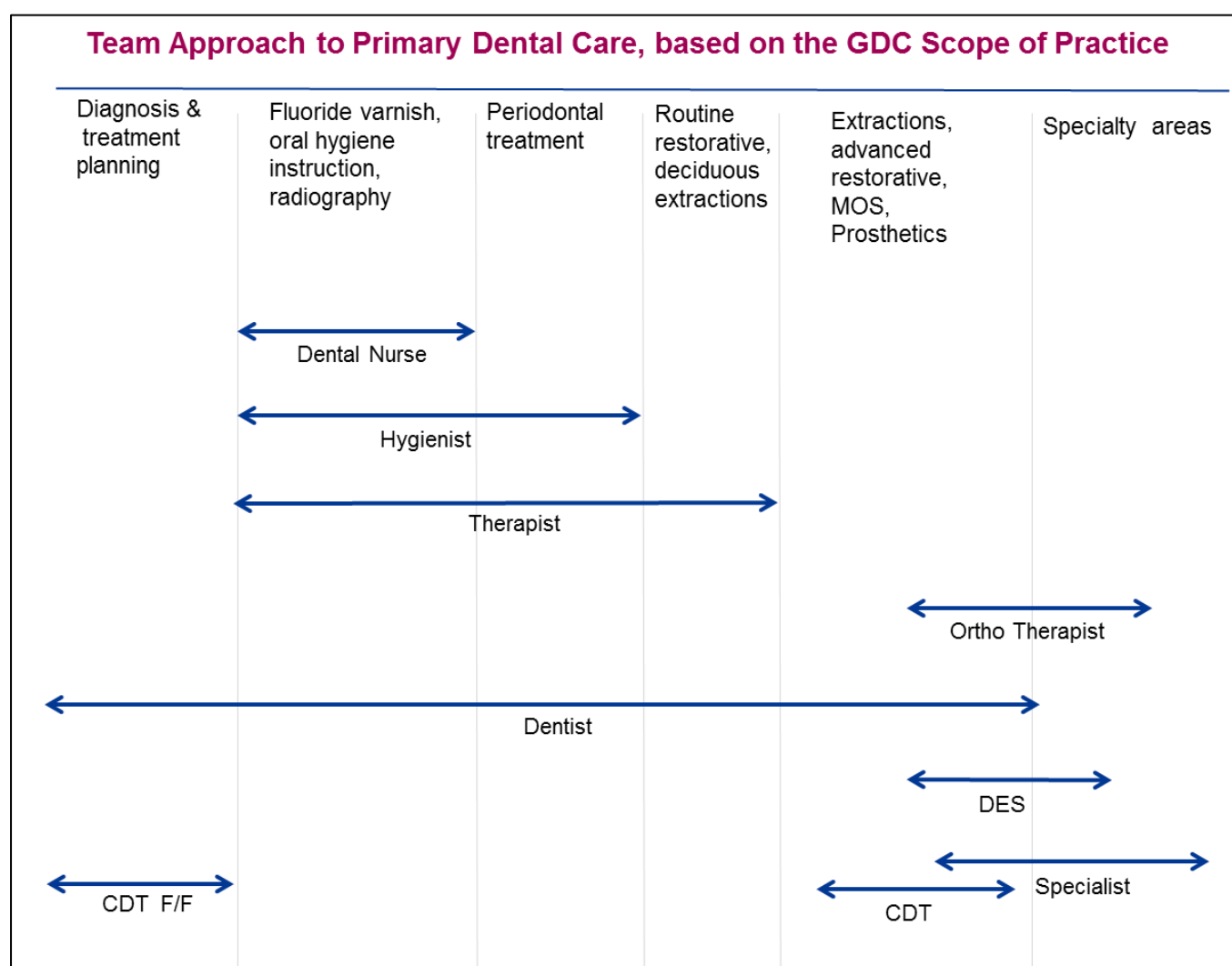


Figure 2 – A Team Approach to Primary Dental Care, based on the GDC Scope of Practice

This Review has begun to explore whether it would be possible to reflect the true potential of the Scope of Practice through new models for training pathways and ways of working, based upon projected demand for those roles. This has the potential to increase flexibility for trainees. Career choice could be made later and be based upon the opportunities available or allow them to step

<sup>18</sup> General Dental Council, *Scope of Practice*, 2013; available at: <https://www.gdc-uk.org/professionals/standards/st-scope-of-practice> (Accessed 28th March 2018)



off and onto the training ladder to better meet their personal circumstances and preferences. Increasing flexibility for the service could also allow HEE to project numbers required in each professional role more effectively, by reviewing the output opportunities from entry baseline. This would deliver a more effective use of taxpayer-funded resource to better meet patient, service and university requirements. Any system for career progression would, of course, need to preserve the integrity of the individual professional roles within the dental team and safeguard existing professional standards.

The CDO for England, Sara Hurley, has spoken of the importance of “putting the mouth back in the body” by which she means bridging the division between primary and secondary care and our engagement with other elements of the NHS, primarily medical and pharmaceutical services into seamless provision.<sup>19</sup> Such a shift in service delivery will necessitate consultants working in primary care for at least part of their time, but there are already examples of good practice in medicine and dentistry to inform this process.<sup>20</sup> It would mean moving the training to where the disease is prevalent and where the requisite care is delivered. The potentially devastating impact of conditions such as diabetes, dementia and cardiac disease on general and oral health may be limited by early management, delivered by a range of providers working together in primary care settings. Moving specialist clinical services into the community means that there needs to be a commensurate shift in clinical research focus and delivery, as well as investment in service leadership and development.

## 2.4 The Advancing Dental Care: Education and Training Review

The Advancing Dental Care: Education and Training Review (or ADC for short) was established to explore, model and test the future direction for dental education and training, to build consensus through engagement with key stakeholders across the oral healthcare system, and to develop recommendations for potential reforms. The roles, composition and training needs of the dental workforce (i.e. all dental registrants) have been reviewed and change requirements identified where necessary. Critical considerations included how to better meet future patient needs; ensure value for taxpayers' money; provide greater workforce flexibility both for the NHS service and for individual registrants; and improve job satisfaction and clarity of role for individual dental professionals. To deliver this vision a range of innovative ideas has been explored.

In line with HEE's mandate from the Department of Health and Social Care to deliver the right workforce for the future, the ADC Review has explored and tested the strategic direction of a dental training reform programme with the express purpose of articulating the strategic direction; developing the educational, service and economic cases for change; engaging with stakeholders to test likely support for reform and exploring the feasibility of reform against a series of practical criteria. As part of that engagement exercise, a significant number of letters have been received by senior members of HEE and the Office of the Chief Dental Officer (OCDO), including from the GDC and the British Dental Association (BDA). A magazine article and journal editorial were

<sup>19</sup> Hurley, S, *Putting the mouth back in the body*. NHS England: NewsBlog 18th August 2016; available at: [www.england.nhs.uk/expo/2016/08/18/sara-hurley2](http://www.england.nhs.uk/expo/2016/08/18/sara-hurley2) (Accessed 28th March 2018)

<sup>20</sup> Winpenny, E, Miani, C, Pitchforth, E, Ball, S, Nolte, E, King, S, Greenhalgh, J, Roland, M, 'Outpatient Services and Primary Care. Scoping Review, Substudies and International Comparisons', *Health Services and Delivery Research* 2016;4(15): 1-322. Available at: [www.rand.org/pubs/external\\_publications/EP66473.html](http://www.rand.org/pubs/external_publications/EP66473.html)

published and responded to with appropriate letters of explanation to ensure transparency and clarity of purpose.

## 2.5 Scope of the Review

The ADC Review was not initiated to generate new evidence to feed into the GDS contract reform process. The business of dentistry will drive engagement with the new contract once it is introduced. Practice owners will need to determine how many dentists, therapists and other staff will be required to deliver the service. Results from an initial pilot show that 85% of providers will consider changing the skill mix in their practices and 50% will increase the use of therapists: a highly significant figure.<sup>21</sup> The next phase in the development of contract reform has moved to Prototypes, the outcomes of which are not yet available but will need to be taken into account within phase two of ADC.

The Review also excluded any evaluation of the restructuring of the HEE Dental Dean regional and local office structures in response to the Comprehensive Spending Review. It is recognised, however, that the evidence and advice that the project team has received about the scope and make-up of the future dental team will impact on the design of HEE dental office structures.

