Professional behaviours demonstrated by undergraduate dental students using an incident reporting system

C. L. Taylor*[1] and N. J. A. Grey[2]

IN BRIEF

- Reports professional behaviours exhibited by undergraduate dental students using critical incident reporting in the UK.
- Suggests that critical incident reporting can be a valuable addition to the professionalism assessment portfolio.
- Shows that the majority of professional behaviours reported related to altruism, whereas the most common unprofessional behaviours related to a lack of conscientiousness.

EDUCATION

Critical incident reporting is widely used across healthcare and other sectors for reporting adverse events or behaviours. More recently it has been used in medical education as a means of assessing student professionalism. The aims of this study were to determine the usage of critical incident forms when reporting behaviours related to professionalism demonstrated by undergraduate dental students, and the types of behaviours exhibited. Three types of form could be awarded for highly professional (green), minor unprofessional (yellow) and serious unprofessional (red) behaviours. All forms completed over a two-year period were analysed recording the year of student, type of card and demographic of the member of staff reporting the incident. All text relating to the nature of the incident was entered into a qualitative data analysis software package and analysed thematically. In total, 583 cards were awarded, 55% green, 34% yellow and 11% red. Seventy-four percent of cards were awarded in a clinical environment, with administrative staff using them the most (29%). The overwhelming professional behaviours demonstrated related to altruism. The most common unprofessional behaviours related to a lack of conscientiousness, although a greater range of common unprofessional behaviours were reported. In conclusion, critical incidents forms were widely used for reporting both professional and unprofessional behaviours particularly in clinical environments by a range of staff. Such forms may be a valuable addition to the professionalism assessment portfolio, capturing behaviours not previously reported using traditional methods.

INTRODUCTION

Undergraduate dental training is not only concerned with acquisition of knowledge and skill, but also introducing the student to the norms and expectations of the profession. Students on such programmes are expected to adhere to the principles set out by the General Dental Council (GDC), even at an undergraduate level. The GDC stipulate what a student is expected to learn and how they must behave as an undergraduate, in addition to registering and managing qualified practitioners. In 2011, the GDC published *Preparing for practice: dental team learning outcomes for registration*.[1] This document sets out the learning outcomes that a dental care professional student must achieve in order to be eligible to be placed on the register upon graduation. The outcomes are centred around four domains; clinical, management and leadership, communication and professionalism. With regards to professionalism, this document states that 'the GDC expects professionalism to be embedded throughout dental education and training. It is essential that students recognise the importance of professionalism and are able to demonstrate the attributes of professional attitudes and behaviour at all times from the beginning of their training'.[1] Given the importance placed upon professionalism by the GDC, it is essential that educators develop effective methods to ensure that students meet the criteria to become competent, registered professionals.

The concept of professionalism has received a great deal of attention for several years both among students and registrants, particularly in the medical literature, but also in other healthcare professions.[2,3] This has prompted a significant amount of educational research into this area, especially with regards to defining professionalism. Several authors and professional bodies have defined professionalism and no consensus exists on an exact definition, reflecting its complex make up.[4–6] The GDC define professionalism as 'the knowledge, skills and attitudes/behaviours required to practise in an ethical and appropriate way, putting patients' needs first and promoting confidence in the dental team'.[1] A literature review attempting to conceptualise professionalism found 90 separate elements of professionalism reported in the literature.[7] These broadly fall into three discourses involving intrapersonal characteristics, interpersonal interactions and on a wider level the influence of society or the institution.[2] Therefore, an individual's professionalism can be related to their personality, attitude, values, traits and competence. Although it is manifested as behaviour and actions, this can be influenced on a general level by the norms and responsibilities associated with that profession. Specific interactions are also significantly influenced by the context of the situation and the relationship between and communication amongst the individuals involved. Thus the complex and multi-dimensional nature of professionalism becomes apparent.

