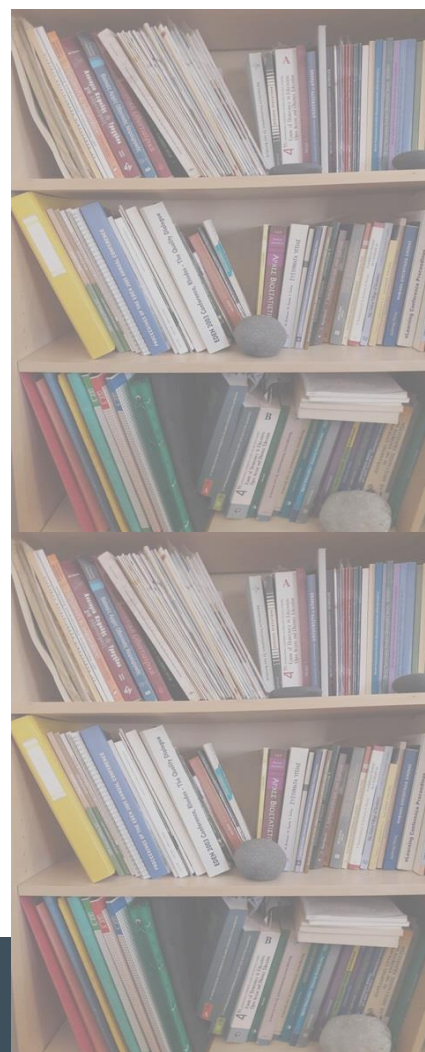


A Review of the Literature on Continuing Professional Development (CPD)

Executive Summary

Commissioned by the General Dental Council (GDC) to inform their policy proposals for CPD development

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in Europe (ADEE)



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The General Dental Council (GDC) recently introduced new requirements for continuing professional development (CPD) for dental professionals under their new “Enhanced CPD” scheme and their direction of travel in relation to CPD policy is evidenced in “*Shifting the Balance: a better, fairer system of dental regulation*” (GDC, 2017¹). In support of their aspirations, the GDC commissioned this broad review of the literature on CPD. The research team’s extensive remit was to consider literature on CPD in relation to dentists, dental care professionals (DCPs), the dental team as a whole, other healthcare professionals and non-healthcare professionals, across the UK and internationally. Evidence is summarised in relation to the GDC’s questions:

Q1. What evidence is there for the following CPD activities:

- a. Interactive activities – active learning (e.g. hands-on)
- b. Peer learning
- c. Mentoring and coaching
- d. Reflection and reflective activities

Q2. What are the areas of best practice in relation to those CPD activities (a-d above)?

Q3. Is there variation across different work settings, and is there evidence of activities working more or less effectively across these settings?

Settings may include: independent/private practices, NHS practices, corporate dental practices, hospital settings, community dentistry settings.

Q4. Is there evidence of CPD choices being driven by insight and/or intelligence:

- At an individual level – for example, as a result of an audit, a quality improvement activity, appraisal (including personal development planning), patient feedback, 360-degree feedback etc.
- At an organisational level (regulators/employers/public bodies/professional bodies/expert bodies/government) – for example, as a result of this, making recommendations or mandating certain CPD activities

Q5. What qualitative-based models exist for CPD (i.e. other than quantitative measures such as points or hours-based) and which aspects of these might be considered appropriate in developing a model for dental professionals in the UK?

Research Methodology

The processes of a systematic literature review were followed. This included the development of keywords, searching databases, selection and retrieval of relevant references and data extraction. In total, data were extracted from 184 publications. In addition, an online survey was constructed and circulated widely to relevant ‘Research Area Experts’ in an effort to identify additional publications, grey literature and website links. All work was undertaken in five months from June to October 2018.

Key Findings

Question 1: evidence of CPD activities

Interactive activities

There is a variety of ‘interactive’ activities: not only hands-on supervised practice but also simulations and virtual simulations, workshops with role play, standardized patients, OSCE-type activity, facilitated small groups, patient case studies and others. A strong case is made for the importance of basing activity on adult learning principles, recognising that adults are self-directed, bring prior experience, are goal-focused and need learning to be relevant to real life/work. Experiential learning and active learning theories (in contrast to passive learning) underpin the development of interactive activities. Key points include:

¹ GENERAL DENTAL COUNCIL. 2017. Shifting the balance. Available: <https://www.gdc-uk.org/api/files/Shifting%20the%20Balance.pdf> [Accessed 17.10.18].