**Objective one:** *Collate a robust evidence-base on the population's oral health needs in a technology enabled, prevention-oriented system, and model the most appropriate dental workforce for meeting those needs.*

**Objective two:** *Identify and evaluate new and existing innovative training approaches, and develop costed recommendations for adapting or upscaling exemplars within the available funding envelope.*

**Objective three:** *Understand the CPD requirements of the existing workforce, and identify best practice.*

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<sup>21</sup> Department of Health. *NHS Dental Contract Pilots – Early Findings*, 2011. Available at: <http://www.ncl.ac.uk/media/wwwnclacuk/research/files/NHS-dental-contractpilots-early-findings.pdf>

HEE's remit is for training, education and workforce supply in England only. Nevertheless, it is recognised that reforming the composition of the dental healthcare workforce and the training structures for delivering that workforce are likely to have a wider impact across the whole of the UK. Key stakeholders from the four nations were invited to participate in the working groups underpinning the review in order to ensure that feedback, interdependencies and areas of impact across the UK were identified. It should be noted that, while HEE consulted with all four nations to ensure co-production throughout the project, any regulatory matters that arise will be a UK-wide issue and must be determined by the GDC.



### 3. Methodology

The ADC Review Project Team has been led by the Chair of English Dental Deans & COPDEND. To ensure a sufficient breadth of knowledge and expertise across the dental healthcare system in running the project, the team consisted of a specialty consultant, a registered dental nurse, a registered therapist, educators, GDPs and academics. The project has also been supported by HEE programme and policy expertise.

The project has involved consultation with patients, experts, dental professionals, trainees and employers to capture views and ensure coproduction. The project team actively mapped stakeholders to ensure that HEE built consensus across the oral healthcare system, developing support and recommendations for potential reforms, and informing a future decision-making process by HEE's Executive Team.

The approach to the ADC Review has involved sharing current thinking and the evidence-base underpinning the case for reform as widely as possible; engaging with stakeholders to receive feedback and develop the proposals; and assessing the feasibility of such proposals from a variety of perspectives (e.g. educational, service, quality, economic, patient and legislative).

The project team has established a broad evidence base through several means, drawing information and feedback from literature sources, stakeholder engagement and scoping of existing good practice. The project team has also sought advice from educationalists and academics from within the oral healthcare industry to gather insight and expertise.

Proposals have been tested by relevant stakeholders and by collating a wide variety of views. The evidence produced is intended to inform a decision-making process, by HEE's Executive Team on next steps.

All recommendations arising from the review will be evaluated against patient care outcomes and pathways to ensure that the impact to patients is fully realised and at the centre of proposed reforms.

A major stakeholder event held on 29th September 2017 enabled HEE to engage with key stakeholders and start conversations about education and training reform for the oral healthcare workforce in England. The outcomes from the workshops undertaken during this event were used to shape a number of work-streams for the project to develop ideas further and test their suitability to reform dental services for the future.

Five working groups were established to explore each of the project work-streams. The working groups for each area of the review included a broad cross-section of the oral health profession, educators, learners and patient representation. Each work-stream instigated a range of stakeholder engagement and data gathering activities between November 2017 and February 2018, variously involving consultation exercises, expert panel discussions, focus groups and surveys. This work involved commissioning academic institutions to support specific activities where appropriate. Full details of the groups involved in stakeholder engagement may be found in Appendix 1.

The outcomes from the work-streams informed and shaped discussions at a second stakeholder event held on 20<sup>th</sup> February 2018. The overall project output is captured in this final report with evidence-based recommendations which were presented to HEE's Executive Team in April 2018 taking consideration of the strategic priorities of the Department of Health and NHS England. The Executive Team subsequently approved the publication of this report, and granted permission to commence the second phase of the Review process, based on the recommendations outlined in this Report.





## 4. Findings

This chapter provides a synthesis of predominantly qualitative data gathered by five project workstream groups, presented thematically. The five workstreams focused respectively upon:

- 1) dental training pathways;
- 2) post-foundation workforce training and development;
- 3) building on the scope of practice – the future dental team;
- 4) economic models for training; and
- 5) short-term adjustments to dental education and training.

Given the inevitable degree of overlap and cross working between the workstreams, collective findings have been synthesised and presented thematically, as outlined in Table 2. The economic models for training will underpin any future decision-making process regarding training structures and delivery, in terms of feasibility and resource. Therefore, the findings of this workstream are set out separately, in Chapter 5

Chapter	Subject
<a href="#">4.1</a>	<b>Flexibility in workforce training pathways</b>
<a href="#">4.2</a>	<b>Pre-registration education and training</b>
4.2.1	Undergraduate training
<a href="#">4.3</a>	<b>Post-registration training</b>
4.3.1	Foundation Training
4.3.2	Core training
4.3.3	Specialty training
4.3.3.1	Dental specialty training: needs assessment
4.3.3.2	Development of a Specialty of General Dental Practice
4.3.4	DCP post-registration training
4.3.4.1	DCP post-registration support
4.3.4.2	DCP specialty training
<a href="#">4.4</a>	<b>Workforce recruitment and retention</b>
4.4.1	Non-UK workforce supply
4.4.2	Continuing career development
<a href="#">4.5</a>	<b>Academic and research opportunities</b>
<a href="#">4.6</a>	<b>Scope of practice</b>
4.6.1	The Future Dental Team
4.6.2	Criteria for evaluating ideas for a future Scope of Practice
4.6.3	Understanding & tailoring training provision to local needs
4.6.4	Service Configuration and Practice Business Models
4.6.5	Inter Professional Learning (IPL)
<a href="#">4.7</a>	<b>Skills development</b>
<a href="#">4.8</a>	<b>Digital technologies</b>

Table 2 – Summary of thematic categories

## 4.1 Flexibility in workforce training pathways

Building flexibility into pre- and post-registration training pathways would allow both the service and training commissioners to be more responsive to current and projected service needs by adjusting the balance of the workforce. This would apply to the NHS and private sectors. Furthermore, flexibility in training pathways would facilitate greater opportunities for career development.

The provision of flexible training pathways, particularly for Dentists and Hygienists/Therapists, varies considerably across dental schools and a number of approaches to flexibility are evolving. A review of the current and planned arrangements would provide an insight into different approaches and allow a shared understanding of best practice, enabling models to evolve where appropriate. A flexible training model for Dentists and Therapists would make it easier to modify workforce numbers in the future should the need arise.

The future workforce would benefit from a progression framework from dental nurse to extended practitioner, illustrating skills and expected competencies at each level. This would be with a view to prevent glass ceilings at any point during progression between roles.

Stakeholders recognised the benefits of both foundation degree and apprenticeship routes to DCP registration. However, the cost and associated debt burden of a foundation degree presents a significant barrier, and apprenticeships require better regulation to ensure consistent quality across training practices. The Review found that increased funding for non-dentists could risk a reduction to universities' income from dentistry courses, thus impacting on teaching staff access, although the remuneration funding model for Orthodontic Therapists was seen as a success.

The entry criteria for dental pre-registration training are often considered inflexible with the result that suitable candidates may be lost to the workforce. Dental education and training at all levels tends to take place in defined 'boxes'. There are advantages in creating opportunities towards the end of training programmes for the competent trainee to be able to gain some experience of the next element in the career plan, possibly through part-time observerships or similar.

Career progression routes into dentistry can be challenging, time-consuming and costly. While the number of suitable candidates may be small, there should be clear and proportionate mechanisms for those candidates to progress without unnecessary barriers. This should include the recognition of prior accredited learning at all levels, where appropriate. With regard to formal career structure, clinical skill competency and experience, training could be mapped to the Tier 1, 2 and 3 clinical complexity standards outlined within the English Dental Commissioning Standards. Stakeholders strongly asserted that the individual dental professions must maintain their integrity, both to inform and assist the service in designing and implementing the appropriate skills-mix, and to ensure that dentistry, in particular, remains a competitive career, that attracts the most able and qualified candidates.

## 4.2 Pre-registration education and training

### 4.2.1 Undergraduate training

The government's 10% reduction of undergraduate dental school places is likely to lead to a shortfall of dental graduates by 2024. This could be mitigated by increasing the skill level and utilisation of the wider dental workforce, thus reducing dependence on GDPs. In addition, the reduced number of funded places for UK students means there are more positions for international students, who show a higher retention rate than European Economic Area (EEA) students.

The Review found that more leadership and management skills should be taught at the undergraduate level, to address the resilience issues that have been identified in recent registrants. Dental school faculties would require up-skilling in this subject area in the first instance. The Review also reflected on the known impact of increased high fermentable carbohydrate diets on young people's oral health. Stakeholders concluded that education planning for the next 25 years must address this.

There has been a rapid increase in the number of applications for degree level therapist courses in the last year. This may simply be due to increased awareness; however, the halt in HEE-commissioned courses may have resulted in a downturn for diploma courses and a consequent increase in degree applications. Overall there is no evidence to date of any change in the number of therapists in training but this must be carefully monitored.

The precise scope of practice and contribution of therapists to the dental team continues to be poorly understood. Integrating dental and therapist undergraduate training may help to address this issue; modular courses would make this easier to implement.

With regard to alternative pre-registration training models, courses that provide more training in primary care clinical placements (GDS & CDS) provide more opportunities for students to apply the skills they are learning and have learnt. There could also be an opportunity to support more remote or less popular geographic areas through a points-based (Australian/Canadian style) system to encourage students to take placements in those areas.

