

Medical Education

Student audit of clinical teaching: a three year study

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Abstract

An audit of teaching to junior clinical students in the University of Birmingham organised by students identified several surgical and medical firms on which they received little clinical teaching. Consultants spent an average of four and a half hours a week teaching junior students on the wards, arrived about 10 minutes late for that teaching, but missed less than 10% of teaching sessions. Junior students missed less than 10% of consultant teaching sessions and found them useful, though not always stimulating.

Audit organised by students is an acceptable method of monitoring the informal teaching received by clinical students.

Introduction

Monitoring the teaching of medical students on the wards by clinical staff is not an easy or obvious task. Clinical teaching is given by various members of hospital staff at different times and often in informal settings. The amount of teaching is not readily measurable and has been little studied, the paper by Wakeford being a notable exception.¹ Clinical students, however, are well aware of differences in the amount and quality of teaching received during different attachments and are quick to make informal comparisons between firms.

The teaching of junior clinical students is important, and initial experiences on the wards probably define attitudes towards medicine for a long time.² As junior clinical students we considered that formal audit of the teaching that students received in the different Birmingham teaching hospitals and firms should be attempted, particularly as the medical school itself had no means of comparing firms, except for examination results and anecdotal reports. Medical audit has three functions: setting professional standards, assessing clinical performance, and modifying clinical practice.³ Surgical experience of regular audit has undoubtedly led to changes in practice.⁴ We thought that the lessons of audit might be applicable to clinical teaching.

At Birmingham University medical students receive their initial clinical teaching from medical and surgical firms, each typically consisting of one or two consultants, their junior staff, a final year student, and several junior students. Students clerk the patients admitted under their consultant and receive clinical instruction based on those patients. Each attachment lasts five months, and students are not allowed to choose firms. Junior teaching takes place in five hospitals: hospitals 1 and 2 are central university hospitals (a

regional hospital on the edge of the university campus, and an older hospital in the middle of the city), and hospitals 3, 4, and 5 are associated teaching hospitals, which are district general hospitals serving the southern, western, and eastern parts of the city.

We used a questionnaire to study the amount of teaching that clinical students received, where it occurred, who on the firm taught the most, and how useful the teaching was, with the aim of identifying firms not fulfilling their teaching role, measuring the variation between firms, and comparing the university hospitals with the three district general hospitals.

Method

The questionnaire was drawn up in 1977 by a group of clinical students who had just completed their first junior clinical attachment, and it thus dealt with those aspects of clinical teaching that junior students thought were important.

During the three years from February 1977 the questionnaire was distributed to the whole junior clinical year at the end of the first five month firm, half the students having completed medical clerking and half surgical dressing. The questionnaire asked about the teaching practices of the firm, the practical experience gained by the student, and the attitudes of that firm towards students. Space was provided for comments, and respondents were assured that all information given would remain strictly confidential. Graded scales appropriate to the questions were provided for questions requiring quantitative responses—for example, the scale for time spent in tutorials ranged from less than one hour to more than six hours a week. For less objective measures four ratings were used; always, usually (that is, more than half the time), sometimes (that is, less than half the time), and rarely or never.

Results for each firm were summed over the three years to minimise bias caused by specific factors operating within only one year. Results were presented to the faculty committees concerned with clinical teaching; the hospitals and firms were not named, although particular firms were identified to the professors of surgery and medicine on request. Each teaching consultant was sent a copy of the survey report and invited to write for a further breakdown of the data on his firm.

Results

Three hundred and twenty five questionnaires were completed, giving an overall response rate of 66%. Results were obtained for 22 medical firms and 16 surgical firms: twenty one students did not state their firm.

Teaching by consultants—Students were asked about teaching in tutorials, at the bedside, and at other sessions (for example, in outpatient departments and at formal case presentations), business ward rounds and teaching in theatre being specifically excluded. Teaching times were similar for medical and surgical firms (table I). On three medical and two surgical firms the consultant did no bedside teaching (physicians at hospitals 1 and 2 and surgeons at hospitals 1 and 4). Over two thirds of surgical consultants gave tutorials compared with only half of physicians. Consultants taught for a mean of four and a half hours a week (table II), although there was considerable variation, some consultants teaching very little and others teaching as much as nine hours a week. Nearly all the physicians in hospitals 3, 4, and 5 taught more than the weekly average, whereas at hospital 1 only one firm exceeded the mean. Two surgical firms with little consultant teaching were identified, one at hospital 4 and one at hospital 5.

