**Medical Record Documentation among Interns: A Prospective Quality Improvement Study**

**Abstract:**

Comprehensive record keeping is a key aspect of medical practice. The National Hospitals Office (NHO) and Irish Medical Council (IMC) have published guidelines in this area. A prospective audit of 100 patients assessed by interns was performed to quantify adherence with these guidelines followed by an educational session and email reminders. Adherence was reassessed in an incidental manner. Compliance was recorded in a number of areas including the reason for review and documentation of a plan both 98 (98%). However less than half of interns recorded the patient name, background history or their impression of the case. Only 31(31%) noted the patients MCRN and only 1(1%) the information they gave to the patient. Significant improvements following the intervention were found, however significant deficits remained in a number of areas including the noting of an impression of the case 62(62%) and information given to patients 18(18%). Suboptimal documentation can be improved through education and clinical auditing.

**Introduction**

Medical records (MR) form the basis of information available to a physician in any given patient encounter. Furthermore, they provide vital information for research, audit and medico-legal purposes. Accurate MR allow more efficient data interpretation. This translates into improved quality of patient care through informed decision making, auditing and monitoring an institutions performance. Incomplete or inaccurate MR documentation has the potential to cause adverse patient outcomes as well as adverse medico-legal consequences. Previous studies have reported that clinically significant errors in MR documentation are common in practice. With this in mind the NHO has published guidelines regarding the minimal acceptable standards required in MR documentation. Included in these standards are recording of the identity of the patient and doctor and the time and date the patient was reviewed. In addition the record itself is advised to include the reason for the encounter, a case review, an impression of the current situation, a plan, and the information given to patients. The IMC, introduced a new record keeping obligation for physicians in the Medical Practitioners Act 2007 (Section 43(8)). This requires medical practitioners to include their Medical Council record number (MCRN) as well as their name when making entries in the MR. Our study sought to determine to what degree the inclusion of such requirements was being recorded in our catchment area and how adherence would be affected by an educational session focusing on the recommendations and their importance to clinical care.

**Methods**

This was a prospective qualitative study. The study was carried out in the Acute Medical Assessment Unit (AMAU) of St James Hospital (SJH), Dublin. SJH is a large university teaching hospital serving as a secondary care centre for its local catchment area. The objective was to assess the adherence and continuity of care with a personal physician for each patient, but to underpin this with a nursing and allied support team dedicated to acute medicine. The operation and outcome of the AMAU to 2012 has been described elsewhere. A prospective chart review was carried out on 100 patients reviewed by interns on call over a three-week period. All reviews assessed were between the hours of 5pm and 9am. For each patient the entry in the MR at the time of review was scrutinized. The medical records were compared to national standards as published by the NHO. The recommendations of the NHO are detailed in Table 1. In addition we assessed compliance with the recommendation by the Medical Council for doctors to include their MCRN in all documentation. All medical records were examined and the data entered into a database by one of the authors.

Two weeks after the conclusion of the initial review a teaching session on documentation requirements was conducted by one of the authors as part of the scheduled SJH intern teaching program. Furthermore an interactive discussion of the topic was facilitated by a series of questions and a debate. Four weeks after the educational session a second prospective chart review was conducted. This used identical methodology to the first by the same observer. The variable assessed for the control group were compared using a tailed Kolmogorov-Smirnov test. GraphPadInStat version 3.10 (GraphPad Software, San Diego, California, USA) was used for all statistical analysis. The study was conducted in accordance with the audit guidelines of SJH.

**Results**

Over the duration of the study 200 MR entries were reviewed, 100 in the initial review and a further 100 in the re-audit. All patients were under the care of medical consultants and were assessed in the AMAU following emergency medical admission through the Emergency Department. The results of the audit are summarized in Table 1. Good baseline compliance was recorded in a number of areas including the reason for seeing the patient and documentation of a plan (both 98%). However a number of deficits were identified in the initial audit with just under half of interns recording the patients name, background history or their impression of the case. In addition only 31(31%) noted the patients MCRN and only 1(1%) the information they gave to the patient. There were significant improvements in the majority of assessed variables following the intervention. The only areas in which significant improvements were not seen were those requirements where baseline compliance was already high 85(85%). However significant deficits remained in a number of important areas including the noting of an impression of the case 62(62%) and the information given to patients 18(18%).

**Discussion**

The results of our study demonstrate a high level of compliance with MR keeping prior to our intervention. Deficiencies were noted in areas with the potential for clinical consequences. Encouragingly, following our educational intervention the majority of these improved significantly. Residual deficiencies, particularly in the documentation of an impression and the information given to patients remained, indicating a need for further strategies to target improvement. Our study demonstrated that increasing intern awareness of the standards required from their records and the clinical implication of these through inclusion in medical education can improve MR keeping significantly. This is particularly important, as previous studies have suggested that the majority of documentation errors made come from junior doctors. The majority of the interns included in our study reported that our educational session was the first occasion on which they had any formal training in MR documentation. Our results suggest that the inclusion of such a session in the teaching provided at the commencement of the intern year would be beneficial.

In the past decade research has suggested that a move to automated electronic systems have the potential to dramatically reduce medical errors through automated MR keeping. However implementation of this technology will likely not become widespread in the near future due to economic and logistical concerns. Incomplete or inaccurate MR documentation has the potential to cause adverse patient outcomes as well as adverse medico-legal consequences. Previous studies have reported that clinically significant errors in MR documentation are common in practice. With this in mind the NHO has published guidelines regarding the minimal acceptable standards required in MR documentation. Included in these standards are recording of the identity of the patient and doctor and the time and date the patient was reviewed. In addition the record itself is advised to include the reason for the encounter, a case review, an impression of the current situation, a plan, and the information given to patients. The IMC, introduced a new record keeping obligation for physicians in the Medical Practitioners Act 2007 (Section 43(8)). This requires medical practitioners to include their Medical Council record number (MCRN) as well as their name when making entries in the MR. Our study sought to determine to what degree the inclusion of such requirements was being recorded in our catchment area and how adherence would be affected by an educational session focusing on the recommendations and their importance to clinical care.
institution investigated compliance with the IMC directives on physician identification in MR\(^1\). In this study 8(8%) of entries included no form of physician identification. With regard to individual areas a signature was included in 52.45\%(52.45%), bleep number in 63\%(63%), and MCRN in 0.86\%(0.86%) of cases. While there has been a modest improvement shown in our figures, our initial results were still far from acceptable.

Although our study identified a lack of awareness in MR keeping secondary to sub-optimal education, it could not identify confounding factors contributing to MR omissions. Further studies would do well to focus on this to identify areas where further interventions are needed in an effort to improve the overall quality of our institutions MR keeping. Moreover studies looking at the effect omissions have on patient quality of care over time could identify which areas have the most significant effects on quality of care. This information could have the potential to streamline the implementation of suggested standards. In conclusion, intern documentation in medical records is suboptimal and can be improved with education. Consideration should be given to active education in this area at the commencement of internship.

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