

# Operative Notes Teaching: Re-Discovery Of An Effective Teaching Tool In Surgical Training

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## Abstract

Operative notes in surgery have been a matter of debate in the UK for their quality, medical, legal and economic implications. After publishing the updated "Guidelines for clinicians on medical records and notes" (RCSEng 1994), there have been at least four reports on the critical quality of operative notes in the UK, but the reasons for this lack of quality have never been discussed. There is no literature available about teaching operative notes in the UK. The majority of operative notes in the UK are still handwritten. Operative notes can be regarded as an important source for the training process in surgery. Writing an operative note is a core skill in surgery as it is important for postoperative management as well as follow up. Handwritten operative notes can hardly be used for management and financial decisions as statistical workup of handwritten notes is time consuming and inaccurate. As published guidelines have been used to improve quality of writing operative notes, we asked if the writing of operative notes is taught at any stage of surgical training in the UK. Moreover we asked if the published guidelines are being used and about attitudes towards computer - assisted standardization of operative notes.

## INTRODUCTION

Operative notes in surgery have been a matter of debate in the UK for their quality, medical, legal and economic implications. After publishing the updated "Guidelines for clinicians on medical records and notes" (RCSEng 1994), there have been at least four reports on the critical quality of operative notes in the UK, but the reasons for this lack of quality have never been discussed. There is no literature available about teaching operative notes in the UK. The majority of operative notes in the UK are still handwritten. Operative notes can be regarded as an important source for the training process in surgery. Writing an operative note is a core skill in surgery as it is important for postoperative management as well as follow up. Handwritten operative notes can hardly be used for management and financial decisions as statistical workup of handwritten notes is time consuming and inaccurate. As published guidelines have been used to improve quality of writing operative notes, we asked if the writing of operative notes is taught at any stage of surgical training in the UK. Moreover we asked if the published guidelines are being used and about attitudes towards computer - assisted standardization of operative notes.

## METHODS

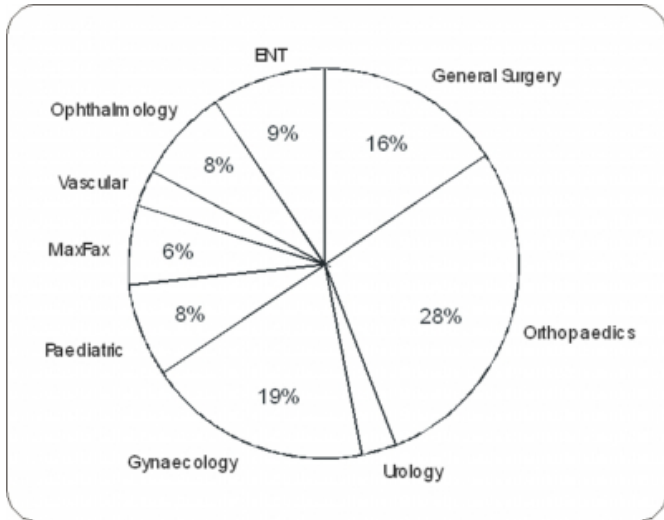
To explore the field of teaching operative notes we created a medium-length, paper-based questionnaire with 16 items [1]. The questionnaire was implemented in an audit project. As a template we used a questionnaire which was published by Moore et al. in 2000 [2]. We asked about subspecialty, training grade and gender. The questionnaire consisted of five rating scale questions (agree strongly, agree, neutral, disagree, strongly disagree), five dichotomous questions (yes/no), two multiple-choice questions and one open-end question. The questionnaire was distributed at Brighton and Sussex University Hospital surgical departments through the subspecialty tutors between April and June 2005.

## RESULTS

We sent out 120 questionnaires to the surgical tutors in the main surgical specialties. Response rate to the questionnaire was 53 % (N=64). There are 209 surgeons in all grades at BSUH. Answers from subspecialties were distributed as shown in the pie-diagram (Fig.1). 73 % of questionnaires were answered by male and 27% by female surgical doctors. Questionnaires were filled in by 23 SHO's (senior house officer), 19 registrars and 21 consultants (Fig.2, one missing). To simplify results, attitudes have been summarized for "agree strongly" + "agree" and "disagree" + "disagree strongly".

