

IN BRIEF

- The large majority of technicians felt that continuing professional development (CPD) was relevant to dental technology.
- CPD for dental technicians raises issues relating to the restraints of cost, time and access.
- CPD will keep technicians up to date with best practice.
- A CPD framework for technicians will need to be flexible, workable and financially viable.

VERIFIABLE
CPD PAPER

Professional development for dental technicians; a pilot study

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Objective To investigate the continuing professional development (CPD) needs of dental technicians in the North of England. **Subjects** Thirty-nine commercial laboratories with postal addresses in the North of England and 32 dental technicians working within NHS hospitals, community dental laboratories and a university dental school. **Design** Structured questionnaires, semi-structured interviews and focus groups. **Results** A 44% response rate was achieved following two mailings to commercial laboratories. A 91% response rate was achieved from technicians working within the NHS sector and university dental school. Those who responded were in overall agreement about the proposed introduction of a CPD policy for dental technicians. A minority expressed concerns regarding the constraints of cost, time and access. **Conclusion** This study highlighted a number of potential problems regarding the introduction of a CPD policy for dental technicians. To work it would need to meet the needs of the technician and the employer. It would also need to be flexible, practical and financially viable.

INTRODUCTION

In a changing, increasingly complex profession, and with rapid technological advances, the need for lifelong learning for dental technicians is clearly desirable. Currently the UK body of Dental Care Professionals (DCPs) is facing one of the most far reaching changes in its history with the expansion of registration by the General Dental Council (GDC). According to the GDC,¹ registration will result in a guaranteed standard of training received by all members of the dental team that will increase protection for the public and help them to feel confident in all members of the

dental profession. It will also meet a desire by members of the dental team to gain proper recognition of their professional status and responsibility. Following registration, dental technicians together with other DCP groups will have their titles protected based upon their qualifications and experience. The title 'dental technician' will be reserved for those registered on the basis of holding a recognised qualification or who have relevant validated experience.

Registration brings privileges, but also responsibilities. One such is the requirement to participate in a programme of CPD.² All DCPs on the register will be required to undertake a minimum number of hours of professional development. Specifically this would involve an individual being seen to participate in a framework of learning and development contributing to their effectiveness as a professional.³ This would mean keeping skills and knowledge up to date in a verifiable way. The results of such legislation

may be regarded by some as excessively bureaucratic. Rather than treating it as an opportunity for improvement, some may perceive it as either a threat or a chore. This will make post legislative changes difficult to implement, and may well become an opportunity lost.

Using self-complete questionnaires, semi-structured interviews and focus groups, this study investigated the implications and constraints likely to arise from legislation requiring registered technicians to keep up to date with best practice. Data were gathered from dental technicians working in commercial, dental and general hospital laboratories and community health authority laboratories in the North of England.

METHODS

A postal questionnaire was designed⁴ to examine opinion of CPD and how it would be best delivered. The statements and questions used in the questionnaire are given in Table 1. The survey covered

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Table 1 Questions used to examine attitude to CPD and delivery

Attitudes to CPD	Delivery of CPD
1. CPD is the systematic maintenance, improvement and broadening of skills	1) How do you keep in touch with changes in working practice?
2. CPD can be valuable in the development of personal qualities necessary to working as a dental technician	2) Would you be prepared to record your CPD each year?
3. CPD involves planning	3) Which of the following would be most important to you?
4. CPD is only partly about keeping up to date; it also helps to improve best practice	4) If, as part of CPD, training becomes available, which of the following delivery options would be most appropriate for you?
5. CPD should occur throughout our working life	5) Would you be interested in computer assisted learning (CAL) packages?
6. CPD is relevant within dental technology	6) Would you be interested in distance learning?
	7) Who do you think should be responsible for meeting the costs of CPD training?
	8) How far would you be prepared to travel for a one-day training course?
	9) How much would you be prepared to pay for a one-day training course?
	10) Subject areas – (Please circle all which you might be interested in)

Table 2 Responses to statements about the nature and relevance of CPD from technicians working in both commercial and NHS/university laboratories