[1]Clinical Lecturer/Hon StR in Restorative Dentistry, [2]Professor of Dental Education, University of Manchester Dental School, JR Moore Building, University of Manchester, Oxford Road, Manchester, M19 1PL
*Correspondence to: Miss Carly Taylor
Email: carly.taylor@manchester.ac.uk

Refereed Paper
Accepted 9 April 2015
DOI: 10.1038/sj.bdj.2015.386

Table 1 Professionalism descriptors used for assessment of professionalism and critical incident reporting (adapted from reference 5)

Professional domain	GDC standard	Acceptable	Cause for concern Yellow professionalism card	Unacceptable Red professionalism card
Honesty and integrity	1.3	Always honest with patients, peers, staff and in professional work (presentation, documentation, communication)	One episode of minor dishonesty not involving patients (presentation, documentation, communication).	One incident of major dishonesty. Repeated incidents of minor dishonesty. Incident of dishonesty involving patients.
Reliability and responsibility	1.5, 4.1	Reliable and conscientious	One episode of poor reliability or irresponsibility. Late on more than one occasion, fails to complete assigned tasks. Failure to exhibit conscientiousness on more than one occasion. Lets down peers in group work.	One episode of poor reliability/ irresponsibility involving patients. Endangering patient safety
Respect for patients	1.2	Consistently demonstrates respect for patient's autonomy and dignity. Maintains professional boundaries at all times. Always appropriately dressed for clinical setting.	Single demonstration of disrespect for patient's autonomy and dignity. Inappropriately dressed for clinical setting on more than one occasion.	One episode of breaching patient confidentiality or having inappropriate professional boundary with patient.
Respect for others	6.1	Shows respect for patient's relatives, other healthcare professionals and members of staff.	Single episode of showing disrespect to patient's relatives, other healthcare professionals or peers.	
Attendance and approach to learning	9.1	Full attendance, participation in seminars and other learning activities.	Poor participation in group activities. Poor attitude towards learning opportunities. Failure to improve following feedback. Disinterested, unprepared for sessions.	
Compassion and empathy	1.1, 2.1	Listens attentively and responds humanely and empathically to patient's concerns.	Little interest or empathy for patients.	
Communication and Collaboration	2.1, 2.3, 6.5	Works co-operatively and communicates effectively with patients and healthcare team members.	Poor communication with peers, staff, healthcare professionals. Disruptive in group work due to lack of collaboration.	
Self-awareness and knowledge of limitations	7.2	Recognises need for guidance and supervision, aware of appropriate boundaries. Personal beliefs do not prejudice approach to patients. Honest about errors	Limited insight into need for guidance and supervision and assessment of own capabilities. Does not acknowledge or improve following feedback and guidance relating to this.	Marked lack of insight into their level of competence, such that it endangers patient safety. Personal beliefs prejudice and affect patient care.
Altruism and advocacy	1, 1.7	Adheres to the best interests of patients and advocates for them.	Shows little interest in the needs of patients.	Significant incident which indicates personal gain over patient's best interests.
Health	1, 8.1, 9.2	Does not allow their health or condition to put patients and others at risk		Allows condition of their health to put others at risk, including patients

Assessing professionalism is as equally challenging as defining it. A plethora of methods have been developed to assess professionalism, including assessment by peers, self, staff and patients, in authentic and simulated settings in addition to written work.[8,9] Most methods, however, only focus on measuring one aspect of professionalism.[3] Most assessment methods require some sort of observation using assessors. This can further complicate assessment, as it has been demonstrated that even if an assessment tool is reliable and valid, significant variability can occur due to the assessor, with different types of assessors focussing on different attributes.[10,11] In light of this, a working party exploring the assessment of professionalism in medical education, proposed that it should be assessed longitudinally using multiple techniques, with a range of observers across different environments.[2]

One such tool which can be employed in the armoury of professionalism assessment is critical incident reporting. A critical incident involves a lapse in professional behaviour or standards, and this tool is widely used in risk management in all areas of clinical practice relating to patient safety and adverse events.[12] Such techniques, in addition to alerting staff about students' behaviours, can also be a useful learning tool for students.[13] During undergraduate training students are developing their professional identity, being introduced into a professional world with its own norms. Critical incidents can assist the student in understanding what is expected of them in their new role and potentially facilitate their professional development.

