# Good Medical Record Keeping

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## ABSTRACT

**Introduction:** Good medical record keeping is at the forefront of medical practice. Not only do medical notes act as a learning tool, they are needed in medico-legal circumstances and more importantly, for patient safety and communication between multi-disciplinary team members. The General Medical Council wishes for clinicians to keep 'good' notes in a coherent, chronological and accurate order.

**Objective:** The Royal College of Physicians (RCP) audit tool released in 2008 assesses 12 standards of medical notes, with which this audit has been conducted. The objective was to measure medical note keeping in accordance with published guidelines.

**Method:** A concurrent review of inpatient notes on a medical ward, Fairfield General Hospital (FGH) was undertaken with standards set at 100%. A questionnaire exploring attitudes to medical record keeping was also piloted.

**Result:** Standards measured increased over the 3 audit cycles with 3 of the indicators (writing a date, patient name and hospital number) reached 100%. The questionnaire showed 60% of the cohort had not read guidelines on note keeping and were dissatisfied with the standard of medical notes on their wards.

**Conclusion:** These results indicate medical note keeping has scope for improvement and auditing can improve standards. They also highlight a need for development in the way doctors are trained, with regards to medical note keeping.

**Keywords:** medical, note, keeping, records.

## Introduction

The medical record by definition is a "collection of data on a patient including a history, statement of current problem, diagnosis and the treatment procedures." [1]

Regulating doctors in the United Kingdom, the General Medical Council (GMC) indicates that "doctors must keep clear, accurate and legible records, reporting the relevant clinical findings, the decisions made, the information given to patients, and any drugs prescribed or other investigations or treatment".[2] As this is a requirement of all doctors, one may question; what is

the purpose of medical notes?

Mann and Williams state that in the modern health care environment, records serve a myriad of purposes, which can broadly be categorised into primary and secondary functions. Table 1 outlines this. [3] The main functions indicated - as an aide memoir, for communication and research. Sir William Osler referred to medical record keeping as a sense; showing not only its importance but a use as a learning tool.[4] In addition to this, the Harvard Risk Management declared that records should be able to be used as a "legal and reimbursement tool," [5] something that is becoming increasingly important in the litigation culture of today. As well as keeping the record, the GMC expects them to be filed properly [1]. The ministry of health clarifies this further by providing an example of a standardised hospital medical record form, which dictates an order for the notes. This can be seen in Table 2 below. [3, 5]

Although clear guidance is given by the regulating bodies, the Royal College of Physicians Health Informatics Unit (RCP HIU) found that in 2002, after auditing 149 case notes in England and Wales, the notes had not been maintained to standards taught to all doctors at induction. They found that 29% of pages had no patient identification, 9% of all entries were not entirely legible, 11% undated and 83% did not identify the lead clinician present. [3] Work done by the HIU has also seen that there is a significant difference in the quality of medical notes between hospitals. [6] Illegibility is another main problem that medical records face today, in addition to a chaotic filing regimen. [7] Medical records have also been criticised publicly by the findings of the Bristol Kennedy Inquiry 2001.[8]
In response to this data the HIU, funded by the NHS, in 2008 launched generic medical record keeping standards [6] which apply to all UK medical notes. It is with these standards that this audit has been conducted.

## Standards and Guidelines Used

The generic medical record keeping standards audit tool introduced by the RCP in 2008 was used. The 12 generic standards the audit tool assesses are as follows [9]

1) The patient's complete medical record should be available at all times during their stay in hospital
2) Every page in the medical record should include the patient's name, hospital number and location in the hospital
3) The contents of the records should have a standardised structure and layout. Where possible medications should be identified using their generic name
4) Documentation within the record should reflect the continuum of patient care and should be viewable in chronological order
5) Data communicated on admission, handover and discharge should be recorded using a standard proforma
6) Every entry should be timed (24hr clock), dated, legible and signed by the person making the entry. The name and designation of person making the entry should be legibly printed against their signature. Deletion and alterations should be countersigned
7) Entries to the medical record should be made as soon as possible after the event to be documented and before the relevant staff member goes off duty. If there is a delay in the time of the event, the delay should be recorded