## 4.3 Post-registration training

### 4.3.1 Dental Foundation training

Stakeholder engagement suggested that the confidence, skills and experience of dentists entering Dental Foundation Training (DFT) has decreased over recent years. A number of dental trainees reported a disconnection between undergraduate education and clinical practice. This may be due to an increased focus on non-technical "softer skills", potentially limiting the opportunity to acquire practical skills and competencies. A number of studies have been published in recent years which question the efficacy of dental undergraduate education in its present form.<sup>22 23</sup> There was a call for university schools to establish a better understanding of

<sup>22</sup> Ali, K, Slade, A, Kay, E, Zahra, D, Tredwin, C., 'Preparedness of undergraduate dental students in the United Kingdom: a national study', *British Dental Journal*, 2017 222 (6): 472-477.

<sup>23</sup> Oxley, C, Dennick, R, Batchelor, P, 'The standard of newly qualified dental graduates: foundation trainer perceptions', *British Dental Journal*, 2017; 222 (5): 391-395

foundation dental practice workplaces, to better manage the transition to the workplace after qualification.

Considering the need to support a 'Safe Beginner' to transition to a 'Independent Practitioner', there is a concern that DFT is not currently required for all graduates. (Foundation is a requirement of the Performers list to work in the NHS). While the mechanisms to enable this change are complex, evidence is starting to emerge that DFT has an increasingly important role to play in the development of a dental practitioner capable of working independently.<sup>24</sup>

Early-career dentists reported that they would benefit from more formal, quality assured training and support after Foundation Training. This should include greater mentorship and support to practice independently as well as introducing a personal development plan and a portfolio to facilitate development (and validation) towards other competencies e.g. Tier 2. Access to a single portfolio throughout training was desired. Early career practitioners also felt that it would be helpful if HEE could provide guidance on the educational value of privately delivered education. This could better guide post-foundation dentists to training most relevant to NHS Tier 2 validation.

Early-career dentists expressed concerns regarding litigation and complaints from patients, which could lead to a more risk-adverse workforce. This has been echoed in recent literature.<sup>25</sup>

#### 4.3.2 Dental Core training

Stakeholders sought greater opportunities for part-time training after registration and foundation training to enable all dental professionals to develop their careers while retaining their existing skills. This would particularly benefit dental core trainees and DCPs.

There are recognised advantages to allowing a proportion of dentists and DCPs to continue their career development on a part-time basis following completion of pre-registration and foundation training. This would support the maintenance of generalist skills while generating income to manage any debts incurred during pre-qualification training. It would also provide flexibility to reflect and change career direction if wanted.

Dental Core Training (DCT) has the significant scope for flexible career opportunities. Historically, the majority of DCT applicants enter directly from DFT and most train at this level for one to two years before returning to general practice. There have been few opportunities for dentists to enter (or return to) DCT after a period of time in practice. The ability to enter DCT on a part-time basis, while remaining in general practice presents a number of advantages, including:

- the retention of generalist skills;
- continued contribution to service delivery;
- engagement in research and access to career opportunities in academia; and
- greater experience of and understanding about primary care.

<sup>24</sup> Ali, K, Khan, S, Briggs, R, Jones, E, 'An evaluation of a two-site pilot model for dental foundation training', *British Dental Journal*, 2017; 223: 287-292

<sup>25</sup> Hellyer, P, Radford, D, 'An evaluation of defensive dentistry: w(h)ither the profession', *British Dental Journal*, 2017; 223(12):885-888

It would also help more recent graduates to pay off their student loans.

There is a model (known as General Professional Training or GPT) which combines DFT and DCT Level 1 over two years, training part-time in each element. These posts are highly sought after by new dental graduates and are seen to provide valuable opportunities for career development. At present this model is confined to 24 places each year in two HEE Local Offices. Development of more dentistry-based DCT1 posts could be combined with increased opportunities to develop more GPT type models.

There is significant geographical variation of DCT posts across England which may need to be reviewed. Currently, there are approximately 600 DCT posts in England with variable numbers across the 11 HEE Offices and regions in England. DCT has historically been associated with the former Senior House Officer (SHO) model based on Oral and Maxillo-Facial Surgery departments in NHS Trusts.

New types of placement with an increased focus on dentistry in primary care will be required in the future to reflect changes taking place in the delivery of dental care and attract dental trainees. The introduction of the Tier 2 commissioning models may also create opportunities for DCT experience in a related specialised area to contribute to accreditation to deliver these services.

DCT is recognised as providing a stepping stone for trainees to decide what specialty to go into. However, DCT3 posts are currently expensive for employing trusts in England, and many specialties can be entered from DCT2. DCT has a limited number of posts at Level 3. While it is not essential to undertake a third year in DCT to take up a Specialty Training Post, experience at this level is considered to be advantageous. With the exception of GPT, the majority of DCT posts currently offer training in one particular aspect of dentistry. Consequently, new graduates who are still uncertain as to their long-term career aspirations have limited opportunities to sample a variety of dental options. Introducing a rotational element in more than one specialty area may be of value.

DCT is currently the main route for recruitment into Dental Specialty Training (DST). The development and promotion of other routes of entry into specialty training (e.g. from general dental practice) should be developed.

### **4.3.3 Specialty training**

#### **4.3.3.1 Dental specialty training: needs assessment**

The Review has generated the opportunity to discuss the relevance and future need for all 13 dental specialties.

At present, speciality training is mostly delivered in teaching hospitals within urban areas, therefore access to trainees and to specialist dental care is primarily dependent upon geographic location. A geographical population needs assessment would help to identify the dental specialties that are required and relevant throughout all the regions in England. The majority of specialty training is delivered on a full-time basis. More part-time opportunities should be considered, for similar reasons to those set out for DCT.



There is an argument for providing more specialty dentistry within a NHS primary care setting, although the impact of any changes e.g. cost implications / investment, should be carefully considered. Stakeholders generally agreed that training is dependent on access to appropriate patients, trainers and clinical teams. While the majority of trainers and clinical teams currently work in dental hospitals, there is a need for a combined local and national approach to facilitate change. Changes to contractual arrangements could also necessitate the development of more specialty training programmes in a primary care environment

Further work is required to determine whether all existing specialties are needed, and whether it would be either possible or desirable to shorten training in any dental specialities. Length of specialty training programmes is currently highly prescribed and delivery models vary across specialties. In most instances these variations are appropriate, but it would be helpful to review this in the light of other recommendations in this report.

HEE could consider developing funded post-CCST (Certificate of Completion of Speciality Training) Fellowships, as currently available in medicine to acquire ‘super’ Tier 3c specialty skills, e.g. oncology, cleft & developmental, trauma. Opportunities to ‘credential’ learning and experience undertaken outside formal specialty programmes are currently being developed in medicine. This is yet to be considered in dentistry, and therefore career progression opportunities may be more restricted. A review of the medical model might be worthwhile to see if changes to the approach would be of value.<sup>26</sup>

#### 4.3.3.2 Development of a Specialty in General Dental Practice

The review encountered widespread support for introducing a Specialty of General Dental Practice, as a more formal training pathway for the dental practitioner. This could ‘up-skill’ the dentist workforce, provide leaders of the profession and provide a route to gain Tier 2 complexity skills. It could also produce a dental practitioner better able to lead a NHS multi-skilled dental team.

A primary/secondary skills escalator could achieve this goal and take dentists to a higher competency. A possible route would be through a portfolio approach, building in elements of experience in dental practice; additional formal postgraduate clinical training; academic training; training in leadership and management and evidence of its application in practice; together with training in and experience of the delivery of education to others (e.g. as an Educational Supervisor in DFT).

### 4.3.4 DCP post-registration training

#### 4.3.4.1 DCP post-registration support

The Review identified a lack of appreciation or understanding of DCP capabilities, which was compounded, in part, by current professional “segregation”. Nomenclature, was found to be a key issue: many titles are either overly long or do not adequately describe the role being

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<sup>26</sup> General Medical Council, *Medical specialist and GP Registration*; available at: <https://www.gmc-uk.org/doctors/24630.asp> (Accessed 28th March 2018)

performed. The system was found to be particularly uninformed on the role of the Clinical Dental Technician (CDT), largely due to low numbers of registrants.

Dental Therapists (and Hygienists) enter General Dental Practice in much the same way as Dentists and have similar induction and support needs. There are a number of foundation training schemes for Therapists in place in some areas but they are not consistently available. The case for a form of foundation training programme for Dental Therapists should be considered as a matter of urgency, particularly in light of Direct Access.

#### 4.3.4.2 DCP specialty training

The Review team was urged to recognise specialist experience and ensure consistent assessment across roles. Indeed, the future system should permit hygienists, therapists and clinical dental technicians to advance to specialist roles. However, there must be a mechanism for specialist DCPs to maintain their skills, especially if specialist roles are not recognised. Effective, joined-up education and commissioning would guarantee secure employment for specialist DCPs, linked to patient pathways and service need.

