

# Clinical Teachers' Opinions about Bedside-based Clinical Teaching

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## آراء أساتذة التدريب السريري حول التعليم السريري

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**المخلص: الهدف:** تبين في السنوات الأخيرة وجود انخفاض في الوقت المخصص للتعليم السريري. تهدف هذه الدراسة إلى تقييم مدى إدراك أساتذة التدريب السريري وممارستهم وطرق أساليبهم للتعليم السريري. **الطريقة:** أجريت هذه الدراسة في مستشفى ناينويلز بجامعة دندي في المملكة المتحدة. حيث تم استحداث استبيان ذاتي وتجريه على أساتذة التدريب السريري بالجامعة العاملين بدوام كامل، تضمن الاستبيان على 36 سؤالاً يتعلق بالخبرة في مجال التدريس ومدى إلمام أعضاء الهيئة التدريسية بـ 12 منهجاً للنتائج التعليمية في كلية دندي الطبية وخبرتهم وممارستهم لقواعد وآداب التعليم السريري. كما أجريت مقارنة لكل بند بين الأطباء الاستشاريين والاختصاصيين. **النتائج:** شارك في الدراسة 54 (70%) أستاذ سريري من أصل 64، من بينهم 26 استشاري (57%)، و 19 اختصاصي (42.3%). أوضحت النتائج أن مجموع 17 استشاري (65%) تم تدريبهم لتعليم طلبة الطب في المستشفى، بينما خضع 9 اختصاصيين فقط (47%) لتدريب مماثل. 13 استشاري (50%) كانوا على دراية تامة بـ 12 منهجاً للنتائج التعليمية بكلية دندي الطبية في حين كان 7 (36%) من الاختصاصيين فقط على نفس الدراية بالمناهج التعليمية. العوائق التي تم ذكرها من قبل الاستشاريين والاختصاصيين كانت مجموعات لأكثر من 6 طلاب (65% بالمقابل، 61% على التوالي)، عدد المرضى المحدود الذين يعانون من الأعراض السريرية الجيدة (67% بالمقابل، 63% على التوالي)، قصر مدة الإقامة بالمستشفى (73% بالمقابل، 68% على التوالي)، الافتقار إلى الخصوصية في العنابر المزدهمة (76% بالمقابل، 73% على التوالي)، الإزعاج الناتج عن الهاتف والزوار (57% بالمقابل، 64% على التوالي). **الخلاصة:** فعالية برامج التأهيل والتدريب التي يلقتها أساتذة التدريب السريري وقدرتهم على فهم مناهج التدريس بدقة تساهم بشكل كبير في نجاح التعليم السريري. كما أن تحديد العقبات التي تؤثر سلباً على التعليم السريري سيساهم أيضاً في الحصول على برامج أكثر فعالية وكفاءة.

**مفتاح الكلمات:** سريري، تعليم، طبي، المنهج، استشاريين، اختصاصيين، المملكة المتحدة.

**ABSTRACT: Objectives:** In recent years, there has been a decline in estimated time spent on bedside teaching. The aim of this study was to evaluate clinical teachers' perceptions and practice of, and approaches to, bedside teaching. **Methods:** The study site was Ninewells Hospital in Dundee, UK. A self-administered questionnaire was developed and piloted on full-time clinical academic university staff. Responses were solicited to 36 questions relating to teaching experience, familiarity with the 12 learning outcomes of Dundee Medical School's curriculum, and perception and practice of basic bedside etiquette. For each of these items, a comparison between consultants and specialist registrars (SPRs) was carried out. **Results:** Out of the 64 clinical teachers approached, 45 (70%) participated in the study: 26 of them (57.7%) were consultants and 19 (42.3%) SPRs. A total of 17 (65%) of the consultants had been trained to teach medical students at the bedside, while only 9 SPRs (47%) had had similar training. In addition, 13 consultants (50%) reported being familiar with Dundee Medical School's 12 learning outcomes, while only 7 (36%) SPRs were familiar with it. Obstacles reported by consultants and SPRs were groups of over 6 students (65% versus 61%, respectively), a limited number of patients with good clinical signs (67% versus 63%, respectively), a shorter length of stay in hospital (73% versus 68%, respectively), lack of privacy in crowded wards (76% versus 73%, respectively), and interruptions from telephones and visitors (57% versus 64%, respectively). **Conclusion:** Effective clinical teacher training and a thorough understanding of curriculum outcomes are crucial to successful bedside clinical teaching. Identifying obstacles to bedside clinical teaching will contribute to a more effective and efficient programme.

