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Outreach clinical dental education: the Portsmouth experience – a 4-year follow-up study

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Abstract

Background: The Portsmouth Dental Academy (UPDA) was opened in September 2010 and was a development from the highly successful School of Professionals Complementary to Dentistry (2004–2010). The aim of the Academy was to provide integrated team education for all dental professionals in a primary care setting. The dental students are on outreach from King's College London, and the dental care professional students are registered at the University of Portsmouth.

Objectives: To evaluate the dental students response to the residential outreach educational experience at the UPDA.

Methods: A 49-item questionnaire divided into nine domains that provided both qualitative data and quantitative data were administered at the end of the longitudinal 10-week placement, to four successive cohorts of students in 2010–2014.

Results: A 95% return rate was achieved. Students valued highly the quality of the clinical teaching. Through their experience, they felt they understood fully the role of the dentist in care planning in primary care and felt well prepared for dental foundation training. This educational success is unpinned with successful maintenance factors including a well-organised induction period and giving the students a sense of belongingness, empowerment and autonomy for their personal development as new graduates.

Conclusion: Within the limitations of the questionnaire study over the 4-year period, the students were very positive about all the aspects of this residential outreach education at the UPDA but particularly valued the immersion in clinical dentistry and the bridging from dental school to their dental foundation training.

Introduction

Outreach education is not a new concept in UK education with the first reports from Manchester in 1977 from the centres established in 1974 (1). Outreach is also widespread internationally adopting models that mimic provision of dental health care locally (2, 3). In the UK, the rationale for outreach dental education is that the majority of care is provided in the primary dental care sector of the National Health Service (55.9% of the population had received NHS dental care in a 24-month period) (4). Further, these experiences will also ease the transition of graduates into dental practice. In the UK, vocational training (dental foundation training, DFT) is

well developed immediately post-qualification (5) and usually follows outreach opportunities at the undergraduate level (6). The General Dental Council (GDC), UK, in the second edition of their document on the training of dentists, 'The First Five Years' (7), specifically recommended a period of undergraduate education in the primary care setting. Many of the learning outcomes in the more recent GDC guidance (2013) on the training of dentists, 'Preparing for Practice', concern, in particular, 'Communication' and 'Management and leadership' skills that are ideally delivered in a primary care outreach setting (8).

Dental schools have a number of different approaches to outreach training and this has been widely reported on in the

literature (9–13) either being delivered in purpose-built facilities or a dispersed model of using a number of existing practices (9). In some schools, it may be ‘discipline specific’ (10), whilst others expose their students to total patient care (13, 14). The timing of students’ participation in outreach is diverse in terms of both year at dental school and whether the experience is delivered in a block or linear fashion (15). A survey of dental schools in England and Ireland revealed that 11 schools, out of 17, are using outreach for clinical education in year 4 and 9 of the schools either solely or in year 5 of the dental programme (15). Many of the outreach programmes reported in the literature included student dental therapists, student dental hygienists and student dental nurses (15), but whether this involved close integration and interprofessional education as adopted at by the University of Portsmouth (UoP) and King’s College London Dental School (KCLDI) is not known (16).

Context

The University of Portsmouth Dental Academy (UPDA) opened an outreach centre in September 2010. The Portsmouth model is that of integrated team care with 48 dental hygiene/therapy students in their second and third years, 20 student dental nurses registered at the UoP and half the final-year students from KCLDI with 20 dental students at any one time providing care for patients. The model follows the principles of interprofessional education as defined by The Centre for the Advancement of Interprofessional Education (CAIPE): *interprofessional education occurs when two or more professions learn with, from and about each other to improve collaboration and quality of care* (17). Interprofessional education is well established in medical education in the UK (18), and dental students are often part of such educational initiatives (19). These initiatives, although forward thinking, are on a relatively small scale due to the logistic problems encountered, including timetabling across different programmes, parity of student numbers and individual professional validation of overall programmes. The importance of interprofessional dental team working, with opportunities for dental students to work and train with other dental professionals, is also a well-established aim of the GDC (20). Similarly, experience from the United States has reported limited success both in medical and dental education citing similar barriers as those discussed (21, 22).

