REVIEW ARTICLE

# IMPORTANCE OF EFFICIENT OPERATION NOTE WRITING: REVIEW OF GUIDANCE

**Muhammad Umar Younis**

**Mediclinic City Hospital Dubai, Mohammed Bin Rashid University of Medicine and Health Sciences-United Arab Emirates**

**Background:** Operative notes are the most important account of a surgical procedure containing all details that may have been encountered during the surgery. **Summary:** Below par quality of these notes remains a challenge for the healthcare system and guidelines from the Royal College of Surgeons should be made use of to ensure efficient recording. Operative notes need to be legible with clear and concise instructions for the nursing staff for postoperative care. **Key messages:** Relevant details of surgery, additional procedures and complications should be thoroughly documented as well to avoid losses in terms of financial remuneration and for medicolegal purposes. Residents in training should be taught about their importance and inclusion in surgical curriculum should be sought.

**Keywords**: Documentation; Guidance; Note writing; Operation note; Surgery

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## INTRODUCTION

Operative notes are the only complete account of a surgical procedure and comprise of all the details that may have been encountered during the performance of the surgery. There is no dispute regarding the legality and importance of such a medical document in terms of providing optimal patient care and promoting patient safety[1,2], however, the contents of the notes may have implications in terms of litigation and settling legal disputes. Further to this, they are important as an instrument for audit and research, quality assurance as well as medical coding and billing.[3]

Below par quality of these notes remains a concern for the healthcare system and a search of literature confirms the same necessitating a need for improvement and training. Operative notes need to be legible with clear and concise instructions for the nursing staff for postoperative care and only standardized medical abbreviations should be used to avoid confusion. Relevant details of surgery, additional procedures and complications should be thoroughly documented to avoid losses in terms of financial remuneration and for defence during a lawsuit.

## PREVALENT GUIDANCE

The General Medical Council has maintained the importance of accurate note keeping and considers it a fundamental part of good medical practice.[4] The Royal College of Surgeons has established guidelines to provide guidance and support for maintaining and safe keeping of medical records including operative notes which were published in 1990 with modifications in 1994.[5] The document encourages practitioners to register the details of the operation immediately after surgery which should include:

a. The name of the surgeon(s) and the name of the responsible consultant.
b. The diagnosis and the surgical procedure performed.
c. Description of operative findings.
d. Details of tissue removed, altered or added.
e. Details of serial numbers of prosthetics used.
f. Details of sutures used.
g. Accurate description of any difficulties or complications encountered and how these were overcome.
h. Postoperative instructions.
i. Surgeon's signature.

The Good Surgical Practice published by the Royal College of Surgeons aims to set the standards for achieving high quality surgical care.[6] It has been written with and endorsed by the surgical associations of Britain and has an emphasis on patient safety and effective teamwork. It advocates that the operative notes be clear and preferably typed for every procedure and should accompany the patient into the recovery room and to the ward. They should contain ample information to enable continuity of care by another doctor. The updated guidelines also include new variables which were deemed necessary in order to be able to address the prevailing issues surrounding audit, medicolegal and financing affairs and should include the following:

a. Date and time.
b. Elective/Emergency procedure.
c. Names of the operating surgeon and assistants.
d. Name of the theatre anaesthetist.
e. Operative procedure carried out.
f. Incision.

g. Operative diagnosis.
h. Operative findings.
i. Any problems/complications encountered.
j. Any extra procedure performed and the reason why it was performed.
k. Details of tissue removed, added or altered.
l. Identification of any prosthesis used, including the serial numbers of prostheses and other implanted materials.
m. Details of closure technique.
n. Anticipated blood loss.
o. Antibiotic prophylaxis (where applicable).
p. DVT prophylaxis (where applicable).
q. Detailed postoperative instructions.
r. Signature.

## CURRENT STANDARDS OF PRACTICE

Operative notes recording has become more practicable in recent times as healthcare systems around the world have become more coordinated and equipped to handle greater number of surgery cases, emergency or elective. Despite its importance, these notes have been shown to be of poor quality in many research papers and show a need for improvement.[7] Traditionally, operative notes were handwritten and audits of these notes often indicate missing key data, for example, Dukic *et al* found 22% missing patient's name as an identifier, 17% missed the operation name and 24% were just illegible.[8] Introduction of simple measures like using an aide-memoire[9] that systematically served as text reminders, have demonstrated improvements in records. In light of these reports, it has been recommended that word processors be utilized to ensure legibility as well as better quality.

