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An intervention study of medical records in an emergency medicine unit

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An Intervention Study of Medical Records in an Emergency Medicine Unit

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A research report submitted to the Faculty of Health Sciences, University of the Witwatersrand, in partial fulfillment of the requirements of the degree of the Master of Family Medicine.

DECLARATION

I, Feroza Motara, declare that this research report is my own work. It is to be submitted in partial fulfillment of the degree of Master in Family Medicine at the University of the Witwatersrand, Faculty of Health Sciences, Johannesburg. It has not been submitted before for any degree of examination at this or any other University.



Feroza Motara

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30/5/13

Date

DEDICATION

I would like to dedicate this work to my parents, Billy and June Motara for their continuous support, encouragement and inspiration and to my daughters Raeesah and Zahrah, who have been the primary motivation for my undertaking this degree.

ABSTRACT

Background: The correct and comprehensive documentation of patient information and management, not only to have complete records of all patient interactions with all medical and non-medical personnel, but also for medico-legal purposes and to be compliant with the HPCSA's guidelines is important. Medical records in the Emergency Unit generally appear to be sub – optimal in fulfilling these guidelines.

Aim: The aim of the study was to assess whether the introduction of a new structured record form would improve the quality of patient records.

Design: The study followed a before and after intervention study with a cross–sectional review of patient files to examine the completeness of non-emergency admission records taken by doctors – both before and after the introduction of a new record form.

Results: There was a significant improvement from baseline to both one ($p<0.05$) and three months ($p<0.001$) after the introduction of the structured form. The difference between one and three months was not significant ($p>0.05$). Variables at baseline showed a frequency of only six of the sixteen were recorded in 90% of the records, while at three months 13 of the sixteen were recorded more than 90% of the time. In summary, there were significant improvements in record keeping both at one month and three months post intervention.

Discussion: The new record form is an attempt at fulfilling the guidelines set out by the HPCSA for a valid comprehensive record form. The introduction of a structured, standardized record form, which is HPCSA compliant, together with the involvement of staff has led to significant maintained improvement in record keeping.

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ABBREVIATIONS

HPCSA	Health Professional Council of South Africa
CMJAH	Charlotte Maxeke Johannesburg Academic Hospital
HIU	Health Informatics Unit
UK	United Kingdom
RCP	Royal College of Physicians
RACGP	Royal Australian College of General Practitioners
QA	Quality Assurance
EMU	Emergency Medicine Unit

CHAPTER ONE:

LITERATURE REVIEW

1.1 WHAT ARE MEDICAL RECORDS?

Medical records may be termed as any information and documents kept in a systematic, scientific and easy way that help to retrieve the required data at the time of necessity.[1] They can cover a wide range of material including handwritten notes, computerized records, correspondence between health professionals, laboratory reports, imaging reports, videos and printouts from monitoring equipment.[2]

"A medical record is constituted by any records made by a medical practitioner at the time of or subsequent to a consultation with, an examination of, or the application of a medical or surgical procedure to his or her patient and which is relevant thereto." [3] According to the Medical Protection Society (MPS), medical records of the patient encounter should include relevant history (including important negatives), examination findings, differential diagnosis, details of investigations and treatment provided, follow-up arrangements and what was discussed with the patient.[2] Subsequent consultations should show patient progress, examination findings and treatment. At all times informed consent, information discussed with the patient as well as their refusal of any treatment must be recorded as well.

The Royal College of Pathologists guidelines state that good records, in addition to the above, be kept to aid the diagnosis of ongoing clinical management of the patient, conduct clinical audits, promote teaching and research, be kept as direct evidence in litigation, make case reviews possible and serve as a basis for accreditation.[4]

1.2 WHY KEEP MEDICAL RECORDS?

Medical records contribute to a comprehensive store of the patient's encounter, treatment, diagnosis and prognosis. Furthermore, the presence of these together with comprehensive, legible notes from the practitioner enable other and subsequent doctors to obtain a comprehensive, clear picture of the patient's illness and medical history. Good medical records summarize the key details of every patient interaction.

