

Surgical dressers: the theatre experience of junior clinical students

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Summary. The teaching of junior surgical dressers in theatre and on the wards was audited in a survey organized by students over a 3-year period. The average dresser in Birmingham, England spent 5½ hours per week in theatre and was scrubbed for more than half of that time. Most students found their time in theatre both instructive and enjoyable. No major differences in teaching practices were found between teaching and peripheral hospitals.

Key words: *Clinical clerkship; Surgery/*educ; Operating rooms; Attitude of health personnel; England

Introduction

The early experiences of clinical students have been little described, be they as medical clerks or surgical dressers (a term whose first recorded use was at St Thomas' Hospital, London in 1747). It seems likely that these experiences may have an important and long-lasting influence. Students and teachers seem to accept that teaching and experience vary between hospitals and firms. As students we were concerned that a more formal audit of clinical teaching should be attempted, in order to discover just how great such variation was, and to identify areas of deficiency which might be remedied.

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Teaching of first-year clinical students in Birmingham, England takes place in five hospitals, two of which are established teaching hospitals, one on the edge of the university campus, and the other in the city centre; the others are district general hospitals serving the southern, western and eastern areas of the city. The clinical course starts with a one-month introductory course in general medicine and is followed by two 5-month attachments in general medicine and in general surgery, half the students starting with medicine and half with surgery.

Students are allocated in groups of three or four to firms usually consisting of one or two consultants and their junior staff, and receive teaching based around the patients of that firm.

For 3 successive years students were asked to complete a questionnaire about clinical teaching at the end of their first long clinical attachment. The main foci of the study were teaching by clinicians, and students' opportunities for practical experience during their attachment. This paper concentrates on the practical experience gained by junior surgical dressers, other aspects being reported elsewhere (Lockwood *et al.* 1985, 1986).

Method

The questionnaire was drawn up in 1977 by a group of clinical students who had just finished their first junior clinical attachment and so it reflected those aspects of clinical teaching that junior students felt were important. The first

clinical year at Birmingham University Medical School starts with a month-long clinical introductory course. This is followed by two 5-month-long attachments, one in medicine and the other in surgery. Each attachment is usually with a single firm at one hospital. The student spends each morning with the firm and returns to the medical school in the afternoon for lectures. Students cannot choose their particular attachments.

For 3 consecutive years from February 1977 to 1979 the questionnaire was distributed to the whole junior clinical year as soon as their first 5-month firm had been completed. Thus half the students surveyed had just completed junior firms ('clerking') and the other half had completed junior surgical firms ('dressing').

The questionnaire asked about the teaching practices of the firm, the practical experience gained by the student and the attitudes towards students of that firm. Respondents, who could choose to remain anonymous, were asked to indicate the specialty they had just completed and to indicate which hospital and firm they had been attached to. Space was provided for comments which were freely invited on any aspect of junior clerking and dressing. Respondents were assured that all information given would remain strictly confidential.

Graded scales were provided for questions requiring quantitative responses, the scale being constructed appropriately for each parameter, e.g. 'the time in theatre scale' ranged from 0-3 hours/week to >12 hours/week.

For many items a 4-point scale was used; 'Always', 'Usually (i.e. more than half the time)', 'Sometimes (i.e. less than half the time)', and 'Rarely or Never'.

The data about each firm have been summed over the 3-year period in order to minimize bias resulting from specific factors operating only in one year. The results of the survey were presented to the Clinical Practices Committee of the medical school. The five hospitals were numbered 1 to 5, hospitals 1 and 2 being teaching hospitals, and hospitals 3, 4 and 5 'peripheral' hospitals. No individual firms were named in the presentation. Each teaching consultant was sent a copy of the survey report and could observe the results relating to his firm from the survey organizers.

Results

A total of 325 questionnaires were completed, giving an overall response rate of 66%. Results were obtained for 16 surgical firms, from two to five firms at each of the five hospitals.

Time in theatre

On the basis of students' estimates of time spent in theatre each week, a mean value was calculated for each firm (Fig. 1), these values ranging from 2.6 to 8.8 hours per week with a mean of 5.35 hours per week.