A prospective observational analysis carried out at Pakistan Institute of Medical Sciences Teaching Hospital which assessed operative notes against guidelines from Good Surgical Practice by the Royal College of Surgeons.[6] A total of 167 notes were reviewed and results revealed none of the notes carried either the patient registration number or the time duration of surgery and did not describe whether the case was elective or emergency. The name of the operating surgeon was present in all (100%) while the mention of anaesthetist was in 95% of records and operating assistant was mentioned only in 50%. The procedure conducted was cited in 95% of notes, operative diagnosis in 89.2%, operative findings in 66.7% and details of closure technique in 56.7% of cases. Post-operative instructions were appropriately written with 97% describing antibiotics and analgesia. The study determined operation time, type of surgery, operative diagnosis and findings, complications and postoperative instructions to be the key areas that needed optimization and improvement.[10]

Legible language has to be employed to ensure efficient record keeping and communication between medical staff. Handwritten or narrated notes tend to cause mistakes in interpretation and postoperative care and follow up[11] which has led to the proposition of replacing them with computerized notes using word processors. Studies have shown them to be better in all aspects and readable with the advantage of collected data being available for analysis and audits.[12]

Template operative notes are better than traditional ones as studied by Fareed *et al*[13] and having a dedicated computer in the operating suite may further guarantee completeness with the use of synoptic reports. Synoptic reports provide operation templates that allow standardized recording from a series of predefined surgical options which are agreed upon by a group of surgeons.[14] These notes are currently successfully being applied in various disciplines of surgery. Gur *et al* efficiently made use of it in their cohort of breast cancer patients and found them to be 94.7% complete as compared to traditional dictated notes which were 66%.[15] Park and his colleagues published results for their series of pancreatic cancer patients and reported higher completeness checklist scores.[3] Yaser *et al* did a study proving that the implementation of an electronic operation note system significantly improved the quality of documentation.[16] They audited 50 consecutive operation notes for emergency orthopaedic trauma procedures and re-audited after implementation of electronic proforma. Similarly, Ivo Dukic *et al* presented substantial improvement after introducing a commercially available "Operative Management Information System (ORMIS)". All these studies lend credence to the fact that electronic records are proving to be more useful in carrying a wealth of information and are an impressive educational tool which can supply evidence for audits, clinical governance, research and national registries.[14]

## SYNOPTIC OPERATIVE REPORTS:

A recent systematic review carried out by Özgür Eryigit *et al* was published which intended to compare the completeness of synoptic operative report with that of a narrative report.[22] It was able to consistently establish that the overall completion rate was higher and the time taken for completion was significantly shorter. Another meta-analysis by Stogryn *et al* came up with similar conclusions after analysing 16 studies.[23] The additional advantages outlined in this analysis included increased reliability,

enhanced efficiency, consistent quality and decreased rate of error in reporting. These elements thereby play a substantial role in improving the quality of surgical care imparted. On the other hand, narrative reports do have the advantage of readability and significant detailing of specific steps of a procedure, but this can also be recorded with the addition of an extra comments or free text section in the synoptic report to expand on intricate stages of the operation. Stogryn also performed a study using Roux en Y Gastric Bypass as an index procedure and compared both types of reports only to conform the superiority of synoptic report for accuracy and completeness.[25]

Claire *et al* published their study recently investigating reports of 3662 patients who had breast cancer surgery performed and found out that the surgical details demanded by oncologists to ensure completion were more commonly reported in synoptic formats.[24] Moreover, they found that the American Society of Breast Surgeons (ASBrS) quality indicators were undoubtedly higher with an associated synoptic report compared to a narrative one. In another recent mixed-methods implementation study involving 37 surgeons from 14 institutions, the rectal cancer synoptic operative report was ascertained to be a valid method for efficient documentation of critical items.[26] Hence, significant data has been made available to ratify the need for traditional note keeping to shift to a more organized electronic medium.