Although students are assessed on their professionalism in formal educational activities, incidents can occur outside of these, or be significant such that they require additional recording and action. Indeed these incidents may be of such significance or frequency as to raise concerns regarding the students' professionalism and their progression through the course. Critical incident reporting has the advantage of being adaptable, therefore can be used in any situation or environment. As it is used in multiple industries and professions, it does not require specialised skill to undertake, so can be carried out by anyone. Both these factors mean that such assessments can be carried out in a multitude of environments, by a range of people, fulfilling aforementioned recommendations.[2] Finally, such assessments only require completing when an incident has occurred, meaning that the administrative burden is minimised. This is advantageous when dealing with large numbers of students. As with other methods of assessing professionalism however, there is a degree of judgement involved and different

assessors may have different thresholds of what they deem acceptable behaviour.

The medical educational literature suggests that most students will exhibit professionalism lapses throughout their training.[14] Hodges *et al.*[13] used critical incidents to report unprofessional behaviour amongst undergraduate medical students. Reported unprofessional behaviours related to communication, confidentiality, self-improvement, attendance, conscientiousness and record keeping.[13]

Although parallels exist between medical and dental training, it is unclear whether comparable behaviours are exhibited by dental students. The aims of this study were to determine the usage of critical incident forms and the types of behaviours related to professionalism demonstrated by undergraduate dental students at a single institution over two consecutive years.

MATERIALS AND METHODS

The undergraduate dental programme uses a predominantly enquiry based learning (EBL) curriculum, with early clinical contact from year one. Professionalism is assessed by teaching staff in formal educational activities including patient treatment clinics, pre-clinical skills, EBL and small group teaching sessions. Professionalism critical incident forms were introduced in 2012, as it was noticed that small numbers of incidents relating to professionalism were occurring outside formal teaching sessions, and were not being recorded formally. Similarly, numerous students exhibited positive professional behaviours which were also not being recorded and recognised fully. Therefore, three different critical incident forms were introduced; red, yellow and green for serious unprofessional behaviour involving dishonesty or endangering patient safety, minor unprofessional behaviours and positive professional behaviours respectively.

Each card records the student, year and person reporting the incident, along with a brief outline of the incident and if any action is required. Such professionalism cards can be awarded by any member of staff such as administrative, nursing, clinical and academic and in any environment. Only one professionalism card can be awarded for each incident. Professionalism cards are recorded on the students' electronic file and are considered as part of the eligibility criteria to sit professional examinations, ultimately having the ability to affect student progression. Professionalism cards are reviewed by the students' head of year and discussed during one-to-one meetings which occur for every student at least twice per year, during which reflection is encouraged upon any reported events. If a student receives three yellow or one red card they must meet with their head of year with further action, possibly resulting in referral to the health and conduct committee. The person in the year who has the most green cards at graduation will receive a prize. Although critical incidents technically relate to unprofessional behaviour, the name was chosen to include professional behaviours beyond expected, as it highlights that such reporting is only carried out on an ad hoc basis as required and not necessarily for every student.

Given the reported issues of assessor variability and the complex nature of professionalism, staff training was essential when implementing the system. An online training package comprising of 15 scenarios was developed. Each hypothetical scenario was based upon previous incidents which had occurred in the school. Respondents had to choose whether to award a professionalism card and if so, which card (red, yellow or green) to award. Descriptors were developed to assist staff members in choosing the appropriate sanction and encourage consistency amongst assessors. Initially, specific examples of student behaviour which would warrant issuing of each type of card were given. The authors found however, that assessors focussed only on these behaviours and could not equate the severity of the example situation to slightly different hypothetical scenarios. A new guide was developed based on that of the American Academy of Paediatrics, which provided overarching concepts that had wider applicability (Table 1).[5] Feedback from members of staff indicated they found this more useful in assessing and managing the exhibited behaviours. Green cards are awarded if the observer feels that the student has demonstrated professional behaviour beyond that expected. This category is somewhat subjective, however the staff felt it important that students are aware that the school recognises professional students and encourages such positive behaviours, rather than just focussing on unprofessional behaviours.

