



Centrally organised bedside teaching led by junior doctors

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SUMMARY

Background: Clinical bedside teaching is arguably the most favoured form of teaching by medical students, but has been on the decline in recent years. Junior doctors are often underused as teachers and, with adequate training, may help to solve this problem. Bedside Teachers is a junior doctor-led teaching programme that is delivered throughout South-East Scotland, and is now in its third year. This study aimed to investigate the perceptions of final-year medical students participating in the Bedside Teachers programme, and

how they compared this with teaching from senior staff.

Methods: Anonymised questionnaires were issued to all participants. Students were asked to rate statements relating to: (i) the quality of bedside teaching tutorials; and (ii) the teaching delivered by junior doctors compared with that delivered by senior staff.

Results: All students indicated that the tutorials improved their confidence in clinical examination. Eighty-seven per cent indicated that it provided a useful clinical experience that they would otherwise not have re-

ceived. All respondents indicated that junior doctors were more approachable than senior staff. The majority of students indicated that they thought junior doctors covered more relevant material to being a good junior doctor, and that junior doctor-led teaching was at least as good or better than teaching by senior staff on a number of other criteria.

Conclusions: With adequate training, junior doctors can be a useful resource for increasing the bedside teaching opportunities available to students, with potential advantages over using senior staff.

INTRODUCTION

To medical students, bedside teaching is arguably the most favoured and most in-demand form of teaching, but also the least well delivered.¹ Students like it because it is patient centred, situates theoretical knowledge in a practical context, gives them an opportunity to practise and improve their skills, and provides direct contact with, and observation of, experienced practitioners.²

Bedside teaching seems to be on the decline,^{3,4} and this reduction in exposure to a critical aspect of training may be partly responsible for the declining clinical skills of junior doctors.⁵ If progress is to be made, we must understand the reasons for the decline, and explore ways of overcoming impediments and improving quality. Earlier studies suggest that junior doctors can be effective teachers, with potential benefits over senior staff such as increased availability and a better appreciation of the learner's perspective.⁶ It was thought that, with adequate training, bedside teaching delivered by junior doctors might represent a good solution to this problem.

Bedside Teachers is a junior doctor-led teaching programme that is now in its third year of delivery, and is available throughout South-East Scotland for medical students from the University of Edinburgh. It aims to: (i) increase the accessibility of small group bedside clinical teaching to students, with an emphasis on clinical examination; and (ii) encourage confidence when dealing with patients in a clinical setting. We also aimed to increase, formalise and evaluate junior doctor-led teaching.

The Bedside Teachers programme is based on the propositions that foundation doctors enjoy and are enthusiastic



about teaching, often have greater availability and presence on the wards, and have knowledge of and immediate access to patients with clinical signs relevant to medical students.

Tutors attended a teaching training symposium co-organised by the Medical Education Faculty (University of Edinburgh) and previous tutors on the programme. Three 45-minute tutorials discussed student learning styles, small group teaching methodology and delivering feedback (including familiarising tutors with the One-Minute Preceptor, Pendleton and other feedback models). Two 1-hour sessions involved tutors being observed teaching (using the fishbowl method), with individualised feedback given by course organisers using one of the feedback models previously discussed.

Bedside Teachers tutorials were 1 hour long, with two or three students, and focused on clinical examination of ward patients with clinical signs. They were advertised directly to final-year students through a web-based forum.

The aim of this study was to investigate the perceptions of final-year medical students

concerning the foundation doctor-led bedside teaching programme, and any perceived benefits or limitations it provides compared with teaching provided by senior staff.

METHODS

Fifth-year (final-year) medical students attending Bedside Teachers tutorials between November 2010 and July 2011 across South-East Scotland were invited to participate in the study. Anonymised paper-based questionnaires were issued to all students at the end of each tutorial containing statements with which they were asked to indicate whether they strongly disagreed, disagreed, were neutral, agreed or strongly agreed. There were also spaces for free-text comments.

Students were asked to rate statements relating to the quality of individual tutorials and to compare teaching delivered by junior doctors with that delivered by senior staff. A project plan was sent to the South-East Scotland Research Ethics Service, who indicated that no formal ethical approval was required. Questionnaires were collected after each tutorial and were then independently analysed at a central site.