### 4.4 Workforce recruitment and retention

#### 4.4.1 Non-UK workforce supply

The impact of Britain's departure from the European Union remains to be understood. GDC data shows that 16% of registrants are EEA graduates, but less than 1% of DCPs are EEA graduates. This is largely due to dental degrees enjoying automatic recognition under the European Professional Qualifications Directive. Conversely, DCPs are managed under the general systems regime of the Directive and are subject to individual assessment.

There is a low retention rate of EU nationals, who currently represent an inconsistent workforce. The distribution of non-UK graduate dentists is unequal across the country; rural Lincolnshire, for instance, relies heavily on Eastern European dentists.

There is no standardised entry into the NHS workplace for dental graduates. All UK graduates are required to successfully complete foundation training after graduation, in order to work in primary care, while non-UK and non-EEA dentists must pass the GDC Overseas Registration Examination (ORE), followed by Performers List Validation by Experience (PLVE) should they wish to be on the Performers List and work within the NHS.

EEA graduates are eligible for UK practice without completing foundation training, although they must satisfy NHS England's requirements to join the Performers List. NHS England may impose conditions on an EEA graduate's Performer List number, which can incur significant delays, thus compromising the availability of this workforce. This can have serious implications in difficult-to-recruit-to areas.

International graduates may find it more difficult to secure posts in geographical areas where competition is greater unless they can demonstrate equivalence to UK training programme competencies. GDC data indicates that international graduates will remain longer than EEA graduates and are a group to target to improve retention. Their services could be secured for difficult-to-recruit-to areas (e.g. rural, coastal, inner city), Additional support and education could

be commissioned to allow international graduates to acquire knowledge of working within the NHS system.

#### **4.4.2 Continuing career development**

Career development opportunities should be available to dental professionals throughout their working lives to improve job satisfaction and ensure that the clinical workforce is not lost to the profession in the later stages of their careers.

Changes to pension arrangements are likely to mean that the majority of the dental workforce will be required to be in work for longer but may not intend to practice clinically throughout their careers. Furthermore, the NHS pension is only available to Dentists in primary care, a major issue for the profession's other workforce members. In addition, changes to the generational expectations of work/life balance and career progression may mean that dental professionals could be lost to the dental workforce unless opportunities are in place to engage in the practice of dentistry in flexible arrangements, including non-clinical elements. Rather than lose this expertise, the knowledge and experience of individual dental professionals could be 'harnessed' to pass on that expertise to others who are at an earlier stage in their careers.

#### **4.5 Academic and research opportunities**

The Review encountered the widespread opinion that academic and research opportunities should be embedded in all training posts. This would make full use of the skilled workforce and maximise opportunities presented throughout all areas of practice. Such opportunities are not currently given prominence, despite their potential to support job satisfaction, motivation and career development. Furthermore, the majority of dentistry is delivered in primary care, where there is an opportunity and available human resource to undertake meaningful research, which would contribute to service improvement.

Stakeholders reported difficulties in recruiting dental professionals into academic careers, advising that this could have serious implications for undergraduate teaching in the future. The current National Institute for Health Research (NIHR) guidelines were not seen as meeting the academic workforce requirements of primary or secondary care dentistry. An extension to part-time arrangements could provide a potential enabler for more innovative approaches.

Undergraduates and new graduates are entering dentistry having already demonstrated considerable academic achievements. To ensure the continued stimulation and motivation of the dental workforce, stakeholders felt that academic and research components should be embedded in all training programmes. This would build capability and capacity for research and academia. This opportunity could be extended to those not undertaking training during their careers.

A range of potential solutions were put forward during the Review, particularly related to promoting research and academia in primary care settings:

- Collaborative working between HEIs and primary and secondary providers
- The introduction of academic posts in General Dental Practice for DCT trainees, for example

- Establishing NIHR Academic Clinical Fellowships (ACFs) and Clinical Lectureship (CLs) posts for primary care dentists (including GDPs) in key dental schools, with oversight from senior academics (including GDPs as NIHR Clinician Scientists).
- The establishment of academic primary dental teams with strong links to Academic Units of Primary Care.
- For GDPs, clinical elements of NIHR ACFs, CLs, Doctoral Research Fellowships (DRF) and Clinician Scientists could be delivered through normal contractual arrangements in the GDS.
- For registered DCPs and front-line staff who are non-registrants, universities might actively seek out and support individuals with an interest in research to apply for opportunities, including to the HEE/NIHR Integrated Clinical Academic Programme.
- Meanwhile, opportunities for research in primary care could be actively promoted by dental schools and during foundation training, including encouragement to complete the NIHR Good Clinical Practice (GCP) and Massive Open Online Courses (MOOC) training.

## 4.6 Scope of Practice

### 4.6.1 The Future Dental Team

The vision of the future dental team comprised a high-functioning mix of dental care professionals where the right skills were deployed at the greatest efficiency and delivering maximum benefit for the patient. A number of enablers were suggested, many of which related to service design and technological support for promoting connectivity, improving patient flows and providing a more holistic service offer.

Data from a survey commissioned by the Scope of Practice work-stream group suggested that 75.9% of respondents think that the current GDC Scope of Practice is not fully utilised and that this is due to hierarchical attitudes/fears, a lack of knowledge and/or confidence around skills, payment models, prescribing limitations (e.g. local anaesthetic, fluoride varnish) and a lack of understanding by the public/other professionals of the different roles within the dental team. This perception was reinforced by opinions expressed during face-to-face stakeholder engagement. There was a real sense of frustration that dental teams in many instances were not working optimally and that there was a risk that DCPs become frustrated, deskilled, and demotivated. Future work needs to look at the training model for Hygiene and Therapy and consider why the majority of Hygiene and Therapy Graduates work as Dental Hygienists.

A cultural change is needed to enable and encourage change in practice. This must engage all aspects of the workforce, for example: clear pathways and expectations for dental therapists and use of their full scope of practice to perform more minimally invasive work, simple restorative procedures and limited prescribing.

There is also a need to engage the public to create the right supportive, holistic environment for the scope of practice: improving the understanding of the different roles within the dental team as well as creating a greater preventative image for oral health and how that links to wider health & well-being.

There was a recognition of a need for greater connection between Dentists and DCPs, between Dental Professionals and other health and care professionals, care workers and social workers; between Dental Practices locally, and within other connected community-based services e.g. Pharmacies and General Medical Practices.

Our enquiries uncovered anxieties regarding the “grey areas” of DCP scope of practice which, in turn, can limit the activities of some DCPs. For instance, Clinical Dental Therapists could potentially take greater responsibility for care of the elderly, oral cancer screening and preventative care – both in practice and in the community. Similarly, Hygienists and Therapists could widen their scope of practice, if permitted direct access. GDC guidance on scope of practice might be reviewed for purpose rather than skills.

#### **4.6.2 Criteria for evaluating ideas for a future Scope of Practice**

To decide what to prioritise for inclusion within scope of practice now and in the future, the relevant work-stream leads created a set of evaluation criteria that could be applied to potential new areas of practice.

Foremost amongst these was the demonstration of benefits for priority patient groups, namely the 25% of children who don't visit the dentist (and their parents); older people with complex dental needs; and men, for prevention of acute and chronic diseases. It would also be important to test economy of performance, by asking whether an idea makes efficient and effective use of the current skills mix. Other suggestions included encouragement of joined up working; diversity (in terms of both people entering dental professions and the communities reached); and the flexibility to tailor to local needs.

#### **4.6.3 Understanding & tailoring educational provision to local needs / communities:**

In specific areas such as caries prevention in the new born, establishing routine links between care homes and dental practices; and smoking cessation and oral screening for targeted groups, it was acknowledged that more targeted, effective care could be provided if the needs of the dental workforce were known and planned for. It was acknowledged that extending practice into these areas would require enhanced local workforce training & education combined with connectivity across services, including the capture and sharing quality patient data, and application of quality public health insights.

#### **4.6.4 Service Configuration and Practice Business Models**

Stakeholders felt that service and business models should address the perceived underuse of skills within the current delineation of the GDC Scope of Practice and release the more highly skilled members of the dental team to address more complex oral health needs. This would, in turn, increase efficiency and reduce the prospect of demotivation and deskilling for many dentists and DCPs. Team-building and insightful leadership will be necessary to address cultural barriers to change, such as professional protectionism across the delineated roles.



#### **4.6.5 Inter Professional Learning (IPL) – common training (inter-intra education & training in healthcare)**

‘Common training’ was interpreted as people from different professions (i.e. medicine and pharmacy) learning together and from each other. This would be best achieved where there are core competencies cutting across professional groups, such as communication skills, history taking, common diagnostics, safeguarding, and common frameworks and approaches, such as prevention and patient safety.