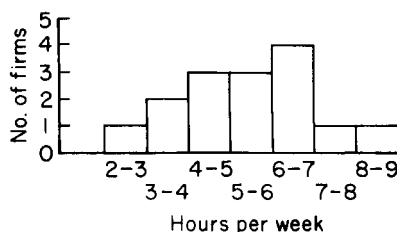


Figure 1. Hours per week spent in theatre by junior dressers on all teaching firms.

Theatre experience

Scrubbing for operations. Students used a 4-point scale to rate how often they were scrubbed up in theatre. Figure 2 shows the percentage of students on each firm who were scrubbed up for at least half their time in theatre (i.e. 'Always' or 'Usually'), and Table 1 shows the mean percentages on the firms of the five hospitals. The mean percentage for all firms was 51.4%, with a wide variation from 16.7% on a firm at hospital 5 to 100% on a firm at hospital 1. The relationship between the mean time spent in theatre for each firm and the percentage of students on a firm who felt that they had sufficient time to learn basic clinical skills (Fig. 3), shows a significant negative correlation (Pearson's $r = -0.607$, $P < 0.01$), suggesting that when students are spending 6 or more hours per week in theatre then the time left for learning basic clinical skills starts to be seriously reduced.

Taking part in theatre work. A total of 43.1% of students felt they were encouraged to play an active part in theatre (e.g. suturing after

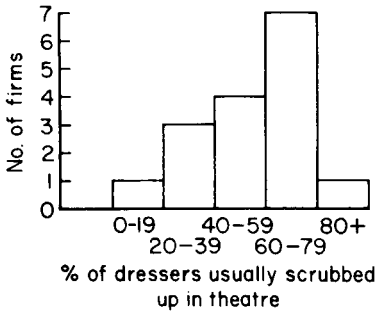


Figure 2. Number of firms on which particular proportions of students were scrubbed for more than half their time in theatre.

operations), the percentage varying between hospitals (Table 1), and showing a wide variation between firms, from 90% on one firm to none on another firm.

Instruction in theatre. Students rated the educational value of time in theatre on the 4-point scale. Table 1 shows the percentages of students at each hospital finding at least half their time in theatre instructive. The teaching on each firm shows a wide variation; on one peripheral hospital firm none of the students found their time in theatre 'usually' instructive, while on another peripheral hospital firm 71.5% of students felt their time in theatre was 'usually' instructive.

Enjoyment of time in theatre. Rating of enjoyment of time spent in theatre was also done on a 4-point scale. A total of 77% of dressers enjoyed more than half their time in theatre (Table 1), with a wide inter-firm variation, the lowest firm rating 42.9% (hospital 4) and the

highest rating 100% (hospital 5). Only five respondents rarely or never enjoyed their time in theatre. Of these five students, three were attached to hospital 1 and two to hospital 2.

It is noticeable that in all cases students found their time in theatre more enjoyable than instructive, suggesting they made a clear distinction between these two parameters. There is a clear correlation between numbers of students on each firm feeling that they played an active part in theatre and their enjoyment of time in theatre (Pearson's $r=0.511$, $P<0.05$).

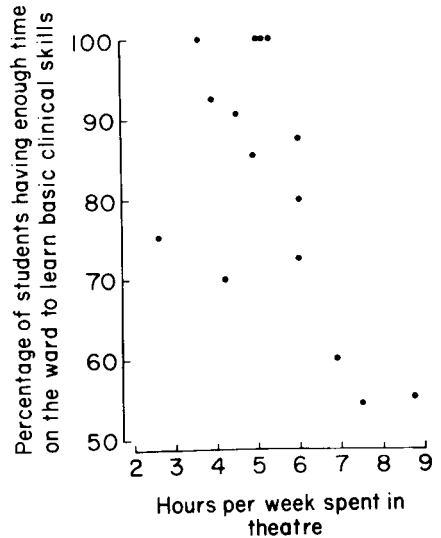


Figure 3. Percentage of students on each firm having sufficient time to learn basic clinical skills (ordinate) as a function of average hours per weeks spent in theatre (abscissa).