8) Every entry should identify the most senior healthcare professional present (who is responsible for decision making) at the time the entry is made
9) On each occasion the consultant responsible for the patient's care changes, the name of the new responsible consultant and the date and time of the agreed transfer of care should be recorded
10) An entry should be made in the medical record whenever the patient is seen by a doctor or any healthcare professional. When there is no entry in the hospital record for more than four days for acute medical care or seven days for a long-stay continuing care, the next entry should explain why.
11) The discharge record/ discharge summary should be commenced at the time a patient is admitted to hospital
12) Advance directives, consent and resuscitation status statements must be clearly recorded in the medical record.

All 12 standards were assessed using the audit tool except for - □□Checking medications were written using a generic name, due to a similar audit already taking place on the ward covering this aspect □□Checking the admission, handover and discharge summaries, as the audit was utilising concurrent patient notes. The questionnaire piloted a variety of questions, ascertaining healthcare professionals opinions on good medical record keeping.

## Material and Method

A sample size of 18 was used over a course of three weeks. 6 sets of notes were reviewed on a weekly basis. 3 of the sample were chosen randomly to be female and 3 male to avoid gender bias.

A sample of 35 recorded for the questionnaires, which were distributed to healthcare professionals working in all wards of the hospital, varying in designation. The data was collected over a period of a month 24/01/2011 – 18/02/2011. A concurrent review of medical notes belonging to inpatients on a acute medical ward was carried out at Fairfield General Hospital. The data was checked against the RCP generic audit tool, starting at the point in the written clinical notes when the patient's care was transferred to the ward. Patient or clinician names were not noted to maintain confidentiality. Medical notes were selected on a simple random basis, using a random number table. The inpatients were organised into 2 lists of different gender on the day of data collection each week (Friday). The random number table was then consulted to choose 3 case notes from each list. The questionnaires were randomly dispersed to doctors all over the hospital, and to all grades. Advantage of situations such as grand rounds and teachings taken as it provided an excellent opportunity for mass amounts of people to complete the questionnaires. They were collected as soon as the targeted individual had finished to avoid non-returning. Bias was eliminated by selecting patients at random, making certain each gender was fairly represented and by conducting the audit on the same day every week. It was paramount that patient notes weren't duplicated during the audit. One uncontrollable variable included staff changeover on the ward during the audit. This may have introduced a potential bias into the results, as the practices of record keeping may vary between individuals working on the ward.

## Results

18 sets of medical notes were reviewed with the target = 100%

Other information was also collected using the proforma (e.g. DNR status and mistakes in the notes) however this was of no comparative use as only one in every 10 notes had information worth collecting so has been omitted from the results tables. 35 filled in questionnaires were returned from the target group. The results from each question are discussed below. After conducting the first cycle over 90% of entries audited had the date, patient name and hospital number present. The major issue was writing the time after each entry, as only an average of 67% of case notes reviewed possessed this. 85% of the sample had a legible printed name and 82% a signature according to data after the first audit cycle collection. Analysis of cycle 2 showed there was an obvious improvement as all the parameters being measured increased in incidence. Over 95% now had a patient name and hospital number on every page, with over 94% of all entries having the date recorded. Over 86% had a legible printed name and signature, which indicated an obvious improvement from the previous week. The biggest progression was seen in recording the time on written notes, which rose by 9%. Cycle 3 also showed an improvement with 3 parameters reaching the desired target of 100% - writing the date, patient name and patient hospital number. 96% of entries displayed a signature and legible printed name and 83% of entries had the time present. Over the course of the 3 weeks of the audit, the sample reviewed showed an average increase of 16% of entries having the time written. Similarly incidences of a legible printed name on entries rose by 14% and having a signature present also rose by 11%. The other parameters all augmented to reach the target level of 100%.