The UPDA outreach is based on a residential model due to the distance from their base school in London (120 km). The dental students attend for 1 week in four (4 days/week) for a total of 10 weeks in their final year (23). The students complete clinical care using a live National Health Service England primary care contract (personal dental services plus contract) that has been discussed previously (24). Advanced procedures undertaken by the students include fixed and removable prosthodontics and endodontics which also count towards the schedule of completed treatment that the KCLDI students have to complete to sit their final university examinations. The intended learning outcomes (ILOs) of the educational experience for the students whilst at UPDA are listed in Table 1 and were adapted from the special report in 2011 by

the European Association for Dental Education on outreach education (25).

The students also participate in a community outreach programme which involves them going into the community to deliver projects established by UPDA. This initiative moved from being piloted in the first year to a full engagement in the subsequent years and is therefore subject to a different evaluation process.

The rationale of this research is to report on the experiences of dental students, over the first 4 years after opening of the UPDA. The conclusions from the special interest group of the Association for Dental Education in Europe (25) stated that there was no single preferred approach to outreach, so this reports on an interprofessional integrated team approach in primary care setting as a residential outreach in the UK.

Methods

The study was devised as a service evaluation (teaching audit) of outreach education at the UPDA. Four student cohorts, 80 students in each year cohort, were asked to complete a 49-item questionnaire divided into nine domains that provided both quantitative and qualitative data. The questionnaire was developed in conjunction with the ILOs (Table 1) and was modified after discussion with teachers involved with the students’ clinical education. These modifications involved simplifying the question structure and dividing the educational section into three separate domains. The order of the questionnaire was developed to reflect the order of student experiences as they progressed through their placement. The questionnaire was not piloted as the target sample was 100% of the dental students who attended the UPDA. The questionnaire was completed anonymously in their last week of attendance just prior to graduation.

- Domain 1. Support and Communication
- Domain 2. Induction Programme
- Domain 3. Course Book
- Domain 4. Your Clinical Experience
- Domain 5. Tutorials
- Domain 6. Team Experience and Integrated Care
- Domain 7. NHS Dentistry
- Domain 8. DFT Job Application Process
- Domain 9. Accommodation and Social.

The quantitative data were handled with descriptive statistics and the qualitative data (free-text responses) were analysed by one of the authors (DDR) for recurring themes that supported the findings of the numerical data. For the purpose of this paper, domains 1, 2, 3 and 9 have been grouped as (A) ‘Support of the student body during their placement’, and domains 4 and 5 have been grouped as (B) ‘The educational experience’. Domain 6 ‘Team experience’, Domain 7 ‘NHS Dentistry’ and Domain 8 ‘DFT job application process’ were subject to a separate publication (24).

Results

Of the 320 students who have attended the UPDA, all students have completed the rotation other than one student

TABLE 1. Intended learning outcomes (ILOs) of education at the University of Portsmouth Dental Academy

(1) Personal development

Aim: To encourage students' progress towards professional working, particularly DFT. To increase students' confidence in the clinical environment.

ILO: In particular, students should have:

- a Developed greater independence in decision-making.
- b An increased awareness of interactions within the dental team and between the team and other agencies.
- c Experience working as a dental student and life at a university and city outside London.
- d Presented their patients systematically including proposing holistic care plans and alternatives.
- e Where appropriate, completed courses of treatment in conjunction with the expanded dental team and evaluated both outcomes and the team's performance.
- f Summarised their learning experiences on completion of the programme and discussed them with their tutor/tutors.

(2) Professional responsibility

Aim: To encourage students to appreciate the ethical responsibility of dental professionals for the oral health and optimal clinical care for the whole community.

ILO: In particular, students should have:

- a An awareness of the changing needs and expectations of the community.
- b An awareness of the dental professions wider role within primary care.
- c An awareness of links with other services within and outwith health services.
- d An awareness of the overriding responsibility to protect and promote general health.