The training package was mandatory and verifiable continuing professional development was awarded upon completion. In order to ensure that non-university employees had completed the training package, a face-to-face session was conducted during a mandatory clinical effectiveness session by the authors (CLT). Similar scenarios were presented with the audience having to 'vote' for their preferred course of action. Results were then discussed amongst the group in order to generate agreement on the correct course of action.

Professionalism cards awarded to all undergraduate dental students in the academic years 2012–13 and 2013–14 were reviewed. Data extraction was anonymous and included the type of card, year of the student, role of assessor and nature of the incident being recorded. All text relating to the nature of the incident was entered into a qualitative data analysis software package which was used only for data storage to facilitate analysis. Comments were analysed using thematic analysis and coded inductively, with themes emerging from data rather than using a preconceived framework. Analysis was carried out as described by Braun and Clarke.[12] All data extraction and analysis was carried out by the first author (CLT). The coding and emerging themes were discussed with other members of the research team. Frequency counts of the types of cards awarded to each year group were recorded

Table 2 The numbers of different professionalism cards awarded to each year group in each academic year

Year of student	Type of card	Number of cards awarded
2012–13		
5	Red	7
	Yellow	19
	Green	23
4	Red	4
	Yellow	18
	Green	29
3	Red	6
	Yellow	35
	Green	26
2	Red	28
	Yellow	3
	Green	13
1	Red	1
	Yellow	1
	Green	0
2013–14		
5	Red	14
	Yellow	43
	Green	85
4	Red	2
	Yellow	34
	Green	40
3	Red	2
	Yellow	35
	Green	83
2	Red	2
	Yellow	4
	Green	21
1	Red	0
	Yellow	4
	Green	1

along with the type of environment (clinical/non-clinical) and staff demographic.

These data form part of a larger ongoing study which has received ethical approval by an NHS proportionate review board (ref. 13/NI/0098).

RESULTS

Over the two academic years, a total of 583 professionalism cards were awarded; 213 in 2012–13 and 370 in 2013–14. A breakdown in the number and type of cards awarded per year group can be seen in Table 2. In total 55% of the cards were green, 34% yellow and 11% red. The demographics of the staff awarding each type of professionalism card can be seen in Table 3. The majority of cards were awarded by administrative (29%) and part-time clinical staff (24%). 76% of cards were awarded in clinical environments (clinic and pre-clinical skills) with 24% relating to non-clinical environments. The breakdown of the different card types awarded in each environment can be seen in Table 4.

Qualitative analysis of the reported incidents resulted in 465 professional behaviours beyond that expected and 422 unprofessional behaviours being coded, as the majority of incidents related to more than one aspect of professionalism. The most common type of professional behaviour beyond that expected (n = 265) was helping others, especially colleagues. This was coded as altruistic behaviour. Of the unprofessional behaviours demonstrated, the most frequently reported incidents related to a lack of conscientiousness (n = 123). Despite this, there was a greater range of frequently reported unprofessional behaviours. Common unprofessional behaviours related to endangering the safety of themselves or others, a lack of insight, or respect. The frequencies and types of behaviours demonstrated can be seen in Table 5. As data was coded inductively, the emerging themes did not necessarily map onto the professionalism assessment descriptors in Table 1.