Table 1. Theatre experience of junior dressers; 'usually' refers to the sum of both 'usually' and 'always' response categories

	Hospital				
	Teaching		Peripheral		
Percentage students	1	2	3	4	5
Usually scrubbed in theatre	63.4	56.5	57.7	50.0	29.4
Usually encouraged to play an active part in theatre work	27.5	57.1	61.5	30.4	58.8
Usually finding time in theatre instructive	59.6	35.2	53.8	54.2	29.4
Usually finding time in theatre enjoyable	77.0	87.0	80.7	66.7	76.4

Table 2. Percentages of students at each hospital who had never or only once seen ten common operations

Operation	Never seen					Seen once only				
	Hospital					Hospital				
	Teaching		Peripheral			Teaching		Peripheral		
	1	2	3	4	5	1	2	3	4	5
Stripping varicose veins	18.5	38.5	46.7	6.7	45.5	25.9	15.4	13.3	20.0	27.3
Amputation	33.3	23.1	60.0	33.3	36.4	37.0	15.4	13.3	46.7	45.5
Hernia repair	37.7	0	0	0	0	7.4	0	0	0	27.3
Large bowel resection	25.9	0	0	0	0	14.8	7.7	13.3	13.3	0
Prostatectomy	51.9	61.5	13.3	13.3	9.1	11.1	0	20.0	20.0	18.2
Cholecystectomy	37.7	0	0	0	0	29.6	0	26.7	0	0
Gastrectomy or V&P	14.8	0	0	13.3	9.1	29.6	7.7	26.7	13.3	0
Mastectomy	7.4	0	13.3	13.3	18.2	25.9	0	20.0	6.7	18.2
Appendicectomy	29.6	0	0	0	0	14.8	7.7	0	0	0
Thyroidectomy	51.9	46.2	13.3	26.7	18.2	22.2	15.4	40.0	6.7	27.3

This suggests that students enjoy doing something in theatre other than just being scrubbed up and perhaps retracting the liver during a long cholecystectomy.

The instructiveness of time in theatre did not correlate with time spent in theatre or with whether students played an active part in theatre.

At hospital 5 the lowest percentage of students were scrubbed in theatre—only five of the 17 students there had 'usually' been scrubbed. Students there also found their time in theatre least instructive when compared with the other hospitals. On one firm none of the students felt that their time in theatre was usually instructive.

Hospital 1 scored a very low rating for the percentage of students playing an active part in theatre.

Students at hospital 4 also felt that they were not encouraged to play an active part in theatre—on one firm none of the students had felt encouraged to be active in theatre.

Operations seen

Dressers indicated on a 4-point scale how often they had seen ten common operations. Table 2 lists the operations and shows the percentages of dressers at each hospital who had seen operations once only or never. Hospital 1 stands out in that each operation had been rarely seen by a number of students, and it was the only centre where some dressers never saw large bowel resection. Eight students at hospital 1 had only seen one cholecystectomy, whereas all the dressers at other hospitals

Table 3. Percentages of students at each hospital who had seen various operations more than four times

Operation	Hospital				
	Teaching		Peripheral		
	1	2	3	4	5
Stripping varicose veins	14.8	23.1	33.3	20.1	18.2
Amputation	3.7	15.4	13.3	0.0	9.1
Hernia repair	51.9	92.3	73.3	93.3	54.5
Large bowel resection	22.2	76.9	46.7	53.3	63.6
Prostatectomy	11.1	38.5	46.7	33.3	45.5
Cholecystectomy	18.5	100.0	60.0	73.3	72.2
Gastrectomy or V&P	11.1	61.5	26.7	20.0	27.3
Mastectomy	33.3	84.6	40.0	46.7	18.2
Appendicectomy	7.4	76.9	86.7	100.0	100.0
Thyroidectomy	3.7	15.4	6.7	46.7	18.2

had seen at least two cholecystectomies. Almost a third of all junior dressers had not seen operative stripping of varicose veins, and 10% of dressers never saw a mastectomy. Hospital 2 is the only centre where all dressers had seen at least two mastectomies.

Relatively few dressers at hospitals 1 and 2 had seen a prostatectomy. The dressers at other hospitals had a urology attachment while on their general surgical firm and thus saw urological surgery.