1.3 THE IMPORTANCE AND PURPOSE OF GOOD CLINICAL RECORDS

The importance of optimal clinical records is first and foremost to provide continuity of care and to ensure the ongoing clinical management of a patient. Medical records are a prerequisite for delivering high quality, evidence based healthcare, particularly where a number of different clinicians are contributing simultaneously to patient care.[5] Records that are clear, comprehensive, contemporaneous, structured and objective not only give a concise history to other medical professionals about the patient's condition but also are adequate for evidential purposes in the event of a complaint, claim or disciplinary action.[6]

Medical documents are also kept for administrative and managerial decision making, assisting in clinical audits and for supporting improvements in clinical effectiveness through research.[7] Comprehensive, structured records also become a source of information for research. Medical records, if comprehensive, can provide retrospective information regarding morbidity and mortality, disease patterns and demographic

information, which would be useful to assist in planning for future resource allocation and health budgets.

In 1995, the Scottish Health office set out the purpose of the clinical records under the following broad headings: [8]

To keep accurate records

Adequate medical records enable the doctor or anybody else to reconstruct the essential parts of each patient contact without reference to memory.[2] They should also be comprehensive enough to allow a colleague to carry on where you have left off. A doctor needs a written reminder of what tests or investigations were ordered to ensure adequate follow up of results. For busy doctors with many patients or different doctors following up the same patient, detailed notes and records of what was ordered or done in each patient's file ensures that no results will be left undetected. This is also important for requests for consultations and when recommendations following the consultation have been made.

In a public sector hospital, patients do not necessarily see the same doctor at every encounter. The clinical records are then even more important as they bring together historical information from multiple sources, recorded by numerous individuals from many departments.[8] This is important for a patient's continuum of care.

The MPS records booklet[5] states that records ensuring continuity of care will also be adequate for evidential purposes, in the event of a complaint, claim or disciplinary action.

Follow up notes, which are in sequence and tell a comprehensive story about the patient's illness and management, enable any doctor to understand the unfolding of events as they occurred. This is particularly important when certain events have to precede others in order for management to be optimal, for example a patient who needs surgery has to first have informed consent signed and documented.

For communication purposes

Medical records are needed for doctors to let other team members, whether colleagues in other specialties or allied medical professionals such as physiotherapists or occupational therapists know about requests for consultations and concerns. The record thus acts as a communication network. There is a record of requested consultations as well as replies as to what was found or done from the various departments/specialists. The patient record becomes a single source for all this information.

Follow up consultations may be solely reliant on previous records made. Confidential information can also be made available to other members of the team via the clinical notes. In Casebooks of the MPS, a General Practitioner (GP) referred a 26-year old woman to a neurologist as she was complaining of blackouts. Details of her blackouts were given, but no disclosure about her oral contraceptive pill was given in the referral. The neurologist started the patient on anticonvulsants and three months later she fell pregnant. Her claim against both doctors was successful as there was no adequate record

of the communication between the two doctors, indicating the importance of sharing relevant important information with other colleagues.[10]

Recording of risk factors

Adverse drug events and patients' known allergies to drugs or other substances must be recorded legibly and highlighted to prevent recurrences of these events. Highlighting risks such as smoking, alcohol ingestion, drug abuse, family history and allergies are important in creating a profile for future patient disease entities. This should be documented hand in hand with any advice given and patient education as to the harmful effects of these risk factors.

Medico-legal and research purposes

Apart from the primary reason of good patient management, records are important sources of information and may be pivotal in the defense of a medical practitioner should they be called to answer a claim of negligence or mismanagement at the HPCSA or a crucial case in court. In discussing medico-legal hazards, the MPS states that legible notes must be kept primarily to assist the patient when receiving treatment. Secondly, should there be any future litigation against the doctor or the hospital, the notes will form the basis of the defense.[9] These notes must be comprehensive and contemporaneous. Medical records are the single most important document to prove the innocence of the doctor concerned.

MPS Casebooks are publications, which regularly highlight issues that constitute negligence or patient mismanagement. These cases are important in assisting other clinicians to avoid similar mistakes, particularly as pertains to consequences of inadequate, incomplete or illegible notes. The following examples are cases cited in the MPS Casebooks to help illustrate the importance of good record keeping.

1. Casebook Vol. 18 No 2 – May 2010 [10]

Unrealistic expectations! A 22-year old patient made a claim against an orthopaedic surgeon for what she felt was an unacceptable cosmetic result from a surgical procedure to fix a previously mal-united clavicle fracture. The orthopaedic surgeon had detailed documentation of his discussions with the patient regarding the possible side effects and potential complications of the surgery and the patient gave her informed consent for the operation. As the clinical notes were comprehensive and included explanations given to the patient as well as descriptions of steps taken to minimize scaring, the case was defended and the claim dismissed.