	Disagree/Disagree Strongly		No Thoughts		Agree/Agree Strongly	
	Commercial	NHS/UNI	Commercial	NHS/UNI	Commercial	NHS/UNI
CPD is the systematic maintenance, improvement and broadening of skills	3	0	0	4	14	23
CPD can be valuable in the development of personal qualities necessary to working as a dental technician	3	4	1	3	13	22
CPD involves planning	1	0	5	4	11	22
CPD is only partly about keeping up to date, it also helps to improve best practice	3	0	0	2	14	23
CPD should occur throughout our working life	1	7	0	0	9	23
CPD is relevant within dental technology	5	0	0	1	12	21

an area from Berwick in the North to Jar-row in the South and Carlisle in the West. The study included dental technicians working in Newcastle upon Tyne Dental Hospital, Newcastle University Dental School, Cumberland Royal Infirmary Carlisle, Newcastle General Hospital and three community health authority laboratories as well as commercial dental laboratories currently registered

with the Dental Laboratory Association (DLA) in these areas and those advertising in the Newcastle upon Tyne Yellow Pages 2005/06. An accompanying letter advised all recipients about the purpose of the research and how to complete and return the questionnaire. The letter also encouraged recipients to photocopy the questionnaire for colleagues. Provision was also made for those

willing to discuss matters further to leave a contact address.

Semi-structured interviews⁵ were planned for respondents who had indicated a willingness to discuss matters arising from the questionnaire. To ensure validity and reliability⁶ the questionnaire and the semi-structured interview questions were piloted with colleagues working in a commercial dental laboratory out of the region before being sent to those involved in the survey. Two focus groups,⁷ each consisting of four NHS employed technicians and four commercial laboratory technicians, were arranged within one week following the semi-structured interviews. Fewer than six participants was thought an insufficient number for a stimulating dialogue, and more than 12 too many for all the participants to express their points of view.⁸ An observer was also present to record verbatim the participants' responses. Triangulation⁹ was the methodology used in the analysis of the data.

RESULTS

Questionnaire

Following two separate mailings, 46 of 71 questionnaires were returned to give an overall response rate of 65%. Within this overall response, 17 of 39 questionnaires were returned by commercial dental laboratories (44% response) two of which came from technicians working within the same laboratory. Twenty-nine of the 32 questionnaires sent to dental technicians working within the NHS/University were returned (91% response).

The majority of technicians kept up to date with changing practice by reading journals, such as the *Dental Technician* (n = 34). Other methods were through contact with the Dental Laboratories Association (DLA), and the Dental Technicians Association (DTA). Universities and Colleges were also referred to along with conferences and exhibitions. Use of the internet and dialogue with colleagues were also mentioned.

Most technicians were prepared to record their CPD activity each year (n = 29). However, willingness to do so was not as strong amongst those employed in commercial laboratories (n = 12 of 17 responses) as it was for NHS/University employed technicians who all answered yes. Table 2 gives combined

responses to statements about the nature and relevance of CPD. Although there was strong agreement by all with the first four statements, the final two statements showed a difference of opinion with those employed in commercial laboratories less in agreement that CPD should occur throughout their working life, and that CPD was relevant within dental technology. Responses regarding the timing of delivery and costs of CPD are given in Table 3. All day was the preferred choice for those working within the NHS/University whereas those working within the commercial sector showed a greater preference for evening attendance. There was also a difference of opinion as to who should meet the costs of such training. Those working in commercial laboratories felt it was up to the individual whereas those in the NHS/University felt it was the responsibility of the employer. Four respondents suggested that all funding of training related to CPD should be the responsibility of the Government or the GDC.

When asked how far they would be prepared to travel for a one day training course, 23 replied local only, 20 any distance. Three did not respond. There was a tendency for commercially employed technicians to prefer more local provision. With regard to costs the majority (n = 22) were prepared to pay up to £100 for a one day course, eight between £100 and £150 and only four more than £150. Six respondents indicated they would not be prepared to pay anything. Six respondents did not reply to the question.

Asked whether computer assisted learning (CAL) packages would be of interest, 30 replied yes, 14 replied no and two did not respond to the question. Twenty-four respondents said they would be interested in distance learning packages, 20 indicated they would not, two did not respond to the question. Responses to the most popular type of CPD topic are shown in Table 4. Respondents were asked to tick all those areas of interest from a given list. From a given choice implantology was the most popular; (n = 32) followed by precision attachments (n = 27). Other areas of interest not listed were milling techniques, injection moulding systems, CAD/CAM Systems, materials science and maxillofacial techniques.