It was anticipated that other review work-streams would also recognise a fundamental need to identify opportunities at undergraduate and postgraduate stages of education for IPL, given the established benefits of this approach. This should be both across undergraduate and postgraduate training and across all health and social care training routes.

Modular teaching arrangements might provide greater flexibility, enhance access and encourage career-long development of skills linked to need and interest. Greater recognition (and accreditation) of prior learning and evidenced experience could also be helpful.

#### **4.7 Skills development**

Enquiries revealed the challenge of balancing up-skilling with de-skilling, particularly when opportunities to use new skills in practice are lacking, as is often reported for nurses and therapists who acquire extended skills.

However, all dental registrants must develop skills in elderly patient care if we are to meet the needs of our ageing population. Careful consideration of governance processes is required, as otherwise simple dentistry can involve increasingly complex and challenging patients. This will require team learning and education, with effective leadership built into all layers of the multi-professional team. It is envisaged that nurses with extended duties will have a key role.

Mentoring and support from outside the practice will help early career team members to develop their clinical skills and provide pastoral care. The exploration of ‘modern’ approaches was recommended, including the use of social media platforms. Initial research uncovered some exemplar models, and further work is needed to examine existing approaches and best practice.<sup>27</sup>

Stakeholders acknowledged that ultimately commissioning will be the primary driver for skills development. While out of the scope of the review, the current contract was perceived as a major barrier to the proposed model of increased skills mix.

#### **4.8 Digital technologies**

Advancing digital technologies will present exciting and creative opportunities for the delivery of both clinical dentistry and education and training. Future models should be structured to take full advantage of these technologies to continuously improve the quality and effectiveness of dental education and training.

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<sup>27</sup> Kind T, Patel PD, Lie D, Chretien KC. Twelve tips for using social media as a medical educator. *Medical Teacher*, 2014; 36(4): 284-290

This theme is specifically linked to improving the speed of access to information, better use of skill mix, greater awareness of oral health by the public, and patient ownership, as well as preparing for emerging future applications of technological innovation e.g. artificial intelligence and augmented reality. It would encompass the development of “Apps” to support all, thereby necessitating the training of the whole team to support the process. In reflecting on the technological developments that are now common practice in dental surgeries it was acknowledged that the technological advances of the next 30 years were hard to predict. Keeping abreast of how current technology, particularly social media and digital imaging could be optimized, requires continuing attention.

Cross-sector consideration should be given to how to ensure that digital technologies are incorporated in education and training models where appropriate in a timely manner. Similarly, there should be consideration of how to fully utilise available learning resource portals for education and training with links to accredited providers to support flexibility of training, provide learner assurance and to ensure demonstrable quality of training programmes. Thought should also be given to assessing the affordability of portfolio access for all undergraduate and postgraduate dental trainees.

Social media is omniscient, including in the work domain; there is need to explore further how dental professionals can be better prepared to deal with the reality of negative (but constructive) feedback as well as allow them to use social media to build their professional careers. This requires resilience development: both in terms of addressing personal interaction with patients and digital resilience and digital literacy. This would prepare the workforce to embrace, adopt and lead digital change.

## 5. Economic models for training

The review considered the financial aspects of pre-registration and post-registration training programmes together with the implication of non-HEE and self-funded training and the HEE contribution to the Eastman Dental Institute postgraduate school. Those areas outside defined training programmes such as workforce development were also considered. Financial data in this section were obtained from HEE, dental schools and undergraduate placement providers.

The Review has highlighted the critical task of identifying and explicating all the current HEE training and education payment structures, systems and geographical distribution, including the levels of funding involved and the underlying legislation or accepted protocols for the use of the funding. Funding streams outside HEE require consideration, including apprenticeships, university and trust funding.

Further work is required to comprehensively map current structures, identify local and regional variations, and consider options for redistribution for equity across England. Findings will also inform thinking on how reformed models of education and training could be supported.

### 5.1 Pre-registration dental training

The 2015/16 Education and Training Cost Collection gathered together the costs of dental undergraduates undertaking placements within NHS trusts. The reported range of these costs for the trusts aligned to the dental schools was £2,213 to £30,177 with an average cost of £11,300.

Seven dental schools provided HEE with information on their income. The per-student income amongst those receiving undergraduate dental tariff from HEE (widely referred to as Dental Service Increment for Teaching, or DSIFT) ranged from £44,129 to £51,971 (averaging £48,050). The per-student income of schools that do not receive dental tariff ranged from £16,748 to £20,106, averaging £18,487. HEE's per-student DSIFT allocation across three dental schools ranged from £26,336 to £31,135.

Across three undergraduate dental placement providers, reported capital expenditure of DSIFT on premises running costs ranged from 15% - 33%, averaging 23%. Capital expenditure on equipment ranged from 8% - 12%, averaging 11%.

### 5.2 Post-registration dental training and development

#### 5.2.1 Dental Foundation Training

HEE spends £88.7 million on 848 dental foundation training commissions per year, amounting to an average of £104,599 per trainee. The 2012/13 factorisation exercise priced foundation training commissions at £88,345 to £102,341 – averaging £94,225.

The average foundation dental trainee in England carries out 1,919 Units of Dental Activity (UDAs) per year. HEE consulted the Business Services Authority and cross-referenced advice received with HEE's own stocktake figures in the North West, to calculate a UDA price-range of £25 - £28. Projected, this suggests an annual income range of £47,975 - £53,732 (or an average of £50,854) per foundation trainee.

### **5.2.2 Dental Core and Specialty Training**

HEE spends £32.6 million on 984 core and specialty dental training commissions per year.

The Review found that two thirds of core training posts are in Oral and Maxillofacial Surgery, and outside of London this goes up to four fifths. Preliminary findings from a review of activity in Yorkshire & the Humber show that trainees see more patients in primary care settings, therefore generating higher income, than they do in teaching hospitals.

The analysis also shows that oral surgery and orthodontic trainees generate higher incomes than paediatric and restorative trainees. This variation of specialty-specific income may be due to the location of care, or could also be due to higher NHS tariff for activities, such as administering general anaesthetic or sedation, which are performed more frequently by oral surgeons. It may also be that the number of new patients and follow-ups recorded during the observation window were not fully representative: a more long-term study would provide more robust data. These findings were also reflected in discussions with core trainees during focus groups and stakeholder events.

The Review team compared weighted population figures in England against the proportion of foundation, core and specialty trainees in each local area. The analysis found that the spread of dental foundation training posts broadly aligns with population distribution across England. However, 45% of dental specialty training posts are based in London, where only 16% of the population is located. By comparison, the proportion of specialty training places based in the North West, East Midlands, East of England, Kent, Surrey and Sussex, Thames Valley, Wessex and the South West is lower than the local population distribution. East of England is the most disadvantaged with regards to provision of specialty trainees.

Lower levels of oral health combined with higher levels of deprivation data suggests that the North of England requires a greater number of specialty training places than currently provided.

### **5.2.3 Tier 2 Qualifications**

The concept of Tier 2 training and capabilities is currently being considered by NHS England. However, preliminary investigations have revealed very few reported Tier 2 training commissions.

### **5.2.4 Local office expenditure on postgraduate dental education**

The varied composition and reported costs of local office faculty and organisational structures reflect local training needs and ways of working. Therefore, once HEE structures are consolidated, it would be appropriate to further extend our enquiries into local office costs

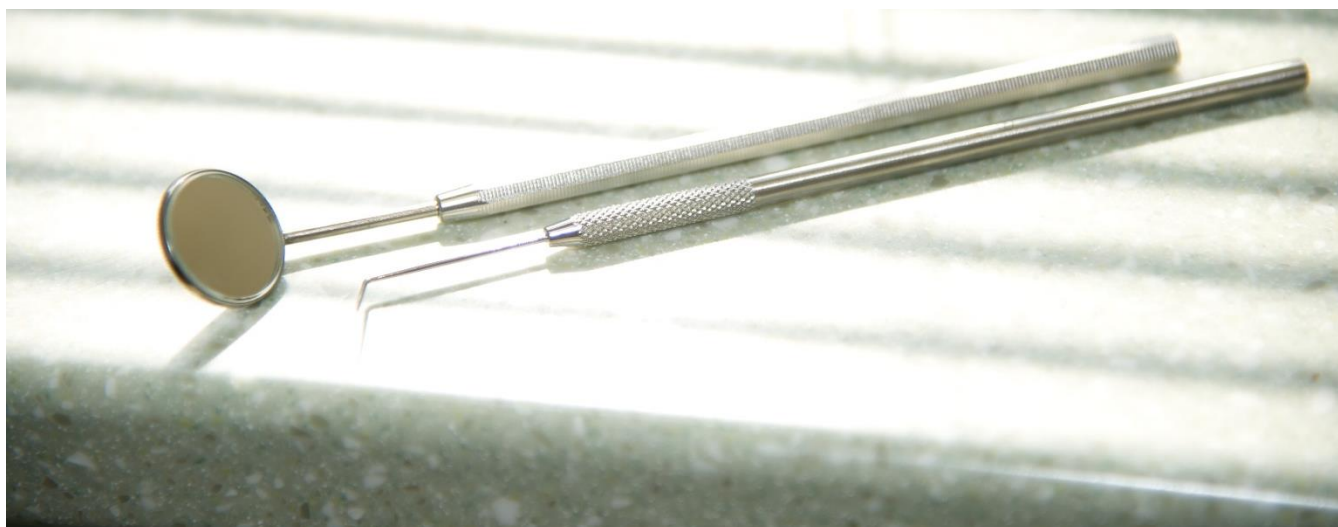
## **5.3 Pre-registration DCP training**

Work-stream investigations across HEE revealed major variation in DCP commissioning approaches, numbers, quality, and length of training. Information received on new DCP registrants from the GDC has been set against HEE commissions. The Review found that HEE reported commissions did not necessarily reflect the reality on the ground, therefore raising an issue of categorisation and costings.