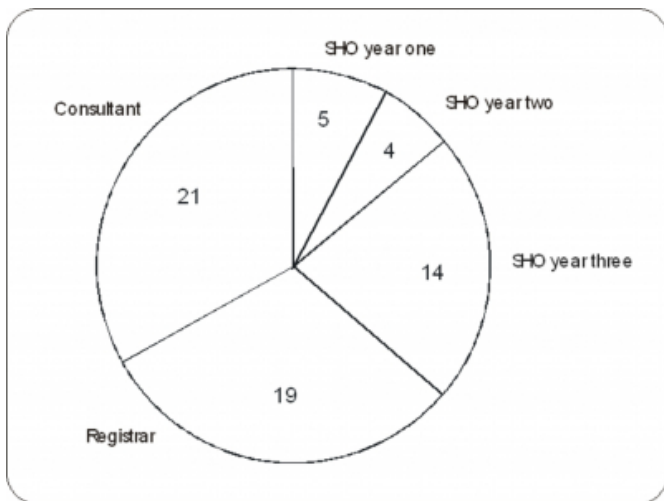
**Figure 1**

Figure 1: Response to the questionnaire, % surgical subspecialties



**Figure 2**

Figure 2: Response to the questionnaire, surgical training grades, total numbers



**WRITING AND TEACHING OPERATIVE NOTES**

Asked about handwriting or typing the operative note surgical doctors decided to do both. 45.3 % ( “strongly agree” + “agree” ) said the operative note should be handwritten, whereas 20.4 % thought handwriting was inappropriate. 54.7 % of doctors favoured typed operative notes and only 4.7 % found typed operative notes not useful (Fig.3). Comparing trainers (consultants) with trainees (SHO, Registrar), the latter did express less preference for either handwriting or typed operative notes (table 1). Asked about the importance of teaching the “how-to-write” an operative note, 93.7 % of surgical doctors agreed that teaching the operative notes is important and 64.1 % thought

that “learning-by-doing” is an inappropriate way of achieving high quality operative notes (Fig.4). Trainers and trainees shared this opinion but trainees emphasized more that writing the operative note is not a “learning-by-doing” issue (table 1). This view was contrasted by 76.6 % of doctors having never been formally instructed in writing an operative note, 54.7 % having been instructed by a senior trainee and 48.4 % have read operative notes from colleagues to get an impression of the “how-to” (Fig.5 and 6). Formal instruction occurred in three cases at medical school, in 17 cases in the postgraduate situation and in two cases at medical school and in the postgraduate situation. 57.8 % stated that they had been introduced to writing operative notes by their consultant colleagues, whereas one third ( 31.3 % ) indicated that training through consultants in writing operative notes did not take place (Fig.6). Interestingly trainers were themselves not convinced that they introduce their trainees into writing operative notes ( 61 % vs. 52 %, table 1). 70.3 % have never been counselled on syntax and legal issues of operative notes. 51.6 % of trainers and trainees were using the systematic approach in writing an operative note as proposed in the guidelines of the Royal College of Surgeons (Fig.5 and table 1). Asked about the need for computer assisted standardization of operative notes, 50.0 % of the surgeons approved this need and 34.4 % thought that there is no need for this. Similarly 54.7 % thought that operative notes should be standardized so that they could be fed into a national database for statistical evaluation, whereas 28.1 % did not feel the need for doing so (Fig 7). On both questions trainees were more in favour of computer assistance and standardization than trainers ( 60 % and 67 % vs. 29%, table 1).

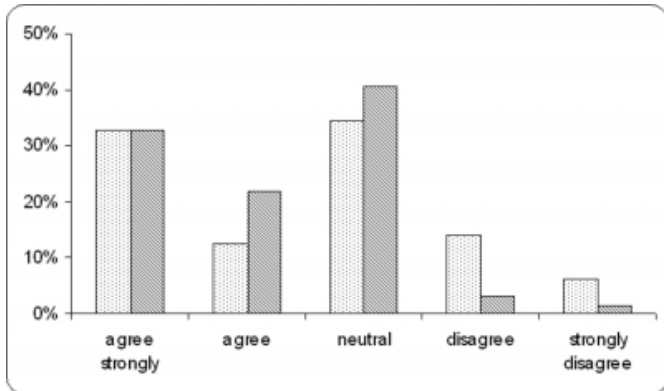
**Figure 3**

Table 1

	trainee	trainer
operative note should be handwritten	41%	57%
operative note should be typed	54%	57%
operative note teaching important	95%	91%
not learning-by-doing	67%	58%
consultants introduce	61%	52%
systematic pattern	51%	52%
computer assistance	60%	29%
standardization	67%	29%

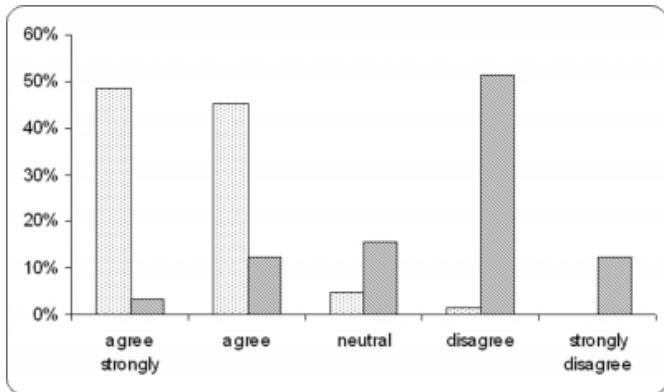
**Figure 4**

Figure 3: Op note should be handwritten (1 bar) , should be typed (2 bar)