**Keywords:** Bedside; Teaching; Clinical; Curriculum; Consultants; Registrars; UK.

### ADVANCES IN KNOWLEDGE

- This study shows the importance of ward-based bedside teaching practice particularly in teaching hospitals despite the decline in this form of teaching in recent years.
- The current study shed more light on bedside teaching as a pivotal element in the training of medical students and interns in particular as regards the teaching and reinforcing of history-taking and physical examination skills.
- The study describes some of the important aspects to be considered during the bedside teaching by evaluating current practice in a teaching hospital setting.
- It also demonstrates the significant difference in perceptions of bedside teaching practice principles between consultants and specialist registrars.

**APPLICATION TO PATIENT CARE**

- *This study highlights the finding that bedside is the premier location for teaching and reinforcing history-taking and physical examination skills.*
- *Bedside teaching also provides an excellent opportunity to enhance the learner's observational skills.*
- *This study emphasises how to communicate better with patients.*

**B**EDSIDE TEACHING IS THE ONLY MEDICAL learning situation where history-taking, physical examination, empathy, and a caring attitude can all be learnt simultaneously and by example. It brings together a learning triad of patients, students, and tutors and involves an interaction between all three.<sup>1</sup> The method acts as an important tool for the acquisition of knowledge and clinical skills that are difficult to teach through other methods, as well as to evaluate trainee competencies in a diversity of areas (e.g. physical examination, procedural, and communication skills). In bedside teaching, the teacher is able to model the interpersonal skills and humanistic aspects of patient care, which are essential to a strong doctor-patient relationship. In order to teach clinical skills effectively, a teacher must involve patients in the educational process, and there is strong evidence that patients favour the method; additionally, they report a better understanding of their illnesses when they are active participants in bedside teaching sessions.<sup>1-3</sup>

Several authors have identified barriers to the full utilisation of the potential benefits of ward rounds. These barriers include time constraints, faculty attitude, knowledge and skills, lack of respect for patients, and over-reliance on technology.<sup>4</sup> According to one study, the most important detractors to the success of rounds include a disrespectful attitude, and rounds that are too long or too short.<sup>5</sup> Time constraints have also been shown to be a powerful detractor, arising from the pressure to see more and more patients during the course of what are becoming severely shortened hospital stays.<sup>6</sup> Additionally, increased demands for documentation has decreased the time that was previously spent in bedside teaching.<sup>6,7</sup> Unfortunately, while time spent learning at the bedside decreases, other studies suggest that it is primarily through ward rounds that learners acquire the skills of observation, communication, examination, and professionalism, and learn to perform diagnostic and treatment procedures.<sup>6</sup>

William Osler emphasised this interaction, stating medicine should be taught at the bedside.<sup>7-13</sup> However, in spite of the recognised importance of bedside education, in the USA the estimated time allotted to it as a component of medical training declined from 75% in 1960 to 16% in 1978.<sup>12,14,15</sup> One study revealed lack of time as the most frequent obstacle to this method and, as a result, bedside teaching was allotted only ~17% of instructional time in hospitals.<sup>1</sup> This decline may be related to increasing reliance on computer technologies and imaging and laboratory testing, along with the increasing administrative and research duties of senior doctors. These variables impinge on the time set aside for bedside teaching. Consequently, doctors' skills in history-taking and physical examination have declined, making both trainees and attending physicians less willing to be tested at the bedside. Additionally, medical educators sometimes work under the misunderstanding that their job is to teach the curriculum rather than the student.<sup>15,16</sup>

The main aim of our study was to investigate the challenges inherent to bedside teaching and propose recommendations to enhance both the effectiveness and efficiency of such teaching. The main objectives were to assess participants' perceptions relevant to bedside teaching, detail the factors considered relevant during bedside teaching, and observe participants' approaches to bedside teaching. We compared the perceptions, practices, and approaches of consultants and specialist registrars (SPRs) to bedside teaching. By conducting this study, we aimed to assess if bedside teaching is still a preferred method of medical education among clinical teachers.

## Methods

An ethically approved study was conducted among clinical teachers at Ninewells Hospital, which is the main teaching hospital of the University of Dundee in Dundee, UK, in June 2001. The programme for

**Table 1:** Professional profiles of study participants

Characteristics	Consultants (n = 26) (%)	*SPRs (n = 19) (%)
Age (mean $\pm$ SD) in years	42 $\pm$ 1.3	30 $\pm$ 1.1
Male	20 (62.5)	12 (37.5)
Medicine	9 (34.6)	7 (36.8)
Anaesthesia	4 (15.4)	3 (15.8)
Surgery	5 (19.3)	2 (10.5)
ENT	3 (11.6)	1 (5.3)
Neurology	2 (7.7)	1 (5.3)
Ophthalmology	1 (3.8)	2 (10.5)
Orthopaedics	1 (3.8)	2 (10.5)
Obstetrics and gynaecology	1 (3.8)	1 (5.3)
<b>Total number (%)</b>	<b>26 (57.7)</b>	<b>19 (42.3)</b>

SD = standard deviation; \*SPRs = specialist registrars; ENT = ear, nose, and throat.

bedside teaching was provided by the medical faculty, which has an innovative, systematically integrated, problem-based undergraduate medical curriculum. All clinical teachers of Dundee Medical School (n = 87) were invited to participate in the study. They were then emailed a questionnaire and a reminder was sent to non-respondents four weeks later. A total of 64 clinical tutors and staff agreed to participate in the study. The majority had honorary appointments with the university, and held degrees in medical education.