Table 3 The types of professionalism carded awarded by different staff demographic groups

Staff demographic (% of total cards awarded)	Type of card	Number of cards awarded (% of total per staff demographic)
Administrator (university and hospital) (29%)	Red	11 (7%)
	Yellow	64 (38%)
	Green	94 (55%)
Nurse (12%)	Red	6 (9%)
	Yellow	27 (40%)
	Green	35 (51%)
Full time academic (21%)	Red	18 (14%)
	Yellow	52 (43%)
	Green	52 (43%)
Full-time clinical (non-university employed) (8%)	Red	3 (6%)
	Yellow	25 (53%)
	Green	19 (41%)
Part-time clinical tutor (general dental practitioner) (24%)	Red	28 (20%)
	Yellow	22 (16%)
	Green	89 (64%)
Technician (6%)	Red	0 (0%)
	Yellow	6 (16%)
	Green	32 (84%)

Table 4 The number of cards awarded in clinical and non-clinical environments

Type of card	Card awarded in clinical environment (% of card type)	Card awarded in non-clinical environment (% of card type)
Red	45 (70%)	19 (30%)
Yellow	121 (61%)	78 (39%)
Green	277 (71%)	33 (29%)

DISCUSSION

To the author's knowledge, this is the first study which reports the professional behaviours exhibited by undergraduate dental students using critical incident reporting. A large number of forms were submitted over the two year period; however, there was a marked increase in the second year. This largely comprised of green cards, which had more than doubled from the previous year. Although it is unclear exactly what was responsible for this increase, it could be partly explained by staff being more aware and familiar with the system, rather than a dramatic increase in the professionalism of students. It may also be related to the guidelines for awarding green cards. Unlike unprofessional behaviours which have concrete examples, a green card may be awarded if the assessor feels that the student has gone beyond what is expected of them, which is rather subjective. This subjectivity, coupled with the greater familiarity with the system by both staff and students, may account for the increase.

The majority of overall cards awarded were green cards (55%). Although this could be interpreted as a greater prevalence of professional behaviours beyond that expected, it could also be related to findings in other studies which concluded unwillingness to record unprofessional behaviour by staff.[15] This has been reported to be related to a lack of training and fear of consequence, given the subjective nature of professionalism.[15] Only 11% of the cards awarded were red, with 27 (42%) of these being given to an entire class for a single incident involving an accidental spillage of mercury, where the culprit would not come forward. If this incident were excluded, then only 7% of the overall cards awarded would have been red. This suggests that the incidence of serious unprofessional behaviours, which involve dishonesty and endangering patient safety are very low, or perhaps that they are under-reported. The latter is less likely, as any serious incident would be highlighted to the head of year that would investigate the incident and award a red card if one had not been given. The remainder of the cards awarded were yellow (34%), demonstrating a greater prevalence of minor unprofessional incidents compared to serious ones. This would be expected as other authors have postulated that only a small number of individuals exist with serious professionalism deficiencies, yet most students will exhibit lapses in professionalism at some point.[14]

Critical incident reporting was introduced in part to capture behaviours not easily reported using assessment of formal activities by teaching staff. It is therefore encouraging to notice that 29% of all cards submitted were completed by administrative staff, who previously would not have the ability to formally assess student behaviour.

Table 5 The types and frequencies of professional and unprofessional behaviours demonstrated by students

Professional behaviours	
Coding of professional behaviour	**Frequency**
Altruism	265
Conscientiousness	77
Communication	18
Enthusiasm	18
Positive attitude	11
Coping	11
Teamworking	10
Adaptability	10
Caring	8
Responsibility	8
Insight	6
Respect	5
Consistency	4
Leadership	3
Competence	1
Unprofessional behaviours	
Coding of professional behaviour	**Frequency**
Lack of conscientiousness	123
Endangering safety	67
Lack of respect	47
Lack of insight	42
Absence	34
Failure to improve	29
Poor attitude	24
Negative impact on others	15
Dishonesty	9
Lack of responsibility	9
Using ill health	8
Lack of caring	2

