Evaluation of a U.K. Community-Based Clinical Teaching/Outreach Program by Former Dental Students Two and Five Years After Graduation


Abstract: Over the past few years, community-based clinical teaching/outreach teaching programs have been established in many dental schools in the United Kingdom. One such program was developed by Cardiff University at the local St. David’s Hospital in 2002. Students visit this unit throughout their dental school program—as an assistant/observer initially, but gaining a significant amount of clinical operating experience within the unit during their final year of studies. While contemporaneous feedback from current dental students at this and other programs has been positive, very little information exists on the impact of this form of training on the subsequent clinical careers and working practices of qualified dentists. In autumn 2009, a postal questionnaire was distributed to dentists who graduated from the School of Dentistry at Cardiff in 2004 (n=41) and 2007 (n=51). Fifty-eight responses were returned, for a response rate of 63 percent: 2004 (66 percent), 2007 (61 percent). Forty-seven respondents (81 percent) reported that their learning experience at the St. David’s outreach teaching program had been of significant assistance in their professional development in their subsequent clinical careers. Positive features of the program included the availability of a suitably trained dental nurse for all procedures (n=26, 45 percent), ready access to helpful/approachable teaching staff (n=24, 41 percent), and a good working atmosphere (n=23, 40 percent). Overwhelmingly, former dental students reported that the educational experiences they gained were positive and have had a beneficial effect on their subsequent clinical careers. Further development of community-based clinical teaching/outreach training as part of dental school training programs is encouraged.

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With the aim of best preparing dental school graduates for eventual careers as independent dental practitioners, it has become desirable to incorporate some amount of dental school clinical training outside the “four walls” of the traditional dental school environment. While dental schools strive to provide their students with the best learning environment possible, many modern schools suffer from substantive challenges when providing clinical training and education to prepare their graduates for subsequent careers in general dental practice. In particular, within the United Kingdom—but in commonality with other countries—many dental school buildings are now over thirty years old and in need of continual refurbishment to provide clinical training for students within state-of-the-art facilities. Furthermore, while these dental schools were originally built in what were then high population areas with significant dental treatment needs, changes in population demographics have often resulted in changes in the patterns of dental care required in attending patients. Anecdotally, such patients are often in need of restoration maintenance or replacement; however, students gain little desirable experience in the management of primary lesions of caries in such patients.

Examples of community-based clinical teaching programs around the world have demonstrated the beneficial effects of training in such an environment. This has been seen in North American locations such as the states of Kentucky, New Jersey, and Alberta and other parts of the world such as Melbourne, Australia. Within the UK, there is a history of community-based clinical teaching/
outreach teaching programs in relation to specific disciplines such as pediatric dentistry or restorative dentistry. Some dental school programs have historically included outreach teaching in salaried/government clinics; however, the patient groups and practice arrangements encountered there, while educationally valuable, are not always reflective of what will be encountered in general dental practice. Increasingly, UK dental schools have begun to develop community-based clinical teaching/outreach teaching programs, including those at Leeds, Sheffield, and our own center at Cardiff, in settings that more accurately reflect a general dental practice environment.

The Cardiff program was sited in an area of high population density with significant need of treatment for “new” dental disease (primary lesions of caries, periodontal disease, endodontic disease, etc.). This twelve-chair purpose-built unit was opened at the St. David’s Hospital in 2002. Each teaching session typically has ten dental student operators who each have a qualified dental nurse to provide assistance. To encourage further interaction amongst the dental team, there are usually three DCP students (Dental Care Professionals: usually dental hygiene or dental therapy students) operating in the same clinic simultaneously. Each session normally has a staff to student teaching ratio of 1:6. Clinical teaching is delivered by two permanent staff who are based at the unit on a full-time basis, both of whom are experienced former general dental practitioners with broad experience in dental practice prior to taking up these teaching positions. These full-time staff members are supported by visiting teachers from general practice and community settings and some staff from the School of Dentistry. To encourage continuity in student learning and consistency in teaching, an individual student normally works with the same clinical teacher throughout each individual clinical day. In contrast to the current arrangements within the School of Dentistry, record-keeping is paperless, and students gain experience with electronic dental records. During the first two years of their dental school program at Cardiff, students attend the outreach center as observers/assistants. However, during their final year of dental school training, they spend one day per week at the unit treating patients in a primary dental care setting.

The main strength of the Cardiff model of outreach training is that, in contrast to other schools where outreach schemes are limited to specific disciplines, the Cardiff model allows the student to undertake total patient care across the range of primary care dentistry, including the treatment of children, which we understand not to be the usual arrangement in other outreach teaching programs. Feedback from students and their self-reported improvement in their confidence to perform certain clinical tasks as a result of their training at this center has been very positive.