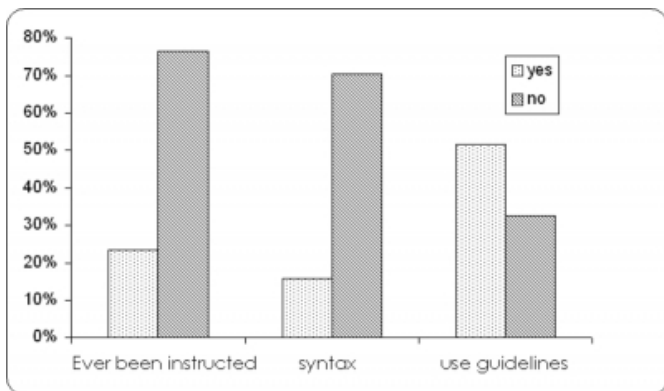
**Figure 5**

Figure 4: Op note teaching is important (1 bar) , op note writing is learning-by-doing (2 bar)



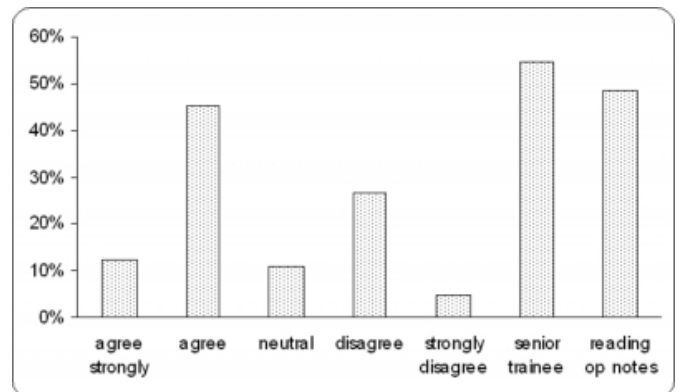
**Figure 6**

Figure 5: Have you ever been formally instructed on how to write an operative note (eg lecture, seminar, course, part of curriculum)? Has anyone ever counselled you on the syntax to be avoided that could be misinterpreted by nonmedical reviewers? On handwriting an operative note, do you follow a systematic pattern as suggested by the guidelines of the Royal College of Surgeons of England?



**Figure 7**

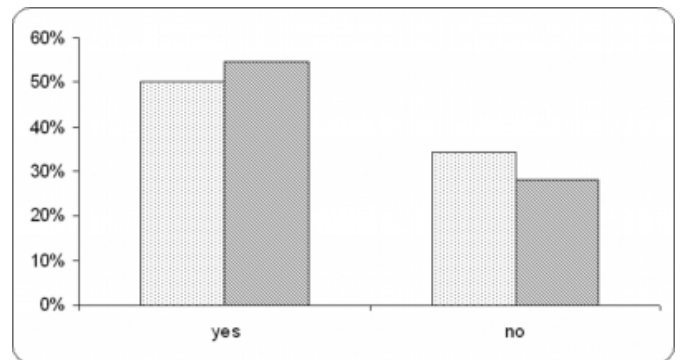
Figure 6: Do Registrars or Consultants actively instruct trainees in writing an operative note? Do you get experience through senior trainees or reading operative notes?



The final open question about technique to be used in the future for documentation of surgical procedures included voice recognition systems in 5 cases (General Surgery, Orthopaedics, ENT, MaxFax). Appropriate local or nationally standardized software, templates, proformas, touch screens and pocket personal computers were named by 25 surgeons.

**Figure 8**

Figure 7: Do you think there is a need for computer assisted standardization of operative notes? (1 bar). Operation notes should be standardized and equal throughout a country so they can be fed into a national database? (2 bar).



**DISCUSSION**  
**THE OPERATIVE NOTE TEACHING**

Operative note teaching has rarely been investigated and mentioned in the medical literature [2,3], and it is even more rarely expressed as a surgical core skill which needs to be trained. This is surprising given the available literature about the quality problems with operative notes [4,5,6,7,8]. Moreover there is no written evidence that operative notes are actively regarded as an efficient tool for teaching and sharing experience. Indeed writing the operative note is often a very

private act, which is not discussed with assistants and not used to reflect the surgical procedure in a team approach.