The self-administered questionnaire was developed in consultation with local expertise in medical teaching and was piloted and posted to a sample representing the study population of full-time clinical academic university staff (n = 20). The questionnaire contained 3 main sections. The first section included questions about the respondent's clinical and teaching experience, and included age, gender, specialty, clinical teaching background, whether clinical staff undertook teaching courses, level of clinical staff seniority, access to an expert in clinical education, and level of familiarity with the learning outcomes of Dundee's undergraduate and postgraduate curricula which are emphasised during bedside teaching.<sup>17</sup> This section also included queries about the participant's response to teaching different specialties (for example, a surgeon teaching the cardiovascular system), the medical speciality system covered in bedside

teaching, and whether the participant was in favour of continuing bedside teaching. Finally, in this section, participants were asked to list the three most essential elements in preparation for bedside teaching.

The second section asked the participant to rate factors that were considered important during bedside teaching, such as the learning outcomes of Dundee's undergraduate and postgraduate curricula.<sup>17</sup> This included the respondent rating the importance of displaying good bedside manners on a 4-point scale: vitally important; considerably important; of little importance, and not at all important.

The third section asked about the participant's practice and approach to bedside teaching as per the learning outcomes of Dundee's undergraduate and postgraduate curricula.<sup>17</sup> Participants were asked to indicate how often they performed different activities in bedside teaching by grading such statements as "I model good teaching behaviour by showing enthusiasm" using the 4-point scale always, sometimes, rarely, and never.

Two open-ended questions for further comments about hindrances and any other comments were included. The data were analysed anonymously. For each item, a comparison between consultants and specialist registrars was carried out. Microsoft Excel, Version 7 (Microsoft, Redmond, Washington, USA) and the Statistical Package for Social Sciences (SPSS), Version 12 (IBM, Inc., Chicago, Illinois, USA) were used to enter and analyse data. The results were expressed as mean  $\pm$  standard deviation (SD). Quantitative data were compared by means of a two-tailed student's t-test and qualitative data was analysed by a chi-square test. A *P* value of  $\leq 0.05$  was considered statistically significant.

## Results

Out of the 64 clinical teachers approached, 45 (70%) participated in the study. There were 26 consultants (57.7%) and 19 SPRs (42.3%). The distribution of the participants according to age, gender, and clinical specialties is presented in Table 1. Table 2 demonstrates that 17 consultants (65%) had been trained on how to teach medical students at the bedside, while only 9 SPRs (47%) had had similar training. In addition, 13 consultants (50%) reported

**Table 2:** Comparison between consultants and SPRs in teaching related items

Items	Consultants *n = 26 (%)	+SPRs *n = 19 (%)	P value
In favour of bedside teaching	24 (92)	12 (63)	0.02
Training in teaching or access to educational experts	17 (65)	9 (47)	0.04
Supporting idea of teaching different specialties	9 (34)	10 (52)	0.04
Familiarity with 12 learning outcomes of Dundee Medical School's curriculum	13 (50)	7 (36)	0.03

SPRs = specialist registrars.

**Table 3:** Factors considered relevant during bedside teaching

Bedside factors	Consultants *n = 26 (%)	SPRs *n = 19 (%)	P value
Demonstrating enthusiasm during bedside teaching	17 (65.4)	10 (52.6)	0.04
Motivation (mean ± SD)	3.1 ± 0.6	2.7 ± 0.6	0.04
Demonstrating technique when teaching procedures	13 (50)	13 (68.4)	0.02
Time constraints (mean ± SD)	2.9 ± 0.6	3.3 ± 0.4	0.02
Displaying good bedside manner	22 (84.6)	16 (84.2)	<0.087
Admitting "I don't know"	13 (50)	07 (36.8)	< 0.034
Teaching new things about an area of specialty	22 (84.6)	12 (63.2)	< 0.012
Preparing students for the session and debriefing	08 (30.8)	11 (57.9)	< 0.015

SD = standard deviation; SPRs = specialist registrars.