Three quarters of all cards were administered in clinical environments; and this proportion remained fairly constant across all types of card. Interestingly, the only administrative staff who come into contact with dental students in clinical environments are the receptionists. This may suggest that the forms are being over used by a small proportion of individuals. The design of the course centres on enquiry based learning which may also explain the high numbers of cards awarded in clinical environments, as most of the contact students have with staff is in clinical areas. There was a dramatic increase in the number of cards awarded to students in year two onwards (n = 127–191), when compared to year one (n = 7). Although students in year one attend dental pre-clinical skills sessions throughout the year, the majority of their time is spent in the medical school, whereas in year two they begin to treat dental patients. Although medical school staff involved in teaching dental students were informed of the critical incident reporting and given access to the online training package, their location and lack of familiarity with the dental school may have resulted in less use of the system. All University employed staff, NHS nursing, administrative and clinical staff who come into contact with undergraduate students had completed the training, however it is not known how many staff in the medical school had undertaken it. Similarly, there was also a noticeable increase in cards awarded in years three to five, when compared to year two. Given that most of the cards were awarded in clinical environments and that year two have significantly less clinical time than in year 3 onwards, this could explain the difference.

Coding the incidents was undertaken inductively, rather than using a preconceived framework. Given the complex and context specific nature of professionalism, coupled with the numerous discourses described in the literature, coding such issues can be challenging.[2] As the incidents reported behaviour, coding focussed on aspects of professionalism relating to individual/intrapersonal and interactive/interpersonal constructs. The overwhelming positive professional behaviours demonstrated could be linked to altruism and involved helping colleagues, staff and patients. This is encouraging, given the caring nature of the profession and the importance of making the needs of our patients our primary concern over our own. The most common unprofessional behaviours could be linked to a lack of conscientiousness; most frequently poor timekeeping, poor knowledge or lack of preparation for a clinical session. This code most closely relates to the reliability and responsibility domain in Table 1. Despite this, there was a wider range of frequent unprofessional behaviours reported. The second most common behaviour involved endangering the safety of themselves or others, followed by a lack of insight and respect. This is worrying, as endangering the safety of themselves or others can have significant consequences. Such behaviours included failure to fully adhere to dental unit husbandry protocols and sharps safety, potentially endangering themselves or their nurse to a sharps injury. The latter may be related to student development and learning of procedures and protocols. Behaviours coded as a lack of respect often involved clinical situations in which the students did not display the appropriate level of respect towards their tutor or their peers. Examples included undermining the tutor by failing to follow their instructions or not gaining the tutors permission before dismissing the patient. Behaviours relating to a lack of insight included overestimating their ability in clinical situations and failure to meet deadlines. A small number of incidents related to students using ill health to account for their unprofessional behaviour which included lack of attendance or failure to complete tasks by a deadline.

Many of the frequently reported unprofessional behaviours related to the intrapersonal construct of professionalism. Determining the underlying associations of such behaviours can be complex and are beyond the scope of this paper. Despite this, one could postulate that they are related to an individual's character, values and personality. Another interpretation may be that they are a product of the environment the student is in. Much has been written about the impact of the learning environment and the day to day routines that students are exposed to, the so called 'hidden curriculum', upon student learning and behaviour and it is often cited as having a negative impact upon student professionalism.[16,17]

Although no other studies in dentistry have reported such findings, a study involving medical students used critical incident reporting for unprofessional behaviours combined with student reflection.[13] Common themes which echoed the present study related to absence, lack of conscientiousness and unsatisfactory clinical procedures; in this case record keeping. Despite this, the authors also reported unprofessional behaviour relating to confidentiality and poor communication, which did not arise in the present study.[13]

The majority of critical incidents related to clinical environments, therefore it could be argued that such information could be captured using existing methods. However, incidents were often reported by non-teaching staff suggesting these may have not been previously recorded. Even if they had been, the repercussions of receiving a critical incident form and the impact it can have on student progression, may result in greater reflection and perceived importance by the student compared to receiving a low grade for a clinical session. Indeed, several authors have reported used critical incidents as a method of student learning when combined with written reflection.[13,18] Introduction of such a system can also help to change the culture of the school, by impressing upon everyone the importance of professionalism. It may even promote greater professionalism as students want to obtain a green card.