Analysing the data provided by the questionnaire gives information about FGH as a whole site. This holistic approach provides a more useful analysis tool than limiting the questionnaire to the professionals whose practices were audited. Out of a sample of 35 participants 60% of the cohort expressed they were dissatisfied about the current condition of medical notes on their respective wards. 31% of which were not satisfied with the legibility and organisation of the notes, 25% with the information available in the notes and 8% dissatisfied with mistakes present. One participant stated, *'episodes are written in a random order and this is frustrating.'* Interestingly 60% of the sample had not read any guidelines on medical record keeping (60% were also dissatisfied with the notes). This question was purposely left with an ambiguity by not stating specific guidelines i.e. Pennine Acute Medical Trust or RCP guidelines, to apply to more participants. There may be a correlation between the proportion of people who were dissatisfied with the notes and those who had not read any guidelines. When asked about the top 3 reasons for 'good' medical record keeping, patient/clinician safety came in as the most important, with patient care and communication as the 2$^{nd}$ and 3$^{rd}$ most important reasons respectively. Habit (45%) was the mode response when asked about non-adherence to guidelines. 42% of the sample thought it was due to time restraints and 11% believed it was due to lack of training. One participant added it was due to examples being set by others and remarked that *'the guidelines are not appropriate.'* When enquiring about introducing an electronic medical record system (EMR) 66% of the sample were in favour amidst the rest opposing with concerns about cost, training and the time it may take to get the system running.

## Discussion

It was clear after cycle 1 that the condition of the medical notes on the ward was sub standard, in accordance with the RCP guidelines. 20% of clinicians were failing to provide a signature or legible printed name. As this is the only discrimination available to distinguish the treating physician; not documenting such data can pose a very serious threat to an organisation the size of the NHS, especially during times of litigation. This can have the knock on effect of wasting thousands in tax payers money, indicating 'good' medical record keeping is not solely needed for patient safety, but also physician safety.
According to Reason's Swiss Cheese Model (2000) sub standard record keeping can be seen as an active or latent failure in the NHS layer of defence. The layer of defence being systems the NHS has in place to protect from threats such as litigation or security breaches. Though this failure alone may cause no harm, if there were multiple which coincided with one another, an accident opportunity may arise. As Reason states the best measure to take is to create more effective defences, in this context relating to accurate, succinct and guideline adherent medical record keeping. [10]

It was interesting to note when analysing the questionnaire responses, the sample believed the most important reason for adhering to guidelines was patient care and safety, yet 60% had not read any guidelines. This may arouse suspicion as to whether the junior doctors are receiving the correct training. 11% of the sample did in fact indicate that training was a factor implicating guideline non-adherence, so perhaps this is an issue that can be tackled at induction with junior doctors. If junior doctors assume a habit now, later generations of doctors may learn from an example their predecessors set.

The questionnaire touched on EMRs, 65.71% of the questionnaire sample indicated that it would be something they would embrace due to improvements in legibility and organisation of the notes. A study by Miller et al (2004) saw implementation of EMRs in primary care in America improved chart availability, legibility and organisation. The only drawback being financial. [11] With December 2007 seeing a switch to EMRs in primary care settings in England [12], is it only a matter of time before all records become electronic, or are the financial burdens of the NHS proving too much to implement such a system?

When exploring subsequent audit data, it is obvious there is a vast improvement with each cycle. Demonstrated by a 15.65% increase in writing the time on entries, and by reaching the target of 100% on writing the date, patient name and hospital number. Thus showing that methods used of displaying and presenting the data to the team have proved successful over the past 3 weeks.

Completing 3 cycles in quick succession has been beneficial as outcomes have been measured instantaneously after implementing interventions. The interventions used in this audit consisted of posters placed on the notice board on the ward after every data collection, showing how the ward was doing in accordance with the standards. It was of utmost importance to have a visual appeal to ensure posters were indeed noticed and read. Upon receiving feedback from a

colleague after the first cycle, it was clear the posters needed to be informative but also easy to read in a fast paced environment. The posters from cycle 2&3 reflected this feedback. Monday mornings before ward rounds a small briefing would also take place, explaining the posters and giving an opportunity to the team to voice any concerns/suggestions for the following weeks audit cycle.

Piloting the questionnaire proved more difficult as scales were filled incorrectly, rendering the responses to some questions useless. Legibility of the replies to the open ended answers proved tricky to decipher, so these results were omitted from the presented findings.