Table 3 Responses to delivery time and costs of CPD

		NHS/UNI	COMMERCIAL	TOTAL
Time	Morning	11	4	15
	Afternoon	5	4	9
	Evening	2	7	9
	All day	16	7	23
	Total	34	22	
Costs	Individual	0	5	5
	Employee	25	5	30
	Both	4	3	7
	Other	0	4	4
	Total	29	17	

Table 4 Responses to the most popular type of CPD topic

	NHS/UNI	COMMERCIAL	TOTAL
Implantology	23	9	32
Precision Attachments	18	8	26
Fixed/Removable Appliances	15	5	20
Occlusion	11	6	17
Quality Control	12	3	15
Sleep Apnoea Devices	9	6	15
Functional Appliances	10	4	14
Mouthguard Fabrication	9	5	14
Porcelain Techniques	9	4	13
Articulators	8	4	12
Shade taking	7	5	12
Obturation	10	1	11
No Response	0	2	2
TOTAL	141	62	203

Semi-structured interviews and focus groups

The questionnaire allowed those who would be prepared to discuss matters arising to leave a contact name and telephone number. Out of a total of 46 questionnaires returned, 24 technicians said they would be willing to discuss matters further. Ten of these technicians worked in commercial dental laboratories, 12 worked in the NHS sector, two in a university dental school. Semi-structured telephone interviews were held with those technicians working in commercial dental laboratories and in other NHS establishments other than Newcastle

Dental Hospital and Newcastle University Dental School where all interviews were carried out face-to-face. A total of 24 interviews were conducted.

One week after the interviews two focus groups were arranged each comprising four NHS employed technicians and four commercial laboratory technicians. Using both axial and lateral coding^{10,11} the data from the interviews and focus groups were analysed and integrated within a framework of thematic headings (Table 5). The first theme to emerge was economics; this raised the question of finance and time and who would pay for training courses. Some

Table 5 Emerging themes from post questionnaire interviews and focus groups

Themes	Major Categories	Minor Categories
1. Economics	Finance and time	Time allocation Cost to lab Cost to individual Staffing implications
2. Administration	Beauracracy	Pressure of work Additional work Documentation
3. GDC	Support	Courses Recording CPD Funding Cascade Training Enforcement
4. Motivation	Professional status	Acquisition of new skills Training and development Best practice Teamwork Patient satisfaction

commercial laboratory owners voiced concerns about the difficulties that were bound to arise when employees were away from work, and the cost implications that came with this. One commercial laboratory owner complained that sending all staff on courses would be *'a financial burden on the business'* (ID lab 01). And another *'I have 25 employees; I cannot justify them being away from the bench'* (ID lab 02).

Others who were in overall agreement with the idea of professional development expressed similar concerns. The new contractual arrangements for dentists due to be implemented in April 2006 also raised concerns. Many laboratory owners expressed anxieties over whether this would have any effect on their laboratory workload: *'I have concerns over whether I will see a down turn in the amount of work coming through the laboratory ... I worry what effect the new dentists' contracts will have on my business'* (ID lab 03).

Administration was another major concern, with the creation of too much paper work an *'unwelcome pressure for the individual'*. One respondent thought it *'an unnecessary burden and chore'* (ID lab 03), while another felt it would *'create more work and pressure'* (ID lab 04). Many technicians felt that they were already involved in their own professional development, albeit in an informal way, by reading journals and attending courses. One said, *'I have to read up on the latest technique to keep-up-to-date with my clients' requests'* (ID lab 05).

Others saw the legislative changes simply as a money-spinner for the university dental schools and the General Dental Council itself. A number of respondents felt that if the GDC was to invoke compulsory CPD, it should organise the courses and provide the necessary funding. One respondent felt that the *'provision of free courses would encourage participation'* (ID lab 06). Some respondents wanted to see the GDC produce an official logbook. One suggested that the GDC produce *'a handbook similar to the one dentists use'* (ID lab 07). A useful idea came from a member of one of the focus groups who suggested *'an online database'* enabling registrants to *'record their evidence online'* (ID lab 08).

Cascade training was another issue. This raised the question of whether the GDC would be prepared to take this type of training on board. One respondent queried whether those who attended courses would be able to pass on what they had learnt to colleagues and whether or not this would be counted as verifiable. Questions were also raised about how the scheme would be enforced. One respondent saw it as a *'great idea'*, but was concerned about how the GDC would *'police it'* (ID lab 09).

Motivation was the final theme to emerge. Many felt that the introduction of CPD would be a positive step in the right direction, as indicated by the following abridged responses *'Shows that we, as qualified professionals, are capable of doing the job'* (ID lab 10). *'Only measurable way of keeping abreast of new techniques and materials'* (ID lab

11). A number of respondents suggested that their status would be improved if they were encouraged to work alongside other members of the dental team. This might raise the overall profile of dental technicians. Some abridged responses were *'More courses geared towards the dental team as a whole'* (ID lab 12) *'Introduce courses involving other members of the dental team so that technicians can work alongside dentists in order to raise the profile of our profession'* (ID lab 13). Many respondents thought CPD would help in the acquisition of new skills and help keep, *'up to date with the latest advances in technology'* (ID lab 14). However, there were those who intimated that not everyone would benefit and that it was up to the individual to take responsibility for his or her own professional development. A number of respondents felt that the quality of dental work would be raised. *'The patient would benefit as well as the profession as a whole ... should improve the quality of work provided for patients'* (ID lab 15).