(3) Practice environment

Aim: To encourage students to appreciate the responsibilities and requirements of the practice environment within the primary care setting.

ILO: Specifically, students should have:

- a Gained an appreciation of the organisation of the clinical environment, including health and safety aspects.
- b Appreciated the need for time management and setting priorities with regard to the planning of patient care, particularly using the skills and knowledge of the dental team.
- c Appreciated the role of clinical governance and its application in the primary care practice environment.
- d Appreciated the importance of teamwork within the expanded dental team.
- e Educated the students in how to lead and be a resource to the dental team.
- f Experienced use of a practice-based computer-based record keeping system.
- g Gained some insight into successful business management in dental practice.

(4) Further developments of clinical skills

Aim: To consolidate awareness and develop students' skills in the provision of comprehensive oral care for a range of patient groups, including the 'hard to reach'.

ILO: In particular, students should have:

- a Developed the skills of patient management, including communication skills.
- b Developed the skills of diagnosis and holistic team care treatment planning.
- c Experienced and gained skills in team dentistry.
- d Experienced and gained skills in referral of prescribed treatment between team members.
- e Developed skills in the use of preventative dentistry techniques in the 'hard to reach' patient.
- f Further developed the skills of clinical operative dentistry in primary dental care environments.

Adapted from Smith et al. (25).

in 2010–11 due to extenuating circumstances. The overall return rate of the questionnaire was 95% (303 respondents).

Support of the student body during their placement

Domain 1. Support and Communication: In the first year of operation (2010–11) with regard to communication from UPDA, 56% students strongly agreed with the statement 'I was kept fully informed by communication from Portsmouth' rising as high as 86% in 2012–2013. Comments in this domain centred on the frequency of e-mail communication. In our initial year of activity, the students commented on overuse of e-mail,

although they recognised the positive aspects of good communication.

- Too much communication from Portsmouth: Could they be compiled into a monthly newsletter sent on the Friday before the week rotation? Then the information would be relevant and remembered.
- The communication from Portsmouth has been excellent, always kept informed of any changes.

Changes often involved altering tutorial topics to make them more relevant to the student body at the time in the year. However, in the second year, when the competing professional activities of the students' commitments were better understood, staff were able to move to a monthly e-mail with collated information as suggested by the students.

- The regular emails from UPDA were such a help – There was always clear and succinct information delivered regarding the Portsmouth rotation.

Other comments concerned the reimbursement of travel expenses from the NHS bursary travel reimbursement from central funds provided by the National Health Service for final-year dental students (NHS Bursary). This remains an ongoing issue with the forms being long and complex and a significant time delay before reimbursement, but it is outside the control of KCLDI.

- While in theory it works being paid back for travel but has left me out of pocket all year. The NHS is terribly slow and there is no money returned months after sending them receipts.

Domain 2. Induction Programme: Induction programmes are critical to the smooth running of any department or organisation. If these work well, often the participants seem to 'just accept the situation' or 'the smooth running'. However, staff have had to take an inordinate amount of time to organise these effectively and to bring the right balance with regard to the scope of the whole course that is intended to be delivered post-induction. The UPDA induction programme has developed over the last 4 years, with some activities enhanced and others reduced. As previously discussed (23), the aims of the induction programme were:

1 To familiarise the students with the different processes in place at the UPDA due to our position in primary care. This included the following:

- A working understanding of a complex contract for reimbursement for work carried out by the students in primary care with an appreciation of the key performance indicators (KPIs), expected by the local dental service provider,
- Use of practice-based electronic patient record (EPR) system,
- Patient booking systems and primary care clinical protocols to be used in the academy.

2 To break down and minimise professional and social barriers with both the dental hygiene/therapy and dental nursing students and vice versa.

3 To undertake simple housekeeping such as distribution of locker keys, clinical uniforms, security passes and registering as visiting students of the University of Portsmouth.

4 Reflective one-to-one interviews as to the student's perspective of their dental education and training development and what they still feel they need to achieve before graduation.