## SAFE PRACTICES

Healthcare services need to be cautious and meticulous in ensuring accurate record keeping to safeguard patient safety and it becomes more essential in surgical practice. International bodies like the World Health Organization (WHO) and Joint Commission International (JCI) which are committed to maintaining standards of care across the globe, have stressed the importance of this aspect of healthcare delivery and have included them in their Safe Surgery Checklist Protocol[17] and International Patient Safety Goals respectively.[18] The National Patient Safety Agency (NPSA) utilized the WHO checklist and adapted it for all patients in the UK and Wales. The document was elaborated and included briefing, sign-in, time-out, sign-out and debriefing and is published as a How To guide for Five Steps to Safer Surgery.[19]

## FINANCIAL REMUNERATION

The financial transactions in terms of hospital billing have been taken over by medical insurance in many parts of the world, especially in the private sector. This necessitates meticulous documentation of a patient's condition and progress in order to be precisely coded for the services rendered. It becomes of paramount importance in the field of surgery which re-emphasizes the need for proper and detailed operation notes.

Flynn et al used operative notes as a billing document and performed an audit with the help of certified professional coders to establish the most common deficiencies faced by the hospital in terms of compensation.[20] The three most common failings noted by them included an incomplete account of all surgical procedures performed (56%), an insufficient description of the indications of procedure (49%) and failure to be dictated within 24 hours of procedure (45%). They were able to conclude that the operative note was the most substantial document in terms of justification of reimbursement for surgical services and the surgical team should be aware to provide the necessary information to expedite payments. Novitsky *et al* understood that the reports dictated by residents had a 28% error rate which led to incorrect coding of 14 cases resulting in a significantly reduced reimbursement for the surgical procedures performed.[27] The challenge faced by the hospitals to recover capital in case of rejection of payment is serious and may need exhausting further resources on many fronts in order to achieve balance of payments.

## THE CHALLENGE

With the introduction of new technology, many areas of surgical practice have been rapidly transformed which will challenge the current norms and impose a greater need to provide evidence for ongoing clinical care and documentation. Implications for medicolegal and insurance purposes in light of these advancements may require more vigilance on part of practicing physicians. Electronic and typed notes have become the standard in most centers around the globe to ensure clarity of purpose and record detailed information with little ambiguity. Many centers are also using available software with synoptic operation notes which have templates for standard steps in accordance with good surgical practice after consensus from the surgeons operating in the center[8] and although such endeavours may not be standardized everywhere and may have institutional nuances, attention must also be paid to formally educate and train surgeons as well as trainees in note writing.

## NEED FOR TEACHING PROGRAMMES

Despite the stress on importance of operative note writing, it is quite surprising to find limited published literature on the teaching of this skill. Most accreditation bodies around the world tend to incorporate communication skills as a core

competency during residency and postgraduate training. Operative note writing is the fundamental form of written communication for surgeons as it provides a concise record of essential information regarding the patient condition and details of procedure involved. A review of literature carried out by Dumitra *et al* assessed the teaching and quality of Operative dictation in surgical residency programs and discovered only a small proportion of residencies promoted formal education for it.[28] The authors included 13 studies to determine current perceptions of operative note dictation education and the interventions that may be instituted to improve this key skill in residents. The barriers identified by them to training were time limitations, unavailability of a formal program and perceived quality issues in resident notes. They also argued that our current training model fails to conveniently prepare our surgical residents on proper documentation that is imperative for favourable communication and medicolegal security once they enter into formal surgical practice.

The Department of Surgery at King Abdul Aziz University Hospital in Jeddah, Saudi Arabia published a study evaluating the effectiveness of teaching operative note writing to residents in surgery.[21] They concluded that such teaching had a significant impact on notes improvement and came up with a recommendation to include such courses as part of the curriculum for surgical residency training programs. Similarly, a study published by Hyde et al demonstrated a significant improvement in resident operative note recording after implementing a formal dictation education plan.[29] These studies show that if formal programs are initiated in the right way, future surgeons can be imparted with these crucial skills at an early stage of their careers. Other strategies have also been proposed which may be helpful in structuring an education plan such as regular academic teaching, bootcamp lectures, courses, orientation during internship and regular one on one feedback sessions with the attending surgeons.[28]

## RECOMMENDATIONS

This review validates the notion that operative notes are an integral pillar in maintaining clinical care in surgical patients with the electronic based synoptic reports being more efficient, reliable and complete when compared to traditional narrative reports. Improving the quality of such notes is of paramount importance to surgeons and we recommend instituting formal education programs during surgical residency to equip trainees with these technical skills.

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## Address for Correspondence:
**Muhammad Umar Younis,** Mediclinic City Hospital, Dubai-UAE
**Email:** umar000@hotmail.com