- Interactive activities (for example hands-on) are a major influence on the professional's choice to undertake specific CPD courses.
- In terms of appeal and effectiveness, the relevance of the interactive activity to clinical practice, through the inclusion of real-life problems or real patients, is of primary importance.
- The reported benefits of interactive activity include enhanced confidence and strengthened clinical skills. In addition, communication skills and team-working skills are reinforced in interactive small-group activities.
- Group learning during interactive activities (e.g. simulation) strengthens clinical skills and promotes participant interaction and networking.
- Some evidence suggest that multiple learning methods and repeated interactive activities are more beneficial than isolated one-off educational activities. However, it is hard to measure outcomes on patients and/or practice. Data on outcomes are usually presented in terms of self-reported or intended changes.

e-learning

E-learning encompasses pure online learning, as well as blended learning (combination of online and face-to-face courses) and various activities with the e- prefix (e-mentoring, e-simulation, etc). There is a huge variety of e-learning delivery methods, formats and combinations of teaching models, all designed to optimise the learning process and which have been evaluated with mixed results. Authors emphasise the development of e-learning courses based on sound educational principles, i.e. adult learning principles and andragogy. Within this context, self-directed learning, self-discipline and self-assessment capabilities are prerequisites for efficient e-learning. Key aspects of e-learning include:

- The e-content should have specific attributes: be interactive, relevant and visually attractive, include self-assessment exercises and provide feedback. Relevance of content, inter-activity and feedback are also important aspects. The instructional design of the e-course aims to enhance learners' engagement with the content and promote interaction. To minimise technological problems, technology must be kept simple and inter-operable within different software.
- The importance of the inclusion of a range of experts in the development stage is stressed: academics, IT specialists, educationalists and content experts (e.g. clinical specialists).
- Positive outcomes for learners have been shown from the evaluation of blended learning. Examples show the appropriateness of this approach for interprofessional learning, specifically in community-based and hospital settings.
- Within the e-learning concept, e-mentoring and e-simulation have been implemented and evaluated, showing benefits and challenges. The benefits of e-mentoring include remote access to geographically dispersed mentors and freedom over frequency and timing of contact. The disadvantages include lack of direct observational opportunities and problems with technology. Features of effective e-simulation include: authentic situations, opportunities for interaction, reflection and feedback. E-simulation offers advantages in the development of non-technical skills, such as communication or behavioural competencies. Innovations include the use of text messaging, mobile learning and apps.
- Of particular interest is the blended learning CPD programme in periodontology, the 'Master Online Periodontology and Implant Therapy' offered by the University of Freiburg's Dental School; its first seven years of implementation were evaluated with positive results.

Peer learning

Peer learning takes a number of forms including peer review, peer support, peer feedback, peer observation, peer audit, peer discussion groups, peer interaction, peer mentoring and coaching and use of peer facilitators. Peer learning facilitates sharing of best practice and promotes high standards of practice which can be especially valuable for lone practitioners. Working together and interacting was reported to be beneficial and more likely to lead to positive changes in practice. In addition, peer learning supports reflective practice and identification of learning needs. Peer review groups can enhance interprofessional and inter-practice communication, learning and engagement, and promote mutual understanding.

Mentoring and coaching

Mentoring can take a number of forms including peer-mentoring and online mentoring. It generally takes place over a sustained time period. The modern concept of mentoring presumes that the mentor facilitates the mentee in the process of self-assessment and planning of learning activities, through interaction and feedback. Thus, mentoring promotes learning by facilitating the sharing of experience and expertise. A large portion of the literature on mentoring refers to medical practice and, in particular, to workplace-based mentoring. Important features include:

- For a beneficial mentoring experience, it is important to define roles and responsibilities of mentors and coaches and agree process and goals in advance.
- Critical thinking and reflection are inherent within mentoring; the mentoring process helps mentees to reflect on their practice and identify learning gaps, aims and career goals.
- Consideration needs to be given to the skills of the mentor or coach; one study showed that mentoring by peers did not lead to sustained improvement.
- Mentoring may be combined with other learning approaches (e.g. peer learning, simulation, case-based discussion), resulting in positive outcomes.