5 To provide some idea of the locality and the social demographics of the local population, and to help with their understanding of the demographics and social aspects of the City of Portsmouth's population.

6 A clinical skills, 'hands-on', refresher session on rotary canal preparation for endodontics.

Although the induction programme was seen as 'about right', initial adverse comments focussed around the difficulty with learning the integrated patient management and computerised EPR system with students requesting a more 'hands-on' approach to the training.

- Induction programme was useful, however, it was mostly with time and experience that I felt helped me gain confi-

dence and learn how to accommodate. It was a gradual process.

- Induction was the right amount of time but Kodak [sic EPR system [CS R4 Clinical Plus (Carestream Dental Ltd. 2011), Stevenage, UK]] training needs to be more interactive and hands on.

However, with subsequent years (2012–2014), these issues have been resolved.

- Was very helpful to have the induction week, especially regarding the Kodak training, which was a bit overwhelming at first.
- Kodak training by Dr X was very good taking us through step-by-step how to do a treatment plan – it made the transition onto clinic a lot easier.

After a review by staff, a number of developments have been initiated, in particular the endodontic session has now evolved to two sessions since 2012–2013, with a greater emphasis placed on risk assessment and informed consent during the care planning and treatment phase.

Domain 3. Course Book: Due to the residential nature of the Portsmouth rotation, the course book is much more than a traditional course book outlining the academic course, academic regulations and educational material. There are sections on the culture of the UPDA, the Halls of Residence, safe areas and less safe areas in the city and contact numbers if there are problems outside clinical hours. This has been supplemented by a student written 'A rough guide to Portsmouth'.

- Useful course book! Some information could be removed such as maps etc. because this can be found on the internet.
- Very comprehensive although perhaps more information about DFT copied into the course book.

With regard to comments about the DFT application process and assessment, this purposely is not included due to our experience to date. As the assessment process develops, information regarding it is updated continuously via the Internet by the central organisers who are outwith the control of the universities in the UK.

Domain 9. Accommodation and Social: The University of Portsmouth has always been very supportive with the provision of accommodation for the dental students, and they are fortunate to stay at a fully catered Halls of Residence overlooking Southsea Common just 5 min walk away from the UPDA. The residential aspect of the outreach rotation was not initially considered to be a major aspect of the outreach experience as conceived and planned. However, in student feedback, it is notable to see how much the students have enjoyed and thrived on the group experience. This may be an enhanced effect due to the students being at a London-based University and as such many students remain living at home and having a long, sometimes laborious, public transport commute to the Dental Institute.

- Group bonding has been enhanced since coming to Portsmouth.
- Living with your cohort of friends definitely has been one of the best factors. Loved the social aspect of 'Portsmouth Experience'.
- Halls are close. Good breakfast, dinner wasn't always great. Good places to eat nearby and nice to have the park and sea nearby.

The statements 'the residential aspect of the dental experience has been good' and the 'social aspect of the Portsmouth experience' were strongly supported with the percentage either 'strongly agreed' and 'agreed' at 85% and 94%, respectively.

The educational experience

Domain 4. Your Clinical Experience: The educational experience is a complex web of different strands as can be seen in the ILOs of outreach education in Portsmouth (Table 1). However, the thrust of the educational input is to develop the students into a 'safe beginner' (8) in the less sheltered environment of primary care, compared to the dental school where individual skills and elements of dental care are mastered. For the purposes of the results in this study, this aspect has been broken into 'clinical experience,' 'tutorials' and 'experience of integrated dental care by the team'.

The quantitative data were reflected in the positive responses to the statement 'My clinical experience has been enhanced working at the UPDA,' where 74% either 'strongly agreed' or 'agreed'. To the statement 'I now understand the roles a dentist has in primary care with regard to treatment planning' 74% 'strongly agreed'. To the statement 'The clinical supervisors have been helpful and constructive in teaching clinical dentistry', 80% 'strongly agreed'. For the statement 'Through my Portsmouth experience, I feel well prepared for qualification and DFT', 68% 'strongly agreed'.

