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Current arrangements for training dentists in the UK in Primary Care Dentistry

In the UK healthcare is delivered in a variety of settings within and outwith NHS funding and governance arrangements. It is divided into primary care, secondary care, and tertiary care, with primary care being the first point of contact for people (usually provided by professionals such as GPs, dentists and pharmacists) and entry into secondary care normally only on referral (NHS Providers, 2023). Primary care dentists provide care within fully NHS funded, through mixed delivery and in fully private practice, where they are often self-employed (House of Commons, 2023). Although Primary Care Dentistry (PCD) is delivered within Community and Emergency Dental Services, most is delivered within General Dental Practice.

Following undergraduate training most dentists work in PCD for all or some of their careers, and so it is important that they are prepared for this element of their future work. Historically undergraduate dental training has been set within the secondary care environment, and the need to give undergraduates some wider experience of and in the primary care sector has been recognised (HEE, 2021) This can be done via 'outreach' placements (Lynch et al., 2010; Waterhouse et al., 2008; Smith et al., 2006) and the sector is also witnessing the value of such training being based fully within primary care such as in Peninsula Dental School in the SW of England (Tredwin et al., 2022).

Underpinning considerations for training in and for PCD include ensuring preparedness for practice within the dental practice setting; the development of capability over competence; and the recognition and delivery of national and regulatory standards, processes and obligations for the undergraduate (e.g. GDC Standards for Education, Preparing for Practice learning outcomes, Standards for the Dental Team, Annual QA Monitoring) and postgraduate (e.g. COPDEND, NHSWTE [formerly HEE] Gold and Blue Guides) arenas

Moving from competence to capability.

When assessing a learner for technical skill or a required level of knowledge well known concepts include Millers pyramid depicting competence levels from 'knows about', to 'knows how' to 'shows how' to 'does' (Miller, 1990). For knowledge assessment, Bloom's taxonomy depicts cognitive levels of learning (from remembering & understanding to applying & analysing to the highest levels of evaluating & creating) across four domains of knowledge type (from factual to conceptual to procedural to metacognitive (Krathwohl, 2002; Anderson et al, 2001). Competence is an element of an individual's skill or knowledge that is assessed in a linear way often mapped to these taxonomies, under standardised and stable conditions, of familiar problems and with predictable outcomes (Wass et al., 2021; Gardener et al., 2008). Such competence is an underlying element of capability. Capability is the integration of multiple competencies, plus additional skills and qualities, performed effectively in an ever changing context (Hanks, Neve & Gale, 2021; Neve & Hanks 2016). Capability demonstrates that an individual is being effective in performance of a role or task and doing a job in the real world. With capability as the underpinning pedagogical concept for training, learning outcomes and assessment criteria need to be all about 'doing dentistry' with associated opportunities for reflection & debrief, feedback and ongoing performance development.

Teaching, Learning and Assessment.

For effective curriculum development to achieve constructive alignment (Biggs & Tang, 2011), the mandatory GDC learning outcomes need to be blueprinted to activity specific authentic and integrated capability-based learning outcomes and assessment criteria which in turn are aligned with authentic teaching and learning activities and assessments. As training proceeds the learning

outcomes become more complex and integrated as learning spirals (Coelho & Moles, 2016) and increases in complexity relating to real world performance.

Curriculum activities may start out with simulation activities that can allow the learner to learn technical skills and about being in the clinical environment without the stress of interacting with patients (competence). Other areas of training can be built up alongside, including communication skills, professional identity formation, core scientific knowledge, for example. High fidelity simulation can enhance the move from competence to capability (Carter et al, 2020) but actual assessment of capability has to be a work-based assessment, and EPAs provide a well aligned assessment tool (Kelly et al., 2022; Ten Cate & Taylor, 2021) for a capability based curriculum in PCD. Learning activities and assessments need to include opportunities for debrief and reflection with feedback and personal development, and fewer tick box, yes/no, right/wrong elements. Being comfortable with uncertainty and not knowing is an important element of capability education, and using assessment with unpredictable and non-standardised outcomes is important. This can be an uncomfortable and complex move away from the traditional competency outcomes-based assessment tools used in the Higher Education environment today, where student complaints and appeals occur almost every time someone is not successful. However, once the outcomes and criteria have been developed appropriately for a capability based, unpredictable, ever-changing real-world context, assessment becomes more straightforward to integrate into the training.

When these three areas of teaching and learning, assessment, and assessment criteria/outcomes are aligned, we can be confident that the training is offering learners the chance to be preparing for the real world of practice in primary care.

The importance of authentic educators.

With training in primary care it is useful if feedback is gained for the learner across multiple contexts, at various times and from a diverse range of educators. Within the clinical work-based environment the clinical teachers should have insight into the world of PCD that the learners are being trained for. Learners should work alongside all members of the dental team and educators should include core theoretical and laboratory researchers and scientists, secondary care colleagues at all levels, and clinical academics. Quality Assurance (QA) of the clinical teachers so that the assessment briefs and criteria are clear and understood is vital. It is also critical that all educators need to be comfortable with using those briefs and outcomes to give a less than satisfactory grade where necessary, and provide meaningful feedback about how and what needs to change to enable successful performance next time across a variety of contexts – clinical, professional and knowledge based. Where these individual educators do not always come together or get involved in other areas of the learners' study, it is crucial to have QA and training mechanisms that capture and develop educator skills. Educational support has been shown to be important by clinical teachers and students to enable the diverse range of clinical educators to be effective and supportive for learner development (Wilson et al., 2015).

Advantages of primary care based training.

In addition to the areas discussed in this overview paper it is apparent that not all individuals will find the transfer of learning from one environment to another straightforward, e.g., simulation to clinic, secondary care to primary care. Within this capability-based approach it is therefore important that learners have access to authentic experiences in a PCD context. This will support their transition from undergraduate to postgraduate independent practice, where the majority of UK graduates enter Dental Foundation Training (DFT). Outreach placements are extremely useful where

the majority of learning is set in a secondary care specialised environment; but models such as in Peninsula where all learning is based in that setting can enhance opportunities for shared care across the dental team, interprofessional learning, understanding of the wider context of PCD and complex areas of practice such as treatment planning (Tredwin et al., 2022).

Within the UK there is a move in both undergraduate and postgraduate training to ensure our future clinicians are prepared for their PCD role (HEE, 2021). Training within the PCD environment supported by evidence based and robust education activities will facilitate that.

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