## 5.4 Post-registration DCP training and development

In 2017, HEE commissioned 44 dental therapy foundation training places across four local offices. The cost per trainee ranged from £5,500 to £24,000.

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As a general principle, the Review has identified an imperative for training opportunities which can be maximised to ensure that the future dental workforce has the appropriate clinical, academic, management and leadership skills and competencies to provide high quality oral health care and rehabilitation to treat patients, and train and educate the dental workforce. It is important also to highlight the need to rigorously test proposals for feasibility in terms of quality, cost, sustainability and ease of implementation. It is imperative to consider the implications for education providers, commissioners and potential applicants to pre-and post-registration training programmes. In advancing the ADC project, HEE must be mindful of the timeframe for adjusted educational commissioning and the pace of change required. It must also take account of necessary legislative change.

Continuing stakeholder engagement is critical. Changes to the dental workforce and the ways education and training are modelled will have the most impact on Dentists and DCPs who are in the early stages of their careers. It is vital to gain the opinions and 'buy-in' from this group in the development of any model. In Phase 2 of the Review, it will be necessary to seek proactive involvement of people entering the dental workforce in the co-design of future training pathways and ways of working. There is also an imperative to identify, share and upscale current good practice.

## 6. Recommendations (with preliminary actions)

- A To approve Phase 2 of the ADC project as a 3-year programme of work in order to determine long-term efficacy of a new dental education and training structure in England.**
  - A1. Phase 2 will enable detailed stakeholder consultation; establish a robust evidence-base to inform developments across all requisite domains; and allow time for development and testing of economic models and training pilots. If approved, it is proposed that ADC Phase 2 bases its initial scheme of work on the recommended activities set out below.
- B Commission a number of research and/or evaluation studies in order to further build and refine the evidence-base for change**
  - B1. Undertake a comparative evaluation of current UK and international undergraduate and pre-registration models of clinical delivery.
    - B1.1 This will allow appraisal of ways of improving the experience of UK undergraduate education and consider the impact outside the UK of any proposed changes to education and training with regards to support the common learning concept and the transferability and recognition of skills.
    - B1.2 The evaluation should also consider how best to bridge the perceived gap between undergraduate education and DFT and increase graduates' confidence to practice independently.
  - B2. Commission a workforce study on dental workforce graduates' end destination, attrition rates, workforce mobility and model of working.
    - B2.1 This could reference the National Performers List and indemnity organisation records.
    - B2.2 The study should also capture the trajectory of the size of the DCP workforce; it should identify the number of dually qualified Dental Hygiene/Therapists who are working as Therapists, and what percentage of their work relates to the scope of practice of a Therapist.
  - B3. Undertake a dental workforce assessment to understand the numbers for a DCP skill-mix team and what funding implications there would be.
  - B4. Conduct a comparative study of the economics and effectiveness of foundation training placements across, delivery models and settings, and model the economic viability and impact of changing the proportion of training undertaken in different settings.
    - B4.1 Consider how Foundation training for dental therapists might be made universally available across England.
    - B4.2 Determine how the dental foundation budget could be used for both dental and dental care professions' foundation training, employing flexible models that accommodate local approaches and requirements.
  - B5. Undertake an accurate workforce planning exercise based on a population needs assessments to agree best geographical distribution of training posts in England and obtain further data to fully understand the total resource of training.



B5.1 Assess the implications of reallocating posts funding to primary care from secondary care setting, including the potential effects on service and implications on Oral and Maxillo-facial delivery.

B5.2 Risks, benefits and resources should all be considered.

B6. Commission the development of a resource impact template to allow education & training commissioners to baseline the costs of and income from dental training activities and forecast the impact of implementing recommendations with a view to realising efficiencies for re-investment into priority areas. This should build upon the work undertaken by the York Health Economics Consortium already commissioned in Phase 1.

### **C Commission a series of taskforce reviews in order to inform models of training**

C1. To review approved training models and funding streams for pre- and post-registration DCP training and investigate whether current commissioning arrangements are sufficiently flexible to meet future workforce, needs widening accessibility to speciality training and accrediting prior learning.

C1.1 The review should look at the major variance in training numbers for hygienists and therapists in England, and then consider a cap in numbers for hygienists and therapists or to consider increasing numbers of commissions in areas of greatest need.

C2. To consider the relevance, future need and distribution of the 13 dental specialties.

C2.1 A future strategy for existing dental specialties must include reference to current population dental needs and a National workforce stocktake.

C2.2 It should consider how more specialist training can be delivered within primary care.

C2.3 The impact on speciality training of specialty services from Tier 2 commissions by NHS England must be considered.

C3. To explore the concept and function of a Speciality in General Dentistry.

C3.1 This work should consider and build on the longitudinal foundation training model, which has been trialled with great success in parts of England.

C3.2 It should include an assessment of resources, consideration as to whether Specialty and DCT funding could be reallocated to allow training within primary care settings and the implementation of a skills escalator.

C3.3 The assessment would need to examine how these training models are structured, what are the implications to the GDC and colleges, and fully understand unintended consequences.

C4. To consider how Undergraduate Placement Fee is used to support dental training in trusts, and whether there should be Undergraduate Placement Fee allocation for first-year undergraduate training as programmes become increasingly clinical in year one.

C4.1 The taskforce should have the remit to consider whether such tariff guidance regarding expenditure on capital investment and education is being applied consistently.

- C5. A taskforce review, comprising representation from each local office, to explore why training is more attractive in some areas and not others; to share and consider the various commissioning models and identify a preferred model or approach to selecting models, which can be rolled out across England.
  - C5.1 Obtain further evidence and data to support the concept that ‘seeding’ training in remote areas of the country will result in consistent filling of recruitment gaps in training programmes.
- C6. To develop a dental academia workforce strategy in both the dental schools and primary care based on a survey of projected workforce supply of dental and DCP academics.
  - C6.1 This work should fully engage with the National Institute for Health Research (NIHR).
- C7. During the review, we heard a number of suggestions and ideas, which are not solely within HEE’s remit to develop or implementation in isolation. Acknowledging that these were commonly expressed / strongly heard views, we recommend the establishment of a cross-system working group, chaired by the CDO, to explore some of these issues in more detail, including scope of practice; building more prevention into practice, technology, and multi-professional undergraduate curricula.

## **D Develop a number of pilots to test new training models**

- D1. Fully scope and evaluate models identified as best practice, for instance the General Professional Training/Longitudinal Dental Foundation Training model currently being delivered in the North of England.
  - D1.1 Risks, benefits and resources should all be considered before establishing formal pilots.
- D2. Pilot initiatives which enable dentists and DCPs in training to have access to placements (outreach) that provide experience across primary (GDS) and secondary care settings as well as with other Primary Care professionals (pharmacists, GMPs and their teams, health visitors, district nurses, etc.).
- D3. With regards to post-registration/graduate education and training, pilot initiatives which strengthen the flexibility and appropriateness of education and training that enables Dentists and DCPs to refresh and gain specific skills linked to identified priorities for extending the Scope of Practice.
- D4. HEE (NHS Leadership Academy) to develop and pilot a self-help, team building pack, specifically designed to help dental teams assess their current level of efficient and effective working practices and support the design of development plans for further strengthening team performance.
  - D4.1 HEE to promote and so improve the identification of potential Leaders and ensure the accessibility and take up of leadership development opportunities provided by the NHS and Regional Leadership Academies by Dental Professionals linked to supporting team building and wider locality collaboration.

- D5. HEE (NHS Leadership Academy) to develop system leadership from within primary care, identifying and supporting high-calibre individuals to maximise their potential.



## 7. Conclusions

The ADC Review is part of HEE's corporate commitment to delivering the workforce for the future. Quality of clinical outcome and service for patients remains at the centre of future decisions to advance dental care. It has been an ever-present focus throughout our work over the past months.