While community-based clinical teaching programs seem to address some of the perceived difficulties in contemporary dental school programs, it is important that these new programs are “fit for purpose.” No less important are the views of the students who receive this teaching. We have previously reported contemporaneous qualitative and quantitative information from students on their learning experiences prior to graduation—which, in keeping with other centers, has been very positive. But what happens when these students enter practice? Does this positive learning experience prior to graduation have an impact on the transition to and subsequent independent practice of our graduates? While a recent article has reported feedback on community-based clinical teaching from former dental students six months after graduation, very little information exists on the views of former dental students over a longer time period. Therefore, the aim of this study was to investigate the views of graduated dental students who had trained in our unit after two and five years’ experience working as independent dental practitioners.

Materials and Methods

In September 2009, a postal questionnaire was distributed to dentists who graduated from the School of Dentistry at Cardiff in 2004 (n=41) and 2007 (n=51). The questionnaire included both open and closed questions. Information sought in this questionnaire included the following:

- current practicing arrangements;
- feedback on the student experience at the St. David’s outreach training center and how well this experience prepared the respondent for independent clinical practice;
- agreement/comment on a list of likes and dislikes in relation to outreach training (this list was derived from a previous study, which recorded contemporaneous feedback from dental students during their period of training at the St. David’s outreach training center; see Table 1);
feedback on the positive attributes of the St. David's outreach training center that had prepared them especially well for their subsequent clinical career; and

- feedback on how the St. David's outreach training program could be improved.

A stamped addressed envelope was included for return of the questionnaires. Each questionnaire was tracked using a confidential code, and nonrespondents were sent a further questionnaire after six weeks. Data were entered anonymously into an electronic database. Descriptive statistics are reported.

Results

Fifty-eight responses were returned, for a response rate of 63 percent: 2004 (66 percent, n=27), 2007 (61 percent, n=31). Thirty-five respondents were female, and twenty-three were male. The current practicing arrangements and employment status of respondents are summarized in Table 2. Only one respondent (2004 group) has completed specialty training, but twenty-five respondents (43 percent) said they have completed some postqualification course that led to a formal qualification, such as M.F.D. (Member of the Faculty of Dentistry), M.F.D.S. (Member of the Faculty of Dental Surgery), or M.J.D.F. (Member of the Joint Dental Faculties), qualifications gained usually by early career stage dentists after completion of two years of general professional training. (These qualifications are gained by examination and are usually regarded as markers of quality in identifying good quality dentists and those suitable for entry into specialty training programs.)

Respondents were asked to indicate how well their learning experience at St. David's community-based clinical teaching program had prepared them for their clinical work since graduation. These responses are outlined in Table 3. All respondents indicated that the learning experience was helpful, with 81 percent (n=47) describing the learning experience as “helping a lot” with their subsequent clinical careers.

Respondents’ agreement with common likes and dislikes (listed in Table 1) are reported in Tables 4 and 5. For this group, the most commonly agreed like was related to the availability of suitable dental nursing/assistance (98 percent, n=57) (Table 4). The most commonly agreed dislikes related to the frequency of patient failure to attend scheduled appointments (41 percent, n=24) and being unable to access patients requiring specific/desired items of treatment, e.g., crowns/RPDs (34 percent, n=20) (Table 5).
Respondents were asked to comment on what they felt were the positive attributes of the training program. A representative sample of these are shown in Figure 1. One such comment reported was that the program provided “an insight into the real world as a dentist—more responsibility and experience gained.”

Respondents were asked to report on the aspects of their learning experience at the outreach center that they felt had particularly prepared them well for their subsequent clinical career. These included a growing sense of self-confidence amongst respondents (47 percent, n=27), working with a dental nurse/as part of a dental team (41 percent, n=24), confidence in treatment planning (34 percent, n=20), and time management (31 percent, n=18).

Feedback was sought from respondents on how the teaching program could be improved. A small number of replies were received to this question. These mainly centered on increasing the amount of clinical time spent in the outreach center and that students should begin operating in this center at a much earlier stage of their dental school training.

**Discussion**

The incorporation of a community-based clinical teaching program/outreach teaching is encouraged by both UK governmental and dental regulatory organizations.\(^\text{14,15}\) The government policy document *NHS Dentistry: Options for Change* recommends that future dental education should focus on the development of skills required in general dental practice/primary dental care.\(^\text{14}\) It seems reasonable that the
ideal place to develop/enhance such skills is within appropriately designed and situated community-based clinical teaching programs. While traditional models of dental education are invaluable in the early professional development of future dentists, the consolidation and molding of these clinical skills for a primary dental care environment are clearly advantageous. From an educational viewpoint, the General Dental Council's *The First Five Years* (the guidance document for dental school education in the UK) recommends that “student teaching and learning [should be increased] by extending the clinical environment into any primary care setting approved by the dental school for the purpose of undergraduate education.” Several UK dental schools now have developed outreach programs, such as the dispersed model at Sheffield (where students are dispersed across a number of carefully selected primary care dental practices) or in purpose-built units such as our own and those at Leeds and King’s College London. While there is evidence to demonstrate the success of these ventures, usually in the form of contemporaneous student feedback, our center has provided evidence to support this form of edu-
cation over what we understand to be the longest follow-up time.