Table 3 gives the percentages of students at each hospital seeing operations more than four times. Dressers at hospitals 2 and 4 are more likely to have seen more than four herniorrhaphies. Students at hospital 2 saw more large bowel resections and mastectomies. Hospital 1 is the only hospital where the majority of students have not seen more than four cholecystectomies or appendicectomies.

Consultants from nine firms requested the data about their firm. No requests for data were received from consultants of firms on which the majority of students did not find their time in theatre enjoyable or instructive.

Discussion

Differences in teaching practices between firms can readily be demonstrated. In particular, it was possible to identify two firms where students spent so much time in theatre that they had insufficient time left to learn the basic surgical skills of examination and diagnosis (hospitals 1 and 2), and two firms where students received little instruction and did not enjoy their time in theatre (hospitals 4 and 5). The consultants on the last two firms were also identified as teaching considerably less than most consultants.

Although the degree to which junior dressers can play an active part in theatre is debatable, some consultants nevertheless make their dressers feel that they are contributing in theatre: 'We were encouraged to do procedures on our own and to assist as much as possible—the best way to learn' (hospital 2), which contrasts with a dresser on another firm who felt 'After 5 months on a surgical firm I came away with the impression that the most useful thing I have

performed is taking blood and holding a retractor at operations which consumed a large proportion of my time!' (hospital 2).

Theatre can be a good opportunity for junior students to learn simple procedures and several students commented that they had not been encouraged in this aspect. 'Rarely did anyone ask whether or not we would like to learn how to put up a drip or to catheterize a patient,' (hospital 1). 'We were not taught any practical skills, i.e. no suturing or putting up of drips' (hospital 5). This contrasts with a report that 99% of American dressers are doing simple suturing at the end of their surgical clerkship. However, Canadian investigators have also found that students may receive relatively little experience in some important techniques, and recommended that instruction in technical procedures should be carried out on a planned basis (Linn & Zeppa 1982). Several students noted a general lack of encouragement and involvement of junior dressers in the clerking and management of patients: 'Very much made to feel inessential and at times an embarrassment to the running of the firm' (hospital 1).

Some respondents commented on the length of the time spent in theatre: 'too much time was wasted with too many people in theatre, not able to see anything' (hospital 1) and 'operations on peripheral vascular disease take a long time. There was little teaching in theatre' (hospital 3). However, nobody commented that time in theatre was unnecessary, and students appreciate the value of seeing 'living pathology' in theatre; 'theatre experience, although perhaps not going to get one through the exam, was useful in that one really gets an idea of what surgery was about' (hospital 3). Students do not resent time spent in theatre, particularly if they feel it is instructive.

Wakeford (1983) has noted that Cambridge dressers on peripheral hospital firms spend more time in theatre and play a more active role in theatre work. Our data fail to confirm this, the variation between hospitals being relatively small compared with the total variation between firms.

Several students commented on the narrow range of conditions and operations they had seen; 'although we saw plenty of prostatectomies and cystoscopies, I didn't see a thyroid

case until 4 days before the exam and we didn't see any vascular cases' (hospital 4). Each firm obviously has its own specialized interest but this could be compensated for by rotating students more frequently.

Because the casualty department at hospital 1 was not busy students saw little emergency surgery, reflected in the fact that 45% of students had seen one appendicectomy at most.

Student audit is helpful in identifying firms on which the consultant is not taking an active teaching role, and illuminates areas in which students feel they are not receiving adequate instruction. Regular audit can also lead to changes in teaching practices; Lazaro *et al.* (1978) reported an increase in the number of dressers given the opportunity to drain abscesses and manage chest tubes during a 3-year prospective study.

Undergraduate teaching constitutes just one of a number of commitments for teaching hospital staff, and hence objective analysis of the content and quality of teaching and of teaching methods is not always easy. Such analysis is essential, however, if clinical teaching is to achieve its aims and remain appropriate to students' needs. We feel that student audit of clinical teaching has an important part to play in such analysis.

We have shown that a workable system for such audit can easily be devised and put into operation. We would suggest that the use of such a system on a regular basis could help to improve standards of undergraduate clinical teaching.

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