As a general rule of thumb, given the available personnel and timeframe, the team delivering the Review has scoped next steps, including recommendations of further focused lines of enquiry rather than making concrete recommendations about, for example, definite training structures and funding streams. However, we believe that we have capitalised on the opportunity to analyse and influence, by investigating and leading debate and building consensus on the desired outcomes of future education and training models.

One of the most significant challenges was the time pressure on the Review. The work of the Review was paused in its early stages for over two months as a consequence of the calling of the 2017 General Election and related pre-election restrictions, in effect delaying the start of any meaningful consultation and engagement with stakeholders until the Autumn. The work-streams were thus only established in November 2017 and so considerable pressure to deliver by March 2018. The Review team and the individual work-streams nonetheless made strenuous effort to engage with stakeholders from across the professions and the system as a whole. In Phase 2, it will be vital to build on these efforts and to undertake more targeted engagement exercises, including with dental students and trainees who will be most affected by the recommendations of the ADC Review.

That said, from the stakeholder engagement already undertaken, the Review team found a willingness amongst young dentists especially, to engage with the process and be receptive to changes that would help improve the dental education and training structure. Trainee dentists shared innovative ideas and consulted positively throughout the process. For them change is 'a must'.

A recurring theme captured from stakeholder feedback and information gathered was the concern that many dental graduates are unable to work safely and independently when they leave dental school, which subsequently impacts on their career. Factors could include the current balance of GDC curriculum, the time spent on clinical contact and case mix of patients. This has informed a number of suggestions in this report to improve training, such as increasing the number of outreach opportunities for students and facilitating more primary care workplace experience.

It is accepted that education and teaching on the science and clinical practice of dentistry is an important part of the undergraduate curriculum. However there seems to be a disconnection between the need for robust standards of education and preparing dental students to be safe and confident with clinical skills that they will be expected to deliver across the GDC dentist Scope of Practice. This disconnection needs to be addressed in order that all stakeholders have a clear understanding of what knowledge, judgment, skills, experience and professionalism a newly qualified dentist should have when they enter the NHS Foundation Dentist workforce.

A key remit of the ADC Review was to challenge the current options for further training and development of dentists. However, in order to understand the experience of dental trainees

entering postgraduate training, the wider educational system and present model for career progression also required consideration. Examining undergraduate outcomes and the model for foundation training became increasingly pertinent in understanding the future training models required to meet patient needs and to support the future dental workforce.

Early indications are that stakeholders would like to see greater standardisation of funding and commissioning models. Most undergraduate placement providers and dental schools, for example, were open to increase transparency regarding income and expenditure for education and training. The wider Review team also encountered interest from dental schools and newly-qualified dentists in reforming funding models to reflect the training needs of the multi-professional dental team, and to mitigate the 10% reduction in dental undergraduate training commissions. There was widespread recognition that more integrated training could better prepare dental graduates for leading the dental team. Stakeholder engagement also found recognition that funding should reflect the importance of DCPs within future care models, particularly hygienists and therapists.

There is clearly a need for greater connectivity within dentistry and across with related professions, which should be reflected in pre- and post-registration training and education opportunities. The range of professionals working as DCPs could benefit greatly if their skill set was more readily recognised by the public and by dental professionals allied to a more flexible, career-long range of opportunities for further developing their skills and competencies as and when needed.

There is a great deal that could be done to optimise the current Scope of Practice in order to improve oral and general health promotion (e.g. for the 25% of children/families who are not accessing a dentist) together with releasing skills to deal more effectively with the complex needs of older people. Many of the reasons given for the perceived under use of the current Scope of Practice stem from attitudinal and cultural issues which could be targeted and improved.

Dental workforce modelling is extremely complex and needs to take account of demographic changes, health and social needs, business models, the expectations of both dental professionals and patients. Workforce modelling also needs to take account of the delivery systems in place, both now and in the future. For these reasons, we propose a flexible and evolutionary approach to workforce planning and the education and training required to develop and retain that workforce.

It is intended that the ADC Review will provide opportunities for those designing the new contract with a flexible workforce, responsive to changes in demand and able to deliver the appropriate skills, competencies and quality outputs.

Although efforts were made to gather evidence, including relevant literature and data relating, for example, to HEE commissioning, it is acknowledged that the very short timescale of this phase of the ADC Project has limited the possibility of any systematic evidence reviews to enable more detailed recommendations to be made at this stage. Formulating the best-laid foundations for Phase 2 will require, for example, a national dental workforce survey, a population dental health needs assessment, a greater understanding of NHS England commissioning and HEE resources across primary and secondary care.



The workstreams gathered mainly qualitative evidence based on stakeholder feedback, although literature to support these views has been highlighted wherever possible. It is recognised that a key task in Phase 2 will be to systematically gather together the objective evidence to inform specific individual taskforce reviews. It is hoped that this may include a programme of commissioned research to plug key gaps in the evidence-base.

There are a number of strategic enablers to which Dentistry should be connected. Of particular importance, are the 44 Sustainability & Transformation Partnerships (STP) areas across England that are deciding future health and care strategy. Informed leaders of primary care dentistry linked together as a network (for support and development) could make an important contribution to ensuring local receptiveness to many of the recommendations from the ADC project.

In the light of the need to connect education and training across with other health professions, it is important that the dental workforce and its needs are integrated within the overview of the Health & Care Workforce. It is hoped that this report will go some way to raising the profile of the Dental workforce and its pivotal role in the health of the nation.

Phase 2 of the ADC review must build upon and widen its collaborative and inclusive approach. A further strategy may be to launch a national campaign driven by high profile ambassadors in order to raise awareness amongst the general public of the importance of dental health and the links between oral health and general health and well-being. There should be a concerted effort to educate the public on the dental team and on new technologies. Such a campaign, combined with continuing stakeholder engagement and joint-working with other agencies, will be essential to achieve the ADC recommendations.





## Glossary of Abbreviations and Initialisations

<b>ACFs</b>	Academic Clinical Fellowships
<b>BDA</b>	British Dental Association
<b>CCST</b>	Certificate of Completion of Speciality Training
<b>CDO</b>	Chief Dental Officer
<b>CDT</b>	Clinical Dental Technician
<b>CLs</b>	Clinical Lectureships
<b>COPDEND</b>	The Committee of Postgraduate Deans and Directors
<b>DCP</b>	Dental Care Professional
<b>DCT</b>	Dental Core Training
<b>DFT</b>	Dental Foundation Training
<b>DRF</b>	Doctoral Research Fellowship
<b>DSIFT</b>	Dental Service Increment for Teaching
<b>DST</b>	Dental Specialty Training
<b>EEA</b>	European Economic Area
<b>EU</b>	European Union
<b>GCP</b>	Good Clinical Practice
<b>GDC</b>	General Dental Council
<b>GDP</b>	General Dental Practitioners
<b>GDS</b>	General Dental Services
<b>GPT</b>	General Professional Training
<b>HEE</b>	Health Education England
<b>HEI</b>	Higher Education Institutions
<b>IPL</b>	Inter Professional Learning
<b>MOOC</b>	Massive Open Online Courses
<b>NHS</b>	National Health Service
<b>NIHR</b>	National Institute for Health Research
<b>OCDO</b>	Office of the Chief Dental Officer
<b>ORE</b>	Overseas Registration Examination
<b>PLVE</b>	Performers List Validation by Experience
<b>SHO</b>	Senior House Officer
<b>STP</b>	Sustainability & Transformation Partnerships
<b>UDA</b>	Units of Dental Activity

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## Appendices

Appendix 1 Project management and stakeholder engagement

Appendix 2 Literature search output

## Appendix 1 – Project management and stakeholder engagement

### Project Management

Name	Title	Role / Expertise
<b>HEE Assurance Board</b>		
Nicholas Taylor	Chair of the Health Education England Dental Deans	Programme Lead / Chair
Sara Hurley	Chief Dental Officer for England	Vice-Chair
Andrew Matthewman	Senior Education and Training Policy Manager, HEE	
Simon Gregory	Director of Education & Quality for Midlands & East, HEE	
Patrick Mitchell	Regional Director (HEE South)	
<b>ADC Project Team</b>		
Nicholas Taylor	Chair of the Health Education England Dental Deans	Programme Lead; Chair
Steven Agius	Associate (Research), Edge Hill University	Report compilation/editing
Sarah Bain	Director for DCP Training, University Hospitals Bristol	Clinical Expert
Lucy Buckley	Project Officer, HEE	Project support
Steven Clements	Foundation Training Director, Training Programme Director and General Dental Practitioner, West Midlands	Clinical expert
Emily Hall	Policy Officer, HEE	Policy Officer
Donna Hough	North West Head of Dental Education and Workforce Commissioning, HEE	Programme Manager
Suzanne James	COPDEND UK Secretariat Manager, HEE	Secretariat
Jane Luker	Postgraduate Dental Dean	Clinical Expert - specialty Vice Chair
Andrew Matthewman	Senior Education and Training Policy Manager, HEE	Policy Manager
Harjinder Purewal	Dental Workforce Manager and Project Manager for National DCT recruitment	Programme Manager
Ian Redfearn	General Dental Practitioner	Clinical Expert
Simon Wright	Policy Support Officer, HEE	Policy support

Work-stream Leads following First Stakeholder event		
Peter Briggs	Interim HEE Dental Dean HEE London & South East	Post-Foundation Training & Development
John Darby	HEE Dental Dean Thames Valley & Wessex	Building on the Scope of Practice - Future Dental Team
Andrew Dickenson	HEE Dental Dean Midlands & East	Short Term Adjustments to Dental Education and Training
Malcolm Smith	HEE Dental Dean North East	Dental Training Pathways
James Spencer	HEE Dental Dean Yorkshire & Humber	Economic Models for Training

## Stakeholder engagement

A wide range of organisations and institutions were involved in the Review, who are detailed below. In addition, a number of people contributed in an individual capacity including trainees, Dental Care Practitioners and patient representatives.