DISCUSSION

This study set out to investigate the continuing professional development needs of dental technicians in the North of England. The response rate to the questionnaires sent to commercial laboratories was low, with less than half responding. It is difficult to give a clear reason for this but it may be that as the majority of dental technicians work within the commercial sector, they do not have the necessary access to NHS funds for training. In 2001/02 a UK dental laboratory survey undertaken by International Consulting Ltd (ICL)¹² indicated that laboratories spend on average 1.1% of income on training. The survey also pointed out that the main concerns facing commercial laboratories was meeting production deadlines; this together with long working hours means that professional development may be given a lower priority. This and the perception of poor career prospects may also be a determining factor.

There was agreement amongst all technicians in their responses to many of the issues concerning their attitudes to CPD and its delivery. Noticeable differences in responses between commercial employed technicians and those employed by the NHS/university revolved around issues of cost, time and access. There was

stronger disagreement to the statements that CPD should occur throughout our working life and whether it was relevant within dental technology. There was a greater responsibility placed upon the individual to meet the costs of CPD training in commercial laboratories and a greater preference for evening attendance and local siting for such training. It is possible that there was bias in the responses from commercial laboratories. Initial contact was made through the laboratory owner in most cases as there was no other simple way of directly contacting technicians employed in commercial laboratories. Although owners were encouraged to distribute the questionnaire, the number of questionnaires returned suggests that it may have been laboratory owners rather than employees who completed them. It is therefore possible that the responses to the questionnaire reflected the owners' rather than employees' views and interests. Once the register for dental technicians has been established, it will be easier to gather opinion from those technicians working in commercial laboratories as the register will enable direct access to these members.

Many of the themes to emerge in this study are not new and there is research evidence available to inform discussion in these areas. For example, a dominant theme was that of economics related to issues of finance and time. Major¹³ identified a number of barriers to CPD such as lack of time and cost. The same barriers were also identified within the health-care sector with papers such as *Clinical Governance: quality in the new NHS*¹⁴ and *Continuing Professional Development: quality in the new NHS*.¹⁵ Ross and Ibbetson¹⁶ in a recent survey into the educational needs and employment status of Scottish dental technicians found that in some instances money was deducted from the salaries of employees when they attended courses, despite the fact they had been self-funded in

the first place – clearly a disincentive to personal development.

With the introduction of statutory regulation, a framework must be developed which meets the needs of the dental technician and the employer. This framework will need to be flexible, workable and financially viable. Madden and Mitchell¹⁷ informs us that the employer's role should not be underestimated and stresses the importance of in-house training. They found that 75% of individuals' choice for the most appropriate place for CPD to be undertaken was 'in the workplace'. Bringing CPD in-house, training staff as trainers, and drawing on the individual expertise of all employees might well lead to an enhancement of individual skills, and, at the same time, benefit the employer.

Dental technicians in the future will find it necessary to keep up to date with best practice and also be responsive to changes in legislation, thus gaining maximum benefit from career and future employment opportunities. Bunning¹⁸ emphasised this by suggesting that we expect professionals to be knowledgeable and to have up to date awareness of current research and best practice.

At the time of writing, the GDC has recently produced a consultation document called 'A step towards revalidation'¹ which will reflect the changes to the dentists' CPD requirement for revalidation. The document is also aimed at the dental team as a whole and explains the development of a compulsory CPD scheme for DCPs. With the introduction of statutory registration it is hoped this document will reach as wide an audience as possible, so all DCP groups will have the opportunity to raise their concerns. Whilst the GDC will continue to develop systems and processes for the profession, it is the individual technician's responsibility to improve and develop. CPD will assist in this and prepare the dental technician for future challenges.

CONCLUSION

The study raised a number of issues related to the implementation of a CPD policy for dental technicians. Although the majority of technicians who responded were keen to pursue their professional development, issues emerged relating to the restraints of cost, time and access especially from those technicians working in commercial laboratories. This is such a crucial and developing area that further research needs to be carried out now and in the future to examine the impact of the changes.

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