Teaching by junior staff—Junior staff taught for an average of 2.2 hours a

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week, ranging from 1.4 to 3.3 hours a week on medical firms and from 0.7 to 4.6 hours a week on surgical firms. On the two firms where junior staff taught most the consultants also taught most, suggesting that junior staff follow the example of consultants rather than teaching more to compensate for less consultant teaching.

TABLE I—Hours per week devoted by consultants to teaching students

	Medicine			Surgery		
	Minimum	Maximum	Mean	Minimum	Maximum	Mean
Bedside	0.5	3.5	1.90	0.5	3.4	1.48
Tutorial	0.5	2.0	0.86	0.5	2.5	1.12
Other	0.5	4.8	1.75	0.5	3.5	1.85
Total	1.6	8.9	4.70	1.5	7.8	4.50

TABLE II—Time spent teaching each week by consultants and junior staff

Teacher	No of firms in which weekly teaching time (in hours) was:												Weekly teaching time (hours)			
	0-1	2	3	4	5	6	7	8	9	10	11	12	13	Mean	SD	SEM
Consultant		2	4	7	10	8	2	3	2					4.75	1.77	0.29
Junior staff	2	13	16	6	1									2.21	0.88	0.14
Consultant + junior staff in each firm			1	1	5	5	5	8	10	1	1	1		6.95	2.19	0.36

Time spent with patients—On average, 71% of students on a firm (range 14-100%) thought that teaching on the firm left enough time to spend with patients. Total teaching time and the proportion of students on a firm who thought that they spent sufficient time with patients were negatively correlated (medical firms $r = -0.397$, $p < 0.01$; surgical firms $r = -0.763$, $p < 0.001$).

Diligence in teaching—Consultants on three medical firms were estimated by most students to have missed more than 10% of teaching sessions (two from hospital 1, one from hospital 5). No consultants missed more than 25% of sessions, and the consultants on 15 firms (nine medical, six surgical) were said not to have missed any teaching. On one surgical firm the consultant was usually more than 20 minutes late for teaching sessions, whereas on 10 firms (five medical, five surgical) the consultant was usually on time. On four firms junior staff were considered to be more reliable than consultants in attending teaching sessions, the converse being reported on five firms. Eleven of three hundred and fifteen students, all from different firms, estimated that they had missed 10-25% of consultant teaching sessions, the rest having missed less. Thirty one students estimated that they had missed 10-25% of junior staff teaching.

Value of teaching—Teaching by consultants was rated in terms of usefulness and stimulation. It was found by 135 (84%) of clerks and 129 (91%) of dressers to be usually or always useful (table III), and by 106 (66%) of clerks and 103 (73%) of dressers to be usually or always stimulating. Teaching on two medical firms (hospital 1) and two surgical firms (hospitals 4 and 5) was not thought to be useful (table IV). Overall, students found consultant teaching useful but less often stimulating. Medical teaching was both least useful and least stimulating at hospital 1, whereas surgical teaching was least useful at hospital 5 and least stimulating at hospital 4. On 13 medical firms and 10 surgical firms most students thought that they learnt more from junior staff than from consultants.

Student feelings about their firm—At the end of their time as a clerk or dresser students rated their feelings on a five point scale; 55 (17%) felt very encouraged; 155 (49%) felt encouraged; 69 (22%) felt the same as before; 30 (9%) were disillusioned; and eight (3%) were very disillusioned. On 11 firms

TABLE III—Consultant teaching evaluated by students on firm for usefulness and stimulation. Figures are numbers of firms

% of students on firm finding teaching always or usually useful or stimulating	Useful		Stimulating	
	Medicine	Surgery	Medicine	Surgery
0-25	1	—	3	1
25-50	1	2	3	3
51-75	4	—	8	2
76-100	16	14	8	10

three quarters or more of the students felt encouraged, and on seven firms under half of the students felt encouraged. There was no correlation between the proportion of students who felt encouraged and the amount of teaching, suggesting that quantity of teaching is not the only factor affecting student response and that general attitudes of qualified staff towards students might also be important.

Discussion

This survey shows that the quality and quantity of teaching received by clinical students can be monitored. We identified five medical and two surgical firms on which students received little teaching. Interestingly, three of those physicians and one of the surgeons subsequently retired, suggesting that student teaching may suffer as retirement approaches.

TABLE IV—Numbers (%) of students at each hospital not finding teaching helpful

Evaluation	Type of firm	Hospital				
		Teaching		Peripheral		
		1	2	3	4	5
Only sometimes or rarely useful	Medicine	15 (40)	6 (17)	1 (4)	1 (3)	4 (14)
	Surgery	2 (4)	—	2 (8)	5 (21)	4 (24)
Only sometimes or rarely stimulating	Medicine	20 (53)	11 (31)	8 (32)	8 (23)	8 (29)
	Surgery	14 (27)	3 (14)	9 (35)	9 (38)	3 (18)

Combinations of features enabled us to identify firms on which teaching was unsatisfactory. On the three medical firms that taught least the consultants missed more than 10% of teaching sessions and had the lowest scores for both stimulation and usefulness, registrars were more reliable and prompt than the consultants, and the students thought they learnt more from junior staff. A similar pattern was observed with surgical firms.