### Organisations / Institutions in attendance to First Stakeholder Event on 29<sup>th</sup> September 2017

Association Dental Hospitals

Association for Dental Education in Europe

Association of Basic Science Teachers in Dentistry

Birmingham Community Healthcare

British Association for the Study of Community Dentistry

British Association of Dental Nurses

British Association of Dental Therapists

British Dental Association

British Orthodontics Society



British Society for Disability and Oral Health  
British Society of Dental Hygiene and Therapy  
British Society Paediatric Dentistry  
Care Quality Commission  
Dental Defence Union  
Dental Schools Council  
Edge Hill University  
Faculty of Dental Surgery, RCS Edinburgh  
Faculty of General Dental Practice  
General Dental Council  
Kings College London  
Local Dental Network Northumberland  
Local Dental Network Shropshire and Staffordshire  
Local Dental Network Yorkshire and the Humber  
NHS Business Authority Services  
NHS Education for Scotland  
NHS England  
North Mersey Informatics Service  
Northern Ireland Medical & Dental Training Agency  
Office for the Chief Dental Officer (England)  
Office for the Chief Dental Officer (Scotland)  
Public Health England  
Royal College of Surgeons  
School of Dental Hygiene and Therapy, Birmingham  
School of Dental Hygiene and Therapy, Leeds  
School of Dentistry University of Central Lancashire  
Society of British Dental Nurses

University of Chester

University of Essex

University of Huddersfield

University of Liverpool

Wales Deanery

**Organisations / Institutions in attendance to Second Stakeholder Event on 20<sup>th</sup> February 2018**

Association of Basic Science Teachers in Dentistry

British Association for Hygienists and Therapists

British Association for the Study of Community Dentistry

British Association of Dental Therapists

British Dental Association

British Orthodontics Society

British Society for Disability and Oral Health

Dental Schools Council

DPH StR Group

Edge Hill University

Faculty of Dental Surgeons

Faculty of General Dental Practice

General Dental Council

Kings College London

Manchester Foundation Trust

NHS Business Authority Services

NHS Education for Scotland

NHS Employers

NHS England

Office for the Chief Dental Officer (England)

Public Health England

Queen Mary University of London

Royal College of Physicians and Surgeons of Glasgow

Royal College of Surgeons

School of Dental Hygiene and Therapy, Birmingham

School of Dentistry University of Central Lancashire

Society of British Dental Nurses

UCL Eastman

University of Chester

University of Essex

University of Kent

York Health Economic Consortium

## Appendix 2 – Literature search output

A search of the existing literature on education and training in Dentistry has been undertaken as part of the first phase of the ADC Review. Inevitably, the very short timescale of this phase of the Review limited the possibility of any systematic evidence synthesis. This appendix presents a list of key systematic reviews, institutional publications and original research of relevance to the Review.

A key task in Phase 2 will be to gather together the objective evidence to inform specific work-streams. Ideally this should include a programme of commissioned systematic literature reviews and other research to plug key gaps in the evidence-base.

The preliminary literature search was based on the following protocol:

Date range used (5 years, 10 years): 2012-2017  
Limits used (gender, article/study type, etc.): none specified  
Search terms and notes: - "dental workforce"; "dental workforce OR team AND [individual roles]"; "dental team"; "dental workforce AND CPD"; "dental workforce AND education". Citation tracking in Google Scholar and PubMed of key recent articles.

Resources used (provided by HEE Library & Knowledge Services):					
Amed		Anatomy TV		BNI	
Books		CINAHL		Clinical Key*	
Clinical Skills		Embase		Health Business Elite	
HMIC	x	Medline	x	NICE Evidence	x
PsychInfo		Royal Marsden Online		UpToDate	
Resources used (freely available):					
Cochrane	x	Google	x	TRIP Database	x
International Guidelines		Google Scholar	x	PubMed	x
Other: HEE; NHS England; NHS Education for Scotland; NHS Digital; NHS Wales; General Dental Council; American Dental Education Association					

### *A. Systematic Reviews*

Brocklehurst, P et al. The effect of different methods of remuneration on the behaviour of primary care dentists. (2013) Cochrane Database of Systematic Reviews

Dyer, T et al. Dental auxiliaries for dental care traditionally provided by dentists (2014)

Harris, R et al. Interventions for improving adults' use of primary oral health care services (2017)

Jager, R et al. Interventions for enhancing the distribution of dental professionals: a concise systematic review (2017) International Dental Journal

Phillips, E et al. Dental Therapists Evidence of Technical Competence (2013) Journal of Dental Research

### *B. Institutional Publications*

ADEA Snapshot of Dental Education 2016-2017 (2017) American Dental Education Association

Association for Dental Education in Europe: Taskforces (2017) Association for Dental Education in Europe

Review Body on Doctors' and Dentists' Remuneration Forty-Fifth Report 2017 - Executive Summary (2017). Department of Health

Quality Assurance Framework for Dental Workforce Development (2016) COPDEND UK

Annual Review of Education 2014-16 (2017) General Dental Council

Standards for Education: Standards and requirements for providers (2015) General Dental Council

Preparing for practice: Dental team learning outcomes for registration (2015 revised edition) (2015) General Dental Council

Looking Ahead: Changes to dental provision in the UK and the implications for the General Dental Council - A Policy Horizon Scanning Report (2012) General Dental Council

Securing the future workforce supply: Dental care professionals stocktake (2014)

Centre for Workforce Intelligence

Dental Workforce Education and Training Update (2015) Health Education Thames Valley

UK Dental Core Training Curriculum - Updated 08/08/2016 - SUBJECT TO FINAL APPROVAL (2016) COPDEND UK

A Reference Guide for Postgraduate Dental Specialty Training in the UK: The dental gold guide 2016 (2016) Health Education England (HEE)

Workforce Planning Guidance 2015/16 - For 2016/17 Education Commissions (2015)

Vance, G et al. Planning and developing the dental workforce of the future. A survey of the dental workforce in North East England and North Cumbria (2016) Health Education North East

NHS Dental Statistics, England: 2016-17 - Patients Seen (2017) NHS Digital

A Guide to NHS Dental Publications (2016) NHS Digital

Tilley, C. The Dental Workforce in Scotland 2016 (2016) NHS Education for Scotland

The Review Body on Doctors' & Dentists' Remuneration Review for 2017 General Medical Practitioners and General Dental Practitioners (2016) NHS England

Primary Care - Dental - Guides for Commissioning Dental Specialities and their implementation (2017) NHS England

NHS Commissioning - Primary Care - Dental - Dental policies and procedures (2017) NHS England

Policy Book for Primary Dental Services (2016) NHS England/ Medical/ Primary Care Commissioning

An Analysis of the Dental Workforce in Wales (2012) National Leadership and Innovation Agency for Healthcare

Imison, C et al. Reshaping the workforce to deliver the care patients need (2016) Nuffield Trust

Imison, C et al. Shifting the balance of care: Great expectations (2017) Nuffield Trust

Faculty of Dental Surgery: Higher Specialist Training Documents and Curricula (2009) Royal College of Surgeons (RCS)

Holistic Admissions in the Health Professions: findings from a national survey (2017)

Urban Universities for Health

### *C. Original research*

HILL, H., MACEY, R. and BROCKLEHURST, P., 2017. A Markov model assessing the impact on primary care practice revenues and patient's health when using mid-level providers, lesson learned from the United Kingdom. *Journal of Public Health Dentistry*. 77(4), pp.334-343.

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WAYLEN, A., BARNES, O., KENYON, P. and NEVILLE, P., 2017. Can motivations for studying dentistry inform us about gender and BME differences in dental academic careers? *British Dental Journal*. 222(1), pp.13-15.

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