The majority of questionnaires was obtained from junior and senior trainees ( SHO and Registrar ). Even though surgeons showed positive attitudes towards handwriting operative notes as well as typed notes, a small majority of 54.7% favoured computer assisted typing of operative notes. This picture is underlined by 20.4 percent of surgeons believing handwritten operative notes are inappropriate, whereas only 4.7 % think so for typed operative notes. A sharp contrast emerged from the opinion of teaching operative notes. 93.7 % think that teaching the operative note is important but 76.7 % have never been formally instructed and one third ( 31.3% ) indicated that they are not introduced and instructed on the “how-to-write” operative notes by consultant colleagues. The trainers are also not convinced that they really train their younger colleagues in operative notes writing. Together this could be one of the significant reasons for the critical quality of operative notes in the UK. The traditional way of teaching in surgery is assisting and learning-by-doing. The surgical colleagues stated in approximately 50 % that they were instructed by senior colleagues or reading operative notes. Even though 64.1 % stated that learning of “how-to-write” is not a learning-by-doing process, indicating the need for formally structured teaching. This is obviously tightly connected to the training of surgical procedures itself.

A high percentage ( 70 %) was never counselled on syntax and legal issues of operative notes, reflecting the low incidence of surgeons being sued for mistakes in the UK, compared with the United States. With the emerging private sector the need for training on syntax might change.

Despite the vast amount of hospital guidelines it was surprising to us, that more than half of the surgeons were familiar with the guidelines of the RCSEng from 1994 and used them for a systematic approach.

According to the available literature teaching operative notes was not an official issue in medical education in the UK. The teaching of operative notes must be viewed from a general and from a specific point. The general issue is that as long as the majority of hospitals doesn't use a computer based standard for operative notes, the distribution of the RCSEng guidelines must be a matter of PRHO and SHO induction days in hospitals. The specific teaching of operative notes writing can only be taught by senior colleagues and consultants, but as long as exact and true documentation of

the intraoperative findings is not highly appreciated and operative notes are regarded as a valuable source for reflecting own practice and teaching, a change is not in sight. Indeed the operative note is a cornerstone for the junior trainee regarding the training and learning process. A way towards effective use of this powerful traditional teaching tool might be the use of computer based standardized forms, where the trainer as well as the trainee can gather points for validating their position or their training. Moreover there could be specific rewards for detailed operative notes – with “every click a penny”. As sophisticated software already exists, there is often the problem of working through the menus on the screen. To encourage surgeons to fill in an appropriate amount of information, the use of “click – rewards” would enhance effectiveness of the computer assisted operative note. Detailed operative notes are the core for training, validation and economic questions [9].

The quality of handwritten operative notes is dependent on teaching as shown by Eichholz et al. in their report. Half an hour of teaching solved the problems with structural approach of handwritten operative notes in their unit [3]. A handout of the RCSEng guidelines on induction for junior doctors days should be standard.

### **IT USE AND STANDARDIZATION**

The use of standardized forms and the use of information technology (IT) for operative notes have both been shown to be effective and safe [10,11,12]. Currently the NHS is introducing a major IT programme for connecting general practitioners to hospitals. Most NHS hospitals provide an information technology system in their operating department, but still the use of proformas or computer based operative notes isn't standard in the UK. In terms of teaching, the simple readability of operative notes is naturally an important issue. In their report on operative notes quality Baigrie et al. found that 70 % of notes written by consultants were “illegible or the procedure could not be understood from the description given, by the nurse or junior doctor collecting the data” [5]. In response to the questionnaire the majority of surgeons expressed the need for the use of information technology to produce an operative note and interestingly also a definitive majority voted for a national database for surgical procedures (Fig.7). National databases already exist in the UK in orthopaedic surgery for joint and hip replacement ( National Joint Registry, [www.njrcentre.org.uk](http://www.njrcentre.org.uk) ). Proposed technologies which could be used in the future included voice recognition systems, standardized software and illustration modes for

operative notes. Problems with notes in theatres do not only exist in surgery but also on the anaesthetic site with similar problems of incomplete and inaccurate documentation [13,14]. Thus the future is most likely the joint use of information technology of staff using the operating department.

### CONCLUSION

Operative notes have traditionally a central role in management of the patient and education of future surgeons. This is not reflected by the actual standards in training and clinical use despite guidelines. Recognizing the value of operative notes and promoting a culture to use these notes as a tool for training can help in modernization of surgical services. The use of information technology for operative notes could help to consolidate the trainer – trainee relationship and influence validation of surgical position in the future. The big gap between the need for teaching and training and the actual teaching that happened in reality might reflect how present the trainees really are in the mind of their trainers. This also reflects how the trainer – trainee relationship is setup from a formal and structural point of view. To enhance the use of operative notes for teaching purposes, a first step is simply to introduce a formal teaching step into the training programme of junior doctors. This could be a thirty minutes teaching unit as shown by Eichholz et al. but could be even shorter. Promoting the culture of accurate reports will inevitably lead to the future use of computer standardized operative notes. Today the available software for operative notes doesn't incorporate teaching features. This should be an issue for the Royal Colleges, making the training of future surgeons more effective.

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