## Conclusion

Current practices of medical record keeping on the ward reviewed improved with regular feedback and input from audit data interventions. The medical records did not yet fully meeting the RCP guidelines with a 100% adherence; however there was a vast improvement over the few weeks and this may be possible with further work. It is therefore essential for this audit to continue as measured parameters can reach 100% with positive reinforcement.

The piloted questionnaire has given a valuable insight into attitudes regarding 'good' medical record keeping, however this needs to be done on a much greater scale over the whole of the U.K, if findings from the questionnaire can be used to change practice. The main issue the findings have highlighted include: professionals being dissatisfied with the current condition of medical notes, a general consensus that time restraints are preventing good practice, a lack of training and EMRs may prove beneficial.
There is scope for further research based on the results of this study. Recommendations include utilising a larger cohort and examining all aspects of patient notes. This would embrace all sections of the kept files, not being specific to the written notes. Following on from this another questionnaire can be piloted assessing satisfaction rates in regards to the notes after the audit. These statistics can then be manipulated to assess comparative value to results from the questionnaire pre- audit. It would be very interesting to see how the practice of auditing can influence these results.

**Conflict of Interest:** None declared.

## References

1) Good Medical Practice Providing Good Clinical Care Web site. http://www.gmc - uk.org/guidance/good_medical_practice/good_clinical_care_index.asp. Accessed February 8, 2011.

2) Flight.M. *Law Liability, and Ethics for Medical Office Professionals.* 4th ed. Canada: Delmar Learning; 1998: 173-174
3)Mann.R, Williams.J. Standards in Medical Record Keeping. *Clin. Sci*. 2003;3:329-332
4)William Osler Quotes Web site. http://thinkexist.com/quotes/william_osler/ Accessed February 8, 2011
5) Tunbridge.R.E. *Central Health Services Council Standing Medical Advisory Committee, The*

*Standardisation of Hospital Medical Records: Report of the Sub-Committee.* London: H.M. Stationery Off; 1965
6) Carpenter.I, Ram.M.B, Croft.G.P et al. Medical Records and Record Keeping Standards. *Clin. Med*. 2007;7:328-331
7) Rodriguez-Vera FJ, Marin Y, Sanchez A et al. Illegible handwriting in medical records. *J R Soc Med*. 2002;95:545-6.
8) Kennedy.I. The Report of the Public Inquiry into Children's Heart Surgery at Bristol Royal Infirmary 1984-1995. *Learning from Bristol*. 2001;1:47-4
9) Health Informatics Unit. An Audit Tool for Generic Medical Keeping Records – Report on a Pilot Study. 2009;1:1-12
10) Reason.J. Human Error: Models and Management. *BMJ* 2000;320:768-770
11) Miller.R.H, Sim.I. Physicians use of Electronic Medical Records: Barriers and Solutions. *Health affairs* 2004;23:116-126
12) NHS E-Records Program Launched Web site. http://news.bbc.co.uk/1/hi/health/7130627.stm. Accessed February 15, 2011
13) Random number table Web site. http://www.idrc.ca/fr/ev-56617-201-1-DO_TOPIC.html. Accessed January 24 2011

Table 1 - Outlining the Primary and Secondary Functions [4]

| **Functions** | |
|---|---|
| **Primary Functions -** supporting direct patient care | Aide memoir, Communication |
| **Secondary Functions** Medico-legal record. Source of information for | Clinical audit and research, resource allocation, Epidemiology, service planning, performance monitoring |

Table 2 – Order of a medical record

**Box 1. Examples of standardised hospital medical record (HMR) forms.**

| | |
|---|---|
| HMR 1 | Identification sheet/summary |
| HMR 1 (P) | Identification sheet (case note copy) |
| HMR 250 XX | Admission form |
| HMR 4(a) L | History sheet – one |
| HMR 4 b | Continuation sheet |
| HMR 100 | Standard mount sheet (gummed) |
| HMR 111 | Inpatient medication |
| HMR 6 | Anaesthetic record |
| HMR 302 | Nursing preoperative checklist |
| HMR 200 | TPR and BP sheet |
| HMR 5A1 | Operation consent by patient |
| HMR 210D | Diabetes chart |
| HMR 210A | Daily intake – output chart |
| HMR 2D | Discharge summary |

TPR = temperature, pulse and respiration; BP = blood pressure.