Although this study reports the behaviours demonstrated by undergraduate dental students, further work could include staff and

students' perceptions of the system and the potential impact it has upon student behaviour and progression.

CONCLUSION

This study has highlighted that such a reporting system can be a useful piece of armamentarium in assessing the professionalism of undergraduate dental students and may capture behaviours not previously reported by conventional assessment. In line with international recommendations regarding the assessment of professionalism, multiple assessors can be used longitudinally with minimal administrative burden.

The authors would like to thank Dr Katherine Checkland and Dr Julia Segar for their valuable comments regarding the manuscript and Professor Anthony Roberts for his contribution and technical assistance in delivering staff training for the critical incident forms.

1. General Dental Council. Preparing for practice: dental team learning outcomes for registration. 2011. Online information available at http://www.gdc-uk.org/dentalprofessionals/education/pages/dental-team-learning-outcomes.aspx (accessed May 2015).
2. Hodges B D, Ginsburg S, Cruess R *et al.* Assessment of professionalism: recommendations from the Ottawa 2010 conference. *Med Teach* 2011; **33:** 354–363.
3. Lynch D C, Surdyk P M, Eiser A R. Assessing professionalism: a review of the literature. *Med Teach* 2004; **26:** 366–373.
4. American Board of Internal Medicine. Project professionalism.1995. Online information available from: http://www.abimfoundation.org/~/media/Foundation/Professionalism/Project%20professionalism.ashx?la=en (accessed May 2015).
5. American Academy of Paediatrics, Committee on Bioethics, Fallat M E, Glover J. Professionalism in pediatrics: statement of principles. *Pediatrics* 2007; **120:** 895–897.
6. Bossers A, Kernaghan J, Hodgins L, Merla L, O'Connor C, Van Kessel M. Defining and developing professionalism. *Can J Occup Ther* 1999; **66:** 116–121.
7. Van De Camp K, VernooijDassen M, Grol R, Bottema B. How to conceptualise professionalism: a qualitative study. *Med Teach* 2004; **26:** 696–702.
8. van Mook W N, Gorter S L, O'Sullivan H, Wass V, Schuwirth L W, van der Vleuten C P. Approaches to professional behaviour assessment: tools in the professionalism toolbox. *Eur J Intern Med* 2009; **20:** e153–157.
9. O'Sullivan A J, Toohey S M. Assessment of professionalism in undergraduate medical students. *Med Teach* 2008; **30:** 280–286.
10. Ginsburg S, Regehr G, Mylopoulos M. From behaviours to attributions: further concerns regarding the evaluation of professionalism. *Med Educ* 2009; **43:** 414–425.
11. Mazor K M, Zanetti M L, Alper E J *et al.* Assessing professionalism in the context of an objective structured clinical examination: an in-depth study of the rating process. *Med Educ* 2007; **41:** 331–340.
12. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006; **3:** 77–101.
13. Hodges D, McLachlan J C, Finn G M. Exploring reflective 'critical incident' documentation of professionalism lapses in a medical undergraduate setting. *BMC Med Educ* 2009; **9:** 44.
14. van Mook W N, Gorter S L, De Grave W S *et al.* Bad apples spoil the barrel: addressing unprofessional behaviour. *Med Teach* 2010; **32:** 891–898.
15. Field J, Ellis J, Abbas C, Germain P. Teaching and assessment of professional attitudes in UK dental schools - commentary. *Eur J Dent Educ* 2010; **14:** 133–135.
16. Hafferty F W. Beyond curriculum reform: confronting medicine's hidden curriculum. *Acad Med* 1998; **73:** 403–407.
17. Kittmer T, Hoogenes J, Pemberton J, Cameron B H. Exploring the hidden curriculum: a qualitative analysis of clerks' reflections on professionalism in surgical clerkship. *Am J Surg* 2013; **205:** 426–433.
18. Rademacher R, Simpson D, Marcdante K. Critical incidents as a technique for teaching professionalism. *Med Teach* 2010; **32:** 244–249.