Reflection and reflective activities

CPD and reflective practice are inter-related: reflection can enhance the benefit of CPD, and reflective approaches to practice can be promoted by CPD. Reflective practice is prominent within the most current CPD schemes and revalidation processes (UK solicitors, UK engineers, UK pharmacists, Ontario pharmacists and others). Key points are:

- It is argued that the ability to reflect is not inherent and practitioners may need to be educated on how to reflect. This ability increases over time and with practice.
- The impact of reflection-on-practice is enhanced when it is undertaken willingly and shared with colleagues. Peer learning, group learning, mentoring and appraisal enhance the professional's ability to reflect on their practice.
- Portfolios can be used to record learning experiences and promote reflection. Portfolio-based learning is used, for example, with UK doctors and Ontario pharmacists. Questions remain as to whether current CPD systems really foster reflective practitioners. The portfolios and other reflective exercises included within the CPD schemes have to be real opportunities for practice improvement and not just a 'box to tick' exercise within the CPD scheme.

Question 2: Areas of best practice

Best practice CPD educational activities are multifaceted. They include design, development and implementation phases, as well as the evaluation of the activity and its impact on the professionals' behaviour, skills and practice. They are based on adult learning principles and may include interactive elements, reflection, feedback, mentoring or other innovative components. Best practice activities are more likely to lead to behavioural/skills changes, ultimately leading to improved patient outcomes. Combinations of different methods include case-based discussions, practical exercises, e-learning, group learning and mentor support.

An important aspect of good practice is relating the CPD course to the participants' learning needs. Courses relevant to practitioners' daily work are more likely to motivate attendance and result in practice improvements. Sustained support after the completion of the course is another best practice feature; it can be accomplished through online materials, prolonged mentorship, virtual communities or booster sessions provided after the course. An exemplar design of a CPD activity would include: needs assessment, instructional design, evidence-based content development, assessment methods, implementation and evaluation.

Impact of CPD on practice

Evaluation of CPD activities refers to both the quality of the activity itself and the impact of the activity on the learner's practice. Few studies evaluate how CPD leads to change in practice. The limited number of papers that report on real impact on patients' health include, for example, the measurement of the number of patients successfully treated after the educational intervention or the clinical data of patients or changes in prescribing patterns.

Most studies report on changes in knowledge, skills or behaviours or the 'reported' intention of the professional to change their practice. Studies using self-reported indicators to evaluate the

effect of activities are worthy, especially if evidence is gathered at three time-points: pre-event, immediately post-event and later. Long term impact evaluation is scarce, but confirms the value of sustained support in consolidating the knowledge acquired. Pre- and post- tests are frequently used, but even if the post-test confirms improved knowledge and skills, there is no certainty that these will be transferred in practice. A combination of quantitative and qualitative evaluation methods is also used to obtain a more holistic perspective of the activity's quality and impact.

Findings suggest there are benefits from CPD that uses a combination of methods and those aligned with learning needs relevant to a professional's scope of practice. Personal commitment, enthusiasm and a positive workplace environment can define the impact of learning.

Question 3: Variation across work settings

Rural settings, interprofessional learning and primary/secondary care settings

Rural practitioners have specific CPD needs related to their setting and the communities they serve, as well as to their extended scope of practice (emergency medicine, trauma). Access to CPD for isolated practitioners is an issue and innovative solutions are needed:

- Web-based, regional and educational outreach CPD activities have been identified as effective in addressing the learning needs of rural health professionals, although more evidence on their impact on practice is needed.
- Team and inter-disciplinary education has benefits: it promotes collaboration and mutual understanding and enhances peer engagement. Interprofessional CPD incorporating small-group learning using real-life clinical situations improves engagement with peers which is helpful for practitioners who feel isolated. Participants value the opportunity to interact and learn from each other, engage with peers and offer/receive support. The development of communities of practice either face-to-face or web-based can emerge through such collaborative learning activities.
- Learning in the workplace promotes team collaboration, which may enhance positive practice changes. However, evidence of improvement in patient outcomes as a result of inter-professional education is inconclusive and the effectiveness of CPD shows some variation by primary, secondary or community care setting. No evidence of variation across independent/private or NHS practices or corporate dental practices was detected in this review.