\*Percentages were derived from n = total number for each of the clinical teacher groups.

being familiar with Dundee Medical School's 12 outcomes curriculum, while only 7 SPRs (36%) reported this. Similarly, more consultants (n = 24) favoured bedside teaching (92%) while only 12 SPRs did so (63%). Also, 10 SPRs (52%) compared with 9 consultants (34%) supported the idea of teaching a different specialty (e.g. surgeons teach the cardiovascular system) [Table 2].

Overall, 93% of participants agreed that displaying good bedside manners was of vital importance. While 100% of consultants agreed with this item as compared to 84% of SPRs, this factor was not statistically significant (15.8%, 95% confidence interval [CI] 1.6– 32.0%,  $P = 0.07$ ). The majority of consultants considered demonstrating enthusiasm during bedside teaching of vital importance. Compared to consultants, more SPRs considered the demonstration of technique when teaching procedures was of vital importance [Table 3].

There was a significant difference between consultants and SPRs in rating a statement regarding the importance of motivating learners to learn aspects of specialty medicine ( $P = 0.036$ ). Compared to consultants, more SPRs indicated that time constraints affected their bedside clinical teaching (42.7%, 95% CI 1.5%, 83.0%;  $P = 0.04$ ) and (39%, 95% CI 6.6%, 73.0%;  $P = 0.02$ ), respectively. There were no significant differences between the two groups' responses to other items such as "I'm effective in teaching learners something new about the specialty at the end of the session" ( $P = 0.09$ ) [Table 3]. The participants had close similarities regarding practice, approach to bedside clinical teaching, and response to essential common bedside factors such as briefing and debriefing [Tables 3]. The obstacles to bedside clinical teaching reported by consultants and SPRs were group sizes of over 6 students (65% versus 61%), a limited number of patients with good clinical signs (67% versus 63%), shorter length of patients' stay in hospital (73% versus 68%), lack of privacy in crowded wards (76% versus 73%), and interruptions from telephones and visitors (57% versus 64%), respectively. Adequate warning to patients about bedside clinical teaching, emphasis on feedback, discussing the history in the presence of the patient, polishing communication skills, and reducing work demands were reported as solutions to improve and facilitate bedside clinical teaching.

## Discussion

In this survey of clinical teachers, light was shed on the practicalities of bedside teaching and clinical tutors' understanding of effective styles. The study highlighted issues that have been reported previously, such as the importance of the bedside as the premier location for clinical teaching. It was also seen as the most logical location for medical instructors to reinforce history-taking and physical examination skills, and enhance observational skills.<sup>7</sup>

The participants identified several elements for effective bedside clinical teaching. They emphasised their need to learn how to be gentle with students and house staff, better communicate with patients, and maintain appropriate ethics and professionalism with the patient. This finding confirmed similar results of other studies.<sup>16,18-22</sup>

A high percentage of consultants demonstrated enthusiasm during bedside clinical teaching. This was attributed to the fact that the majority of consultants, as compared to SPRs, had had training in teaching or had been trained on how to teach medical students. They were also more familiar with Dundee Medical School's learning outcomes and were in favor of bedside clinical teaching. The majority of SPRs considered demonstrating techniques when teaching procedures of vital importance. This may be related to the proactive involvement of SPRs in the physical and procedural aspects of bedside clinical teaching.

The obstacles to bedside clinical teaching reported here can be categorised as teacher-related (e.g. teacher had not been appropriately trained in bedside teaching, or the teacher's discipline was mainly technology-oriented), climate-related (e.g. busy, noisy, or poorly equipped), system-related (e.g. a specialty with no bedside component), patient-related (e.g. patient very sick or not interested in participating), or other miscellaneous factors (e.g. teaching time occurs during visiting hours or during the business ward round).

Clinical education that integrates substantial bedside teaching is an effective approach to satisfying the public need to train intelligent, skilled, and compassionate clinicians. Collaborating with learners, developing faculty skills, including the patient, and promoting a supportive institutional culture can rectify a variety of barriers to bedside

clinical teaching.<sup>5,23-24</sup> There is a need to include new innovations and approaches in bedside teaching such as level-specific teaching and mini-clinical evaluation exercise (CEX) examinations as an evaluation tool.<sup>25</sup>

Despite the fact that few studies exist regarding the effectiveness of bedside clinical teaching, our results support the findings reported in many studies that surveyed clinical educators and advocate bedside clinical teaching's value in training physicians.<sup>5,26</sup>

## Conclusion

Bedside teaching will continue to play an important role in the training of medical students as it is perceived as best practice and is favoured by the majority of surveyed clinical teachers and medical tutors. However, effective clinical teacher training and a thorough understanding of curriculum outcomes are crucial to successful bedside clinical teaching. Identifying obstacles to bedside clinical teaching will contribute to a more effective and efficient programme.

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