Table 3 – Results from cycle 1

| | | | | | | | **Average** |
|---|---|---|---|---|---|---|---|
| **Record Number** | 1 | 2 | 3 | 4 | 5 | 6 | **n=15.17** |
| **Number of pages** | 12 | 25 | 21 | 3 | 16 | 14 | |
| **Named** | 10 | 25 | 21 | 3 | 15 | 14 | 14.67**(96.70%)** |
| **NHS Number** | 10 | 25 | 17 | 3 | 15 | 13 | 13.83**(91.21%)** |
| | | | | | | | **n=18.67** |
| **Number of entries** | 14 | 42 | 25 | 3 | 19 | 9 | |
| **Date recorded** | 14 | 40 | 20 | 3 | 17 | 9 | 17.17**(91.96%)** |
| **Time recorded** | 10 | 29 | 14 | 1 | 13 | 8 | 12.50**(66.96%)** |
| **Signature** | 12 | 37 | 19 | 2 | 17 | 8 | 15.83**(84.82%)** |
| **Legible printed name** | 11 | 39 | 14 | 2 | 17 | 9 | 15.33**(82.14%)** |

Table 4 - Results from cycle 2

| | | | | | | | **Average** |
|---|---|---|---|---|---|---|---|
| **Record Number** | 1 | 2 | 3 | 4 | 5 | 6 | **n=20.67** |
| **Number of pages** | 10 | 26 | 3 | 57 | 15 | 13 | |
| **Named** | 10 | 26 | 3 | 55 | 14 | 13 | 20.17**(97.58%)** |
| **NHS number** | 10 | 26 | 1 | 54 | 14 | 13 | 19.67**(95.16%)** |
| | | | | | | | **n=25.50** |
| **Number of entries** | 16 | 37 | 2 | 68 | 10 | 20 | |
| **Date recorded** | 16 | 36 | 2 | 61 | 10 | 20 | 24.17**(94.77%)** |
| **Time recorded** | 15 | 33 | 2 | 46 | 7 | 18 | 20.17**(79.08%)** |
| **Signature** | 15 | 31 | 2 | 59 | 8 | 18 | 22.17**(86.93%)** |
| **Legible printed name** | 15 | 33 | 2 | 60 | 9 | 18 | 22.83**(89.54%)** |

Table 5 - Results from cycle 3

| | | | | | | | **Average** |
|---|---|---|---|---|---|---|---|
| **Record Number** | 1 | 2 | 3 | 4 | 5 | 6 | **n=9** |
| **Number of pages** | 3 | 2 | 5 | 4 | 5 | 15 | |
| **Named** | 3 | 2 | 5 | 4 | 5 | 15 | 9**(100%)** |
| **NHS number** | 3 | 2 | 5 | 4 | 5 | 15 | 9**(100%)** |
| | | | | | | | **n=11.5** |
| **Number of entries** | 4 | 2 | 4 | 4 | 4 | 19 | |
| **Date recorded** | 4 | 2 | 4 | 4 | 4 | 19 | 11.50**(100%)** |
| **Time recorded** | 4 | 1 | 4 | 2 | 3 | 15 | 9.50**(82.61%)** |
| **Signature** | 3 | 2 | 4 | 2 | 4 | 19 | 11**(95.65%)** |
| **Legible printed name** | 3 | 2 | 4 | 4 | 4 | 19 | 11**(95.65%)** |

Table 6 – Indicates the change seen over successive cycles

| | **%Increase** |
|---|---|
| **Patient name on every page** | 3.3 |
| **Patient hospital number on every page** | 8.79 |
| **Date present after every entry** | 8.04 |
| **Time present** | 15.65 |
| **Signature present** | 10.83 |
| **Legible printed name present** | 13.51 |