Comments in these two domains were both positive and less positive. The positive comments centred on the student valuing the independence offered to them by their supervising clinical teachers, working with the integrated team and ability to deliver holistic care in a primary care setting. Some comments positively engaged a feeling of empowerment and a sense of belongingness.

Development as a clinician

- I have grown in confidence as a clinician, treatment planning, and providing patients with continuity of care. The staff, tutors, and nurses have been very friendly and encouraging and supportive. They knew my name for day 1. This whole experience has been my best in my 5 year degree!
- Denture learning have been invaluable as I've seen as many cases in 1 year here as overall in London in the last 3 years.
- Trust you correct amount and help you when you need. Have learnt a lot, become faster and learnt how to treatment plan effectively.

Sense of belongingness

- I feel that the staff take a much greater interest in the students and treat each of us as a colleague rather than students, giving us more confidence and self-belief in what we do.
- I get a feeling of independence in Portsmouth and I think that it is really important for transition into DFT. The staff have all been very helpful and approachable. The way the staff communicate to you is as though they are on a similar level of authority – they do not make us feel inferior.

Working in a interprofessional team

- I have been consistently treated as a colleague and an adult. Loved working with and learning with the HTS (sic Hygiene and therapy students) and feel very grateful to have learnt the Clinical R4 computer system. [sic EPR system [CS R4 Clinical Plus].
- The nurses are an asset to UPDA – never have I worked with such a dedicated and lovely group/team. I wish I could take them all into DFT with me.
- Tutors nurses receptionists were all friendly helpful and welcoming. I looked forward waking up every morning to do dentistry at the Academy.

Less positive comments centred on the difficulty of shared treatments, as it is not always possible, due to the nature of the attachment, for students to complete all necessary care for every patient. Further, the student perceived stress of this mode of delivery of care that does not necessarily easily provide the number of advanced treatments necessary for the student to be deemed ready for graduation by KCLDI. There was also a desire to have more nursing support.

- Not sure the buddy system worked very well. [sic for shared care]
- A lot of treatment planning whilst really improving our skills in the section, however, left me with less experience in actual treatment procedures and also created a lot of stress in delivering expected levels of work.
- Portsmouth has been fantastic! The only downside is that if a student is short on endodontic/crown/bridge expectations, this cannot be guaranteed at Portsmouth.
- I felt that it would have been of even more benefit if the student dental nurses could work with us a little more (though this may not be possible due to timetabling issues).

Domain 5. Tutorials: The quantitative data were interesting with the students either 'strongly agreeing' or 'agreeing' with the statements 'The tutorial topics are appropriate for outreach placement in primary care', 32% 'strongly agreed' and 55% 'agreed'; the students liked the opportunity to prepare for tutorial with 27% 'strongly agreeing' and 48% 'agreeing' with the statement 'the preparation guide allowed you to prepare for tutorials satisfactorily' (Table 2). However, the results to the questions with regard to integrated education with the dental hygiene and therapy students in the more formal setting of a tutorial, 34% were 'neutral' and an additional 34% either 'disagreed' or 'strongly disagreed' with the statement that 'the learning experience (in tutorials) could be enhanced if hygiene and therapy students attended'. Similarly, when asked the statement 'the hygiene and therapy students would benefit from attending the tutorials', 36% were 'neutral' and 19% either 'disagreed' or 'strongly disagreed' (Table 2).

Positive comments

- Tutorials were well structured and helpful. Everyone participated in discussions.
- Clinical Governance tutorials were amazing.
- Diverse range of topics, which were focused in clinical governance and risk management to prepare for DFT.

Less positive comments

- I don't think Friday afternoons after a long week is the best time.