Table 1. Cumulative responses of students attending the 'Bedside Teachers' tutorials. Students were asked to rate how much they agreed with the statements listed

Statement	Rating					n/a
	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree	
The session was well organised	–	–	3%	29%	68%	–
The tutor was approachable	–	–	–	28%	72%	–
I feel I have gained confidence on clinical examination	–	–	–	36%	64%	–
The handouts provided are useful to consolidate my learning	–	–	–	24%	19%	57%
Patient dignity and comfort was preserved throughout the session	–	–	–	56%	44%	–
I would rate the quality of the session as high overall	–	–	13%	29%	59%	–
The session has provided useful clinical experience that I would otherwise not have received	–	–	14%	68%	19%	–

taught basic examination skills, with 9 per cent feeling neutral about this aspect. After the sessions, 76 per cent of attendees felt that they were more confident teachers, with 24 per cent feeling neutral on this point. The majority of respondents felt that teaching delivered by junior doctors was at least as good as that delivered by more senior staff.

DISCUSSION

Bedside teaching

Bedside teaching has a unique place in undergraduate medical education. Through directly observing the doctor–patient relationship, students experience not only the process of assessing disease, but also of interacting with patients. Students gain the opportunity to become increasingly confident communicating with and examining real patients, knowing that a more experienced practitioner is there to guide them and offer feedback on their technique. Bedside teaching programmes reaffirm the importance of teaching students how to enter into the distinctly human exchange that takes place at the bedside.

The progressive decline of bedside teaching has been attributed to several factors. Hospitals are busier than before, with significantly increased patient throughput.

Increasing the number of senior doctor-led tutorials, particularly for students in earlier clinical years, may be an option. However, senior staff members now have broader roles in the hospital, and typically have less time to see patients on the ward and for small group teaching. They may also feel underprepared to teach students who are undertaking a radically different curriculum to the one they experienced themselves.⁷

There seems to be an ever-increasing need to mobilise

RESULTS

Eleven foundation doctors led a total of 40 bedside teaching tutorials in six teaching hospitals. Student participants were allowed to attend as many tutorials as they wished, and they were invited to fill in a questionnaire at the end of each tutorial they attended. A total of 111 responses were received at the end of the study period.

Quality of tutorials

All students (100%) indicated that they thought the tutorials improved their confidence in clinical examination, that patient dignity and comfort were preserved throughout, and that tutors were approachable. All 57 per cent who received handouts thought they were useful to consolidate learning.

Regarding the quality of the tutorials, 87 per cent of

attendees rated them as 'high' overall, 97 per cent felt that the tutorials were well organised and 86 per cent indicated that they thought the tutorials provided a useful clinical experience they would otherwise not have received.

Junior doctor versus senior staff teaching

In comparison with senior staff, 100 per cent of students indicated that they thought junior doctors were more approachable. After one teaching session a student stated 'Very good session, not intimidated'. All students also indicated that they felt junior doctors covered more relevant material to being a good junior doctor, with one student stating that 'Junior doctors understand more what is relevant to finals and starting work'. Moreover, 91 per cent of attendees reported that they felt more trust in junior doctors when they

Table 2. Cumulative responses of students attending the 'Bedside Teachers' tutorial. Students were asked to rate how much they agreed with the statements listed

In comparison with teaching <i>on the same topic</i> delivered by senior medical staff	Rating						N/A
	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree		
I felt junior doctors were more approachable	-	-	-	14%	86%	-	
I felt junior doctors covered more relevant material to being a good junior doctor	-	-	-	23%	77%	-	
I feel more trust in junior doctors when they teach basic examination skills	-	-	9%	36%	55%	-	
I feel junior doctors have more confidence when teaching	-	-	24%	17%	57%	-	
I feel junior doctor teaching sessions are better organised	-	-	10%	22%	68%	-	
I feel junior doctors are more passionate about medical teaching	-	-	6%	29%	65%	-	
I feel junior doctors are more effective at clearly explaining things I previously did not understand	-	6%	1%	45%	48%	-	
I feel junior doctor-led teaching is of overall higher quality	-	7%	10%	36%	47%	-	

more teachers in the clinical environment, and to ensure they have appropriate time and training to provide high-quality teaching in that environment. Non-medical health care staff trained in clinical examination, such as advanced nurse practitioners, may be able to teach medical students, and new settings such as private hospitals could potentially mobilise more patients. However, we have focused this article on the potential role of junior doctors.

Junior doctors as teachers

We ensured that all tutors on the Bedside Teachers programme attended formal teacher training before undertaking any teaching. As part of the quality control for the programme, we felt it important to assess both the value of

the tutorials and students' perceptions of the relative merits of junior doctors as teachers, compared with senior staff.

Our questionnaire covered eight points we deemed to be important parameters of high-quality teaching. Final-year students indicated that they perceived the tutors in this programme to be more approachable, more organised, more trustworthy, more passionate and to cover more relevant material, with clearer explanations, than senior clinicians, with no perceived reduction in the overall quality of teaching. Some areas for improvement, such as perceived junior doctor confidence when teaching, will be addressed in subsequent tutor training days, and will then be re-evaluated. The

literature would also suggest that it may be useful to observe tutors when teaching as a form of quality control, and also to give them more feedback on their teaching to help them improve, and so we intend to pilot this in the coming year.

