

CPD ACTIVITY EVALUATION TOOLKIT FOR DENTAL EDUCATORS

This document sets out a CPD activity evaluation template which can be modified and used by dental educators to evaluate the effectiveness of CPD activities and gain participant feedback. The template consists of two sections; the first section outlines ways in which the dental educator can evaluate whether the CPD activity has been effective at increasing participants' knowledge and understanding of the subject matter. The second section seeks to gain participants' views and opinions of the CPD activity, giving them an opportunity to provide feedback about the activity.

Section 1: Participant feedback questionnaire

Participants' views on the CPD activity can be collected using a simple feedback questionnaire. This feedback questionnaire should be completed by participants without undue delay after the CPD activity has taken place. Participants are presented with a list of statements and asked to indicate the extent to which they agree with those statements using a Likert scale (e.g. from 1 to 10). In addition, participants should be given a free text section where they can note particular areas of the course they enjoyed or areas they feel could be improved. A template questionnaire which can be used and adapted by dental educators is presented in **annex 1**.

Aspects of this section of the evaluation can address the first level of Kirkpatrick's learning evaluation model; how satisfied the participants were with the course. Self reported data from the feedback questionnaire can also provide an indication of the third level of the model, which asks whether the course resulted in a change in participants' behaviour.

Data collected from this section of the evaluation can be entered into a statistical analysis package and used to inform future CPD activity.

Section 2: CPD activity assessment of participant's knowledge and understanding of the learning objectives

A multiple choice questionnaire can be used to assess participants' knowledge and understanding of the subject matter. This questionnaire is used most effectively when completed by participants both before and after they have taken part in the CPD activity. The participants' pre-course and immediate post-course responses can be compared to determine if there are any improvements in their knowledge and understanding due to the CPD activity. A suggested time table for administering the pre and post multiple choice questionnaires (MCQs) is presented in **annex 2**.

All CPD activities should have clear aims and objectives, and it is recommended that the questions in the pre and post tests are mapped to these aims and objectives. Some examples are given in **Table 1**. The same questions should be used in both the before and after questionnaire. The 'answers' to the questions should have been covered in the course material. It is suggested that participants

have five possible answers to choose from; either having to select the one true answer, or identify a false answer from a set of four correct responses.

Table 1. Example of objective mapped questions and possible answers for use in evaluating learning outcomes from an infection control (disinfection and decontamination) course

Course objective	Objective-mapped question	Possible answers (participant must choose one true answer from a possible five)
To provide an explanation of the practices and procedures for implementing effective infection control	What are the components of decontamination?	A. Cleaning, packing and storage B. Cleaning, sterilization and storage C. Cleaning, disinfection and sterilization D. Cleaning, sterilization and validation E. Disinfection, sterilization and transportation
	Prior to a treatment session the dental unit waterlines should be run for a minimum of:	A. 30 seconds B. 45 seconds C. 1 minute D. 2 minutes E. 4 minutes

The questions can be presented either as a PowerPoint presentation, or as a question sheet handed out to participants along with a separate answer sheet. A template question sheet is presented in annex 3; two example questions are presented in this template. The dental educator can replace these questions with those of their own design, specific to their CPD activity, and add more questions as necessary. At least 10 and no more than 20 questions are recommended, ideally grouped into topic areas matching different topic areas covered within the CPD activity. Annex 4 gives a template answer sheet, to be completed by participants in response to these questions. Answer options A-E are presented for each question, and participants have to circle the correct answer. Note that there are two answer grids; one for completion before the activity and one for completion after. Other information recorded on the answer sheets includes:

- The name of the CPD activity
- The date and venue of the activity
- The activity organiser

It is recommended that participants are asked to fill out a section at the top of the answer sheet giving their job role (for example, dentists, dental nurse, other), place of work (for example, private practice, state funded practice, hospital, community), and year or decade of graduation. These data can be used at the analysis stage to determine if any particular groups perform differently in the course assessment. This section of the evaluation addresses the second level in Kirkpatrick's learning evaluation model; how much 'learning' took place.

Once participants have completed the pre and post answer sheets, the data should be entered into a database or statistical package for analysis.

Statistical analysis

The data collected in this evaluation process should be collected and analysed by the dental organisation providing the training. Analysis need not take place after every CPD activity; it can be completed at regular intervals, for example every six months.

- The crude mean percentage score should be adjusted to account for guessing (see worked example). If there are five possible answers, each participant has a 1 in 5, or 20%, chance of guessing the correct answer. For a 20 question test, by chance four questions would be answered correctly if all answers were guessed. Scores can be adjusted by the following method:
 - Subtract a mark, equal to 20% of the number of test questions, from crude scores
 - Example participant scores 15/20 (75% crude percentage score): $15 - 4 = 11$
 - Divide the resulting value by 16 [20-4]
 - $11/16 = 0.6875$
 - Multiple by 100 to express as an adjusted percentage.
 - $0.6875 * 100 = 68.8\%$ adjusted percentage score
- Pre and post scores can be displayed relative to each other on a scatter plot.
- If participants supply data concerning their job role, place of work and decade of graduation, mean adjusted scores can be compared for different groups. A one-way analysis of covariance (ANCOVA) examines whether there is evidence of systematic variation between three or more groups. The advantage of this method is that it adjusts for pre score (a participant performing very well at baseline has less room for improvement). Alternatively, if only two groups are being compared, a t test can be used.
- If questions were used for different topic areas or from different sections of the activity, results from these can also be compared to assess the effectiveness of different areas of the course.
- If more than one activity of the same type is delivered, the same pre and post tests can be used and results from different activities can be compared or combined.