TABLE 2. Quantitative data from domains 4 and 5 (percentage scores of the 303 respondents)

Domain 4	Strongly agree %	Agree %	Neutral %	Disagree %	Strongly disagree %
'My clinical experience has been enhanced working at the UPDA'	32	42	19	4	3
'I now understand the roles a dentist has in primary care with regards to treatment planning'	74	24	1	1	0
'The clinical supervisors have been helpful and constructive in teaching clinical dentistry'	80	17	2	1	0
'Through my Portsmouth experience I feel well prepared for qualification and DFT'	68	29	3	0	0
Domain 5					
'The tutorial topics are appropriate of the outreach placement in Primary care'	32	55	10	3	0
'The preparation guide allowed you to prepare for tutorials satisfactorily'	27	48	21	4	0
'The learning experience (in tutorials) could be enhanced if Hygiene and therapy students attended'	5	27	34	29	5
'The Hygiene and therapy students would benefit from attending the tutorials'	5	40	36	16	3

Discussion

The questionnaire was designed to include nine domains to evaluate the total outreach educational experience at the UPDA (covering educational and maintenance factors such as communication to the student body, accommodation and social elements), rather than just to test specifically whether the UPDA was meeting its expectations in the stated educational ILOs (Table 1). Further, it was necessary to write the questionnaire in a form that the students could easily relate to and would complete with enthusiasm. The questionnaire was modified by input from the clinical teachers who simplified some of the questions and suggested that the domains followed a logical sequence of how the year progressed, that is from communication through the induction course to the overall educational outcomes. However, for the purposes of detailed analysis of the achievements and challenges to date, the ILOs have been mapped onto the six domains that are reported on within this paper. Domains 1, 2, 3 and 9 of the questionnaire are considered maintenance factors. These need to be correct and well delivered to ensure that the educational experience of outreach is optimal. Clinical experience (Domain 4) was mapped on to ILOs 1a, 1d, 1f, 3f, 4a, 4b, 4e, 4f (Table 1). Tutorials (Domain 5) provide the underpinning knowledge for clinical governance, clinical audit, practice finance and team dentistry and were mapped to ILO 1b 1e 3b 3c 3d 3e 4b 4c 4d. The ILO of professional responsibility is encompassed in the community outreach programme from the UPDA and is part of the philosophy that we have embraced of 'Micro-Educational Opportunities' (26).

The tutorials are part of the package of didactic and clinical education. They have developed over the four-year period and reflect strongly the strengths of the clinical teachers available to teach certain elements of primary care away from the clinical environment. This has developed as the teachers grew in their role from being experienced general dental practitioners to experienced clinical teachers of final year dental students in an outreach setting (27). Further to that, the teaching faculty has

grown by the appointment of a specialist in endodontics and staff have been recruited to more strongly facilitate the transition of the students into DFT by employing part-time staff members who are involved with foundation training in their own general dental practice (28). The results showed that the students perceived their training to be very relevant to what they thought would be of value when in general dental practice. This probably was partly due to the topic areas, and coverage of the tutorials which were developed with significant input from both educational supervisors and DFT programme directors.

The students responded very positively to the teaching experience with understanding of the role of a primary care dentist in staged care planning and recognising the constructive teaching of the clinical teachers (80% 'strongly agreed'). The clinical teachers work hard at developing a sense of 'belongingness' in the various teams and in individuals (29). They strongly believe that this clinical practice for students allows the transition from theory to practice as the student is empowered to become more independent. Many of the learning outcomes are covered earlier in the Dental Programme at KCLDI, but their application demands the need for a deeper approach to learning to enable the scaffolding of knowledge in relation to complexity and significance. The challenge for the clinical teachers in outreach is to give students autonomy on the clinics, particularly as they get closer to graduation, but to know when to intervene without adversely impacting on student confidence and/or allowing patient safety and treatment outcomes to be compromised (27). Staff aim to empower the students to take responsibility for care planning for the whole dental team and manage the overall direction of the treatment, with the supervising dentist acting more as a trusted colleague and mentor (27, 30).