This study has a number of limitations. The observed differences in teaching delivered by junior compared with senior doctors may partly stem from: (i) the benefits of a training day or (ii) the most able junior doctors self-selecting to participate in the programme. Students also self-selected to attend tutorials, and so might be expected to be more positive about foundation doctor teaching. Questionnaires were filled out immediately after a junior doctor-led tutorial and, although these were anonymised, were collected by the tutor, and so this may also have influenced student responses. Although we can be certain that students did not evaluate the same tutorial twice, we cannot exclude individual students attending and returning feedback from more than one tutorial. All students were given senior doctor-led bedside teaching, but they did not necessarily follow the same structure as our tutorials, and we were not able to evaluate these tutorials immediately afterwards in the same manner as outlined here.

Several theories have been put forward as to why less experienced doctors or peers might be perceived as better teachers by medical students. One is that the reduced psychological and developmental distance between teacher and learner may mean that they are better able to understand each other's difficulties, explanations and language.⁸ Also, near-peer teachers are akin to advanced beginners, and as such might be better in teaching novices using a step-by-step approach, in contrast to experts, who have a more holistic and

Box 1. Free-text comments provided by students in response to the statement: 'Your comments on (i) anything you thought was particularly good and (ii) any improvements that could be made, would be appreciated'

- I enjoy being able to ask questions that may seem silly but that help clarify points
- Good revision for Edinburgh OSCEs [Objective Structured Clinical Examinations]
- Approachable tutors
- Patients with good signs
- Exam-centred teaching method was useful for revision
- Would be better to have more sessions in peripheral hospitals
- Really, really useful
- Very good as clued up in recent exam techniques and OSCE questions
- Excellent teaching, thanks
- Junior doctors understand more what is relevant to finals and starting work
- Session very useful, thank you very much
- Very good session, not intimidated
- The patients had good signs, useful questions asked by examiner

integrated approach.⁹ This is reflected by the majority of the medical students in our study indicating that they thought the teaching delivered by junior doctors seemed to be more relevant to them than the teaching delivered by senior staff. Similar results have been reported in near-peer teaching in both resuscitation and procedural skills, although these studies were in the context of student teachers, and the questions asked were less extensive than the results reported here.¹⁰

We believe that with adequate training, junior doctors could effectively increase the number of bedside teaching tutorials for medical students, with potential benefits over that delivered by senior staff.

REFERENCES

1. De SK, Henke PK, Ailawadi G, Dimick JB, Colletti LM. Attending, house officer, and medical student perceptions about teaching in the third-year medical school general surgery clerkship. *J Am Coll Surg* 2004;**199**:932–942.

2. Guarino CM, Ko CY, Baker LC, Klein DJ, Quiter ES, Escarce JJ. Impact of instructional practices on student satisfaction with attendings' teaching in the inpatient component of internal medicine clerkships. *J Gen Intern Med* 2006;**21**:7–12.
3. La Combe MA. On bedside teaching. *Ann Int Med* 1997;**126**:217–220.
4. Ahmed K, El-Baghir M. What is happening to bedside clinical teaching? *Med Educ*. 2002;**36**:1185–1188.
5. Alam U, Asghar O, Khan SQ, Hayat S, Malik RA. Cardiac auscultation: an essential clinical skill in decline. *British Journal of Cardiology* 2010; **17**:8–10.
6. Rodrigues J, Sengupta A, Mitchell A, Kane C, Kane C, Maxwell S, Cameron H, Ross M, Ford M. The Southeast Scotland Foundation Doctor Teaching Programme—Is "near-peer" teaching feasible, efficacious and sustainable on a regional scale? *Med Teach* 2009;**31**:e51–e57.
7. Qureshi Z, Maxwell S. Has bedside teaching had its day? *Advances in Health Sciences Education* 2012;**17**: 301–304.
8. Vaughn LM, Baker RC. Psychological size and distance: emphasising the interpersonal relationship as a pathway to optimal teaching and learning conditions. *Med Educ* 2004;**38**:1053–1060.
9. Ten Cate O, Durning S. Dimensions and psychology of peer teaching in medical education. *Med Teach* 2007;**29**:546–552.
10. Colaco SM, Chou CL, Hauer KE. Near-peer teaching in a formative clinical skills examination. *Med Educ* 2006;**40**:1129–1130.

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Funding: None.

Conflict of interest: None.

Ethical approval: A project plan was sent to the South-East Scotland Research Ethics Service, who indicated that no formal ethical approval was required.

doi: 10.1111/j.1743-498X.2012.00625.x

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