Issues and Challenges

- The pre and post tests could be completed anonymously and participants should be informed that their responses will not be linked back to them in any way.
- To ensure that participants' pre and post scores can be matched at the data input stage, the post answer sheet should be printed on the reverse of the pres answer sheet, or the sheets stapled together.
- An alternative is to use this pre and post assessment as a form of feedback to the participants, or a set pass mark may be required for them to pass the activity and receive credit points.
- It may be possible to ask participants to complete a third MCQ, at a set time interval after the CPD activity has taken place (e.g. six weeks). This can assess changes in participants' knowledge over time, and determine if any improvements in knowledge following the CPD activity are maintained long term.
- It may not be necessary to evaluate every CPD activity that is held. This evaluation could be used only for core CPD topic activities, or may be more suitable for some types of CPD activity than others.

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Annex 1. CPD Activity Evaluation Self Satisfaction Questionnaire

CPD Activity:

Date:

Venue:

Organiser:

Section A. Please consider each of the following statements and decide whether they reflect your views. Please score each statement from 1-10:

Statement	Strongly disagree	Strongly agree
The CPD activity has greatly improved my knowledge and understanding of the topic area	1 2 3 4 5 6 7 8 9 10	
The CPD activity has confirmed my perception of current best practice	1 2 3 4 5 6 7 8 9 10	
As a result of the CPD activity, I plan to make changes to my practice	1 2 3 4 5 6 7 8 9 10	
The learning aims and objectives for this CPD activity were appropriate	1 2 3 4 5 6 7 8 9 10	
The learning aims and objectives for this CPD activity were met	1 2 3 4 5 6 7 8 9 10	
I was given enough background information about the CPD activity in advance	1 2 3 4 5 6 7 8 9 10	
I was satisfied with the qualifications/experience of the instructor	1 2 3 4 5 6 7 8 9 10	
The venue was appropriate and conducive to learning	1 2 3 4 5 6 7 8 9 10	
The CPD activity organisation was excellent	1 2 3 4 5 6 7 8 9 10	
I would recommend this CPD activity to my colleagues	1 2 3 4 5 6 7 8 9 10	

Section B. Please answer each of the following questions:

Is there any part of the CPD activity that you felt was particularly successful?

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Is there any part of the CPD activity that you felt needed improvement? If so, how would you like to see it improved?

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Do you have any other comments or suggestions relating to this CPD activity?

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Thank you very much for completing this feedback evaluation form. Your responses are anonymous and will be used to help us improve the CPD activity.

Annex 2. Suggested time table for using the CPD activity evaluation questionnaire in a 1-day CPD course or activity.

Arrival and registration of participants.

Welcome and explanation of the evaluation process.

Participants complete pre test questionnaire:

- Participants to retain answer sheet throughout the day
- Make sure 10-15 minutes is set aside at the start and end of the activity for completion of the MCQs and feedback questionnaire, to make sure the activity does not over run.

Commence the CPD activity.

Once CPD activity is completed, participants complete post test questionnaire.

Ask participants to complete the feedback evaluation form before leaving the venue.

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Annex 3. CPD Activity Evaluation Multiple Choice Questionnaire – Question Sheet

CPD Activity:

Date:

Venue:

Organiser:

Q1 What are the components of decontamination?

- A Cleaning, packing and storage
- B Cleaning, sterilization and storage
- C Cleaning, disinfection and sterilization
- D Cleaning, sterilization and validation
- E Disinfection, sterilization and transportation

Q2 Prior to a treatment session the dental unit waterlines should be run for a minimum of:

- A 30 seconds
- B 45 seconds
- C 1 minute
- D 2 minutes
- E 4 minutes

Q3

- A
- B
- C
- D
- E

Annex 4. CPD Activity Evaluation Multiple Choice Questionnaire – Pre tests answer sheet

Section to be completed by CPD activity organiser prior to the course

CPD Activity:

Date:

Venue:

Organiser:

Section to be completed by course participant

Specialty: Dentist Dental nurse Other DCP Other

Main place of work: Private practice State funded practice Hospital Community Other

Year of graduation:

Question	Please circle correct answer				
1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E

CPD Activity Evaluation Multiple Choice Questionnaire – Post test answer sheet

Question	Please circle correct answer				
1	A	B	C	D	E
2	A	B	C	D	E
3	A	B	C	D	E
4	A	B	C	D	E
5	A	B	C	D	E
6	A	B	C	D	E
7	A	B	C	D	E
8	A	B	C	D	E
9	A	B	C	D	E
10	A	B	C	D	E

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