Question 4: CPD choices driven by insight and/or intelligence

On an individual level

At the individual level, CPD choices are typically informed by self-assessment of learning needs. The ability to self-assess is a skill, and professionals may need help in reflecting on their strengths and weakness and identifying learning needs.

There is consensus in the literature of the value of using a PDP or portfolio to document self-assessment of learning needs, plan CPD activity and reflect on its impact. E-portfolios have been recently used within the electronic environments of Colleges and regulators, aiming to facilitate members' activities for registration and revalidation purposes. An e-portfolio may also strengthen engagement between registrants and regulators.

Other tools to identify needs include the use of surveys and multi-source feedback. However, it is difficult to demonstrate that a portfolio of CPD activities changes practice, as it does not necessarily stimulate reflection on learning. Authors link portfolios to appraisal and revalidation processes but views are mixed: although appraisal can support reflection and the identification of CPD needs, some warn against linking it to revalidation based on arguments such as it being time-consuming, or lacking meaningful feedback and guidance.

On an organisational level

Designers of CPD programmes firstly need to identify the target audience's learning needs. CPD courses that address the learning needs of the participants are more likely to have positive effects on their practices. Regulators' and professional associations' updating of CPD systems and requirements are informed by a series of activities, involving literature reviews, gap analysis, consultation with experts, research, feedback from their membership and piloting. Areas for improvements are also informed by audits, significant event analyses, feedback from events and

observed shortfalls. CPD activities required by regulatory bodies are also governed by policy change and new regulations (either governmental- or regulatory-driven).

Question 5: Qualitative-based models

This report classified the models into two main groups: outcome-based and mixed (models which emphasise qualitative elements but which include quantitative aspects). It was sometimes difficult to assign the examples to a category and further engagement with the specific professional councils and bodies is advised. Aspects of these systems include:

- There is a clear transition from quantitative-based models to outcomes-focused ones, as the most recently updated CPD regulations are either solely or predominantly outcomes-based. This shift to outcomes-based models is in part a response to the recognised failure of quantitative based models to lead to improved performance and patient care. Features of qualitative-based models include encouraging registrant ownership, appropriate identification of CPD activities relevant to a registrant's needs, personal development planning and reflection.
- There is some evidence to suggest that a portfolio-based system is superior to a points-based system. Examples of professional groups using outcome-based models in the UK include pharmacy, engineering and solicitors; registrants are not required to amass CPD hours.
- Many systems (even those not outcomes-based) now include qualitative aspects (such as peer feedback, reflection and personal development planning). Systems of quality assurance are used to identify registrants who require greater input from peer support, mentoring and workshops.
- Some regulators have chosen to incorporate CPD within a revalidation process, others have decided against introducing revalidation. Variants of mixed models include a weighted-point system which gives greater value (more points) to interactive activity (such as peer discussion) over passive approaches (e.g. lectures, reading); and skills assessment and enhancement.

Guidance and quality management

Examples of useful supportive materials, guidance, checklists, case studies, video links, templates and apps on regulatory body websites or learning portals aim to support CPD processes and record-keeping by registrants. These easy-to-navigate websites should improve registrant-regulator engagement with continuing education. Quality assurance practices vary. Some regulators engage in the quality management of their CPD processes by requesting CPD providers to follow their code of conduct. Others do not accredit CPD providers or CPD activities.

Conclusions

Synthesising the relevant literature and outlining the approach other professionals are taking, provides the GDC with evidence which can support their development of a more qualitative approach to the delivery and monitoring of CPD for the dental workforce. This review aims to inform and strengthen GDC policy development for dental CPD which is designed to promote registrants' sense of ownership and pride in their continuing educational achievements and in turn improve engagement between the regulator and the dental workforce.

Aspects of qualitative-based models that could be included in an outcomes-focused model for dental UK professionals include: emphasis on reflection and reflective practice, active learning, portfolios, peer (and mentor) interaction and feedback; development of online, user-friendly tools, enabling registration of required evidence; a well-designed change and implementation process; reinforcement of close engagement of registrants with regulators through easily accessible communication channels; quality-assurance mechanisms embedded in the model, valuable for both regulators and registrants. If the aspiration is to create motivation across all registrants to actively pursue meaningful, relevant CPD activities, then of course the approach to CPD should promote the concept of a responsible professional, who takes pride keeping up-to-date and enhancing their clinical and professional skills and sharing their experience with others.