Clinical teaching is only part of the education of medical students, although one of its important functions is to direct students' study. Unless students perceive teaching to be potentially useful, however, they may not benefit from it, whatever its true usefulness.

By writing to us consultants could obtain the data relating to their own firm. All the physicians from hospital 3 and four of the five firms at hospital 1 requested their data, whereas the response was poor from hospitals 2 and 4, with only one out of six physicians at hospital 2 and one firm out of four at hospital 4 asking for their data. Requests were received from three of the five firms at hospital 5. Ten of the 16 surgical firms asked for their data. Consultants who were least enthusiastic in teaching did not ask for their teaching profiles. We received one irate letter from a consultant physician, who was also the only consultant about whom students made specifically derogatory comments. One consultant strongly disagreed with the hours of teaching that his students had credited him with, despite all his students having given him the same rating; presumably their perception of teaching differed from his.

Many students wrote comments, and these reflected the concerns of junior students. Several students expressed uncertainty at going on to the wards for the first time. "I found the first exposure in hospital rather overwhelming, and staff mostly seemed too busy to encourage or help us" (dresser, hospital 1). "I went into surgery

worried and not very happy. I came out having had an enjoyable and instructive time. If all firms were like this there would be no reason for complaint" (dresser, hospital 2). Students were often unsure of what was expected of a junior clinical student. "I feel it took me too long to settle down to the different sort of work in hospital. Thus a month or two at the beginning was lost" (clerk, hospital 4). "It seemed that the firm were unaware of a responsibility to teach us, and we were left to find out things for ourselves most of the time. Only the houseman tried to be helpful" (dresser, hospital 4). "A better indication of what was expected would help" (dresser, hospital 3). Junior students often initially felt lost on the wards, and well defined objectives could alleviate this. Lack of encouragement and feedback was a problem: "For a first clinical firm we weren't encouraged enough to examine and clerk patients, nor were we shown to do this in progressive easy stages" (dresser, hospital 1). "I would have got on a lot better if it had appeared that anyone was bothered about what I did or learnt" (clerk, hospital 2). "Mr X seemed to be concerned about my progress, but this usually took the form of raised voices and sarcastic comments" (dresser, hospital 2). "Although staff and consultants were helpful when approached they were not always approachable" (clerk, hospital 1). "The pleasant, easy going atmosphere which I enjoyed on our firm enhanced teaching or rather learning and should be encouraged" (clerk, hospital 4).

Students often commented about the nature of the teaching. There was an "utter paucity of bedside teaching. Too much emphasis by tutors (when present) on clinical knowledge (often obtuse) and too little on clinical method. Senior staff are (it seems to me) wholly out of touch with the skills and knowledge (or lack of it) of junior students" (clerk, hospital 1). "I felt very unsure in the history taking and examination of patients as no one had ever explained the basic skills involved to me" (dresser, hospital 2). The clear message of these comments is that junior clinical students appreciate teaching of basic skills and need encouragement as they acquire those skills. Light suggested that learning practical techniques is one way in which medical students control the anxieties generated by the complexity of clinical practice.⁴

Central university hospitals are not necessarily seen as the best place for clinical teaching. The most enthusiastic, useful, and stimulating teaching took place in the district general hospitals. The

five lowest ranking medical firms were at the two central hospitals and the two lowest ranking surgical firms at district general hospitals, confirming the opinion of many students that the best and the worst teaching takes place in the district general hospitals, where there is least professorial guidance and informal monitoring. Central hospitals were seen as presenting a biased range of medical and surgical cases reflecting the consultants' particular interests rather than typical hospital cases. This survey, however, concentrated solely on teaching given to junior clerks and dressers; firms with interests too narrow for junior students might possibly be more suitable for senior student attachments.

Monitoring of undergraduate clinical teaching should be done continually to maintain quality and identify firms that are losing enthusiasm for teaching. Student feedback can form the basis of a workable system of audit. In Birmingham this system was developed by students keen to contribute actively towards shaping their own education. As these students passed through the medical school, however, the system stopped operating despite hopes that it might be maintained as a permanent feature. We suggest that such a regular system of audit could help considerably to improve standards of undergraduate clinical teaching.

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