Despite the undoubted success of the UPDA in the eyes of the students and other stakeholders, there are continuing concerns that either need to be highlighted to the student body as they are unresolvable (e.g. reimbursement of travel fees) or are being organically changed. One major issue is patient distribu-

tion that has to be explained to the students and reinforced periodically. Students historically, due to the nature of assessing performance in the degree programme, were 'expectation-driven' and are used to making patient requests from defined waiting lists in a departmentalised situation. Although KCLDI wishes to significantly reduce this student-driving factor, this will take time to work through to the final-year cohort of students. Further, students are fully aware that in practice, experience is necessary in both simple and complex dental procedures. There has always been a desire and will continue to be so, for the more capable students wishing to exceed expectations to derive the most benefit from their undergraduate education. However, they have to be made aware that in primary care they see the patients not after triage or a staff-lead treatment planning process, so the nature of their dental experience is dependent upon the needs and desires of patients as they present to the student in this environment.

The students' Portsmouth outreach experience is in their final year and so they are more than just fledgling dentists, despite the GDC only recognising them at graduation as 'safe beginners' (8). As the entire clinical practice of the UPDA relies upon an integrated patient management and EPR system that is linked to a central services process (The Business Service Authority), until they have a good working knowledge of the system and some of the regulations covering NHS treatment provision, they are not able to work effectively. The students find mastering this information system in 2 days of induction demanding, and the training has become more refined and increasingly predominantly hands-on. With the introduction of an EPR system at the main university campus in London, the dental students will be more familiar with the functionality of a computerised system; however, the two systems are very disparate due to their development for different roles within the health service. Thus, it will be interesting to see whether future cohorts of students, when at UPDA, make the transition to this practice-based system more easily.

The students valued highly the clinical experience and the educational input from their clinical teachers; however, continuity of treatment could ideally be more seamless between the different student cohorts. The development of the timetables to allow more seamless integrated interprofessional education is complex due to the different levels the students are working at. The University of Portsmouth Dental Care Professional students (DCP) have significant core didactic teaching, whereas the dental students have this delivered in London. However, to enhance and embrace the interprofessional education, we have shared practice team meetings for two hours on a Tuesday morning at the start of the clinical 4 days as well as certain timetabled events such as sessions on communication, case presentations and coping with stress (both at university and in their future lives). These often have to be timetabled as extra curricula, non-compulsory activities and given over a lunch period or in the evening. Students are willing and able to take responsibility for patient care and interact well with the wider team; however, again, when the different curricula requirements of the two student bodies are analysed, they can only provide concurrent care for patients for 25 weeks in the 46-week year. Further, the dental students need to fully understand their role in routine realistic staged treatment planning with their DCP

colleagues as patients now being able to have direct access to dental hygiene and therapists in the UK (31). This will be an important part of their future roles as dentists, as they need to take control of the overall direction of the care plan. The dental students need to undertake and master the more complex treatment items and refer the other items of treatment to their DCP colleagues where management is more appropriate. This overall coordination of the care plan is complex due to the nature of the attendance of the dental students and the competing pressures from other aspects of the DCP's programme of study.

Group identity and the nature of the residential aspect of the outreach programme was not considered to be a vital component when the outreach rotation was established; however, this is not the case. The outreach experience definitely promotes a sense of 'belongingness'. Student groups adopt different names for themselves, and different weeks develop different group characteristics. This group identity and 'belongingness' is very important to the students and gives the UPDA a great vibrancy (29). This is enhanced with activities such as evening continuing professional development events for all the students in training, master classes, group photographs, team sports and social events, which mimic activities that many general dental practices adopt to enhance a positive team spirit.

Conclusion

Within the limitations of this questionnaire study over the four-year period, the students were very positive about all the aspects of outreach education at the UPDA but particularly valued the immersion in clinical dentistry and the bridging from dental school to their foundation training. They highly valued the responsibility they were afforded and the sense of 'belongingness' to the UPDA. The students also highly valued the helpful and constructive input of their general dental practitioner clinical supervisors. By the end of the placement they felt that they fully understood the roles a dentist has in primary care, having grown in confidence as a clinician and providing patients with care in an integrated dental team.

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