Our study clearly demonstrates that the incorporation of community-based clinical teaching/outreach teaching within dental school programs is felt by previous participants to be very beneficial to the development of their clinical and professional careers. This is demonstrated by the fact that 81 percent of the sample surveyed considered their educational experience at the St. David's unit to have “helped a lot” with their subsequent clinical careers (Table 3). Traditional dental school training programs are often viewed as the completion of prescribed items of treatment under specialist supervision; however, the community-based clinical teaching approach allows the development of other important skills necessary for subsequent careers in dental practice, such as working as part of a dental team, increased clinical confidence, and time management. It is noteworthy therefore, that 98 percent of the sample considered the availability of a suitably trained dental nurse as advantageous. This is an important finding as the concept of the dental team is now well established; a team approach to oral health care provision is considered to be in the best interest of patients.16

Also, 79 percent of the respondents noted the development of their sense of increasing clinical autonomy and confidence as a result of their time within the unit (Table 4). Again this is very important in a time where the transition to independent practice and completion of vocational training can be problematic. Modern dental school programs are often accused of having been “dumbed down,” and, on occasion, vocational trainers have for a variety of reasons not considered the standard of contemporary dental school graduates to be of comparable quality to what graduates were in their time.17,18 Importantly, the development of clinical confidence and the sense of appreciation for this learning experience were demonstrated in comments from the respondents noting a “realistic approach to providing dental treatment within a dental practice setting” and “first time as a student that I felt like a real dentist” (Figure 1). Development of this self-confidence is important in facilitating transition from dental school to vocational training and subsequent independent practice. Recognition of the development of this important trait within the outreach teaching unit from now-graduated students confirms the suitability of this form of dental education.

On the negative side, former students recall the frequency of patient cancellations/failures to attend as being a negative aspect of the teaching unit (41 percent, Table 5). Such occurrences are often routine in dental learning environments and even in subsequent practice. Recent strategies have been implemented at Cardiff to reduce the frequency of patient cancellations/failures to attend. It is hoped this will have a positive impact on student access to patients and lead to improved use of the clinical time available to them. A slight concern was that the second most commonly noted dislike was students’ “being unable to access patients requiring specific/desired items of treatment, e.g., crowns/RPDs” (34 percent, n=20). This perhaps denotes a possibility that even within this teaching program students are still focussing on completing specific clinical treatments rather than focussing on the overall/holistic care of their patients. This is an important learning point for those involved in management of this part of the curriculum.

The use of a postal questionnaire in this study has many advantages in that it allows a group to be surveyed with relative ease and lower costs compared to other resource-intensive methods such as interviewing.19 However, as with all form of survey-based studies, certain factors should be considered when interpreting the results. While the response rate of 63 percent is quite reasonable for a postal questionnaire-based study,20 it should be remembered that there may have been some form of selection bias within the respondent groups in that those former students who were more enthusiastic about this form of dental education were more likely to respond. Notwithstanding this, the use of a postal questionnaire diminished the possibility of interviewer bias as respondents were able to respond to questions honestly and at their leisure without an interviewer present, thereby increasing the validity of the study.21 In this particular instance, however, the overall conformity of responses and the considerable enthusiasm for this form of learning experience are remarkable amongst the responses.

On the basis of our results, it is evident that student experiences at a community-based clinical teaching program at Cardiff has had an impact on the subsequent professional development of new dentists emerging into independent practice. This is to be welcomed and meets the needs of contemporary patient groups. Further development of outreach teaching is to be encouraged within dental school programs. Based on the success of the St. David's teaching center at Cardiff, a larger eighteen-chair unit is currently being built at Mountain Ash, a suburban
area fifteen miles away from the main population center in Cardiff city. This suburban clinic should receive its first intake of students in autumn 2011 and will effectively double the time spent by our students training at an outreach unit.

**Conclusion**

This study has reported the feedback of fifty-eight former dental students of a community-based clinical training/outreach teaching two and five years following graduation. With the benefit of hindsight and their subsequent clinical experience, the feedback from these former students is exceedingly positive. Many noted their experience at the unit as contributing to their subsequent clinical confidence and experience as working as part of a dental team. Further in-depth qualitative investigation is merited to understand how learning in this environment helps develop suitable dental teams for the delivery of quality oral health care.

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**REFERENCES**