Patient education, advice and counseling as well as referral for follow up or return consultation are important both for the patient and the doctor especially in claims of negligence against the doctor. A documented record of what appropriate patient/client information or relevant discussions have been provided to the patient/guardian detailing the procedure, treatment, care, risks, benefits and/or alternatives, should be noted. This should include how the information was given, for example verbally or leaflets and must

be dated and signed by the doctor providing the information. This should include signed informed consent for procedures to be performed on the patient.

2. Casebook Vol. 19 No 2 – May 2011 [11].

Great expectations. A 20-year old student with marked breast asymmetry consulted a plastic surgeon. There was no evidence in the notes that the plastic surgeon had documented informed consent or the possibilities of any complications, including scarring. The surgeon recalled later that he had found the consultation difficult. A few weeks post surgery the patient developed an infection, which required readmission and the incision healed with an unsightly scar. The patient sued the surgeon and while there was no fault found with the surgery or follow up, the lack of good clinical notes regarding pre-operative counseling and information regarding possible complications were scanty, and the surgeon had to settle the case.

These case reports indicate the importance in recording all discussions, findings and advice given as this could make the difference in settling a litigious case of negligence. In Ireland, the average organization spends £120 in labor costs searching for lost or misfiled documents, loses one out of every twenty documents and office workers can each spend 400 hours per year looking for lost files.[10] Many patient safety incidents have been attributed to the lost and misplaced files, reports placed in the wrong records, mix-ups with patients' names and poor flagging of crucial information such as drug allergies. For this reason, every practice or hospital should have a records management policy in place. These should be reviewed and updated regularly. The policy should also set out

circumstances in which certain information may or may not be disclosed and protocols for dealing with requests for access. It is also important to check records to ensure that they do not include identifiable information about third parties.[12]

To store a record to which patients and doctors may have access

According to the HPCSA guidelines in South Africa a medical practitioner shall provide any person of age 14 years and older with a copy of or direct access to his/her medical records on request.[12] All medical records should be kept in a safe place for a minimum period of 12-months. They need to be stored by an identified person or institution. Parts of the record can be withheld if there is a possibility that viewing it will result in serious damage to the patient's wellbeing and these reasons must be clearly documented.

Good record keeping can be used for research that can impact on future Public Health developments such as the incidence of infectious diseases. The WHO, in introducing the International Classification of Diseases (ICD10) coding of diseases, has attempted to integrate worldwide disease trends and causes of morbidity and mortality.[13] The inclusion of ICD10 coding in clinical notes has allowed countries to not only identify disease patterns, incidence and trends in their countries but also to compare these to other similar countries. In enabling this standardized identification, possible solutions to these problems can be discussed. For example, when looking at the incidence of hypertension in a country annually, it can be determined if this is increasing and if so public health specialists can look at what is causing this and how to rectify it.

Thus medical records can provide prevalence of health conditions, the cause and effect of disease, and the delivery of appropriate health care to the public. Preventative interventions can also be devised across time using trends identified in the clinical records, provided these are comprehensive and complete. Looking back through medical records is a good way to get this data and the better the records; the more insights regarding disease can be obtained.

1.4 WHAT CONSTITUTES A GOOD CLINICAL RECORD?

A good clinical report should be free standing. The reader should be able to gain the key causes in the case, understand the evidence available and reach a clear understanding of the patient's problem and history, without needing to look at any other document.[14] Each contact or consultation should include the following information:

- Subjective information and history
- Objective information: what is detected from the examination and investigations
- Overall assessment of the patients
- Conclusions or differential diagnoses
- Problem list with a plan. [6]

This information must be presented in a structured form to ensure that it is clear, legible and understandable. It should be factual and free from subjective comments (except where these were given by the patient). Records should be written up at the time of or as soon as possible after an event to ensure accuracy. The information provided by someone

else should be acknowledged as such, and all consultations must be clearly indicated, dated and signed.[6]

A number of organizations have published guidelines for the content of a good clinical record. The Royal College of Pathologists (RCP) has developed 30 evidenced-based standards for record keeping, as well as an audit tool.[4] These standards include among others:

- That all but the most transient contact with a patient should be recorded
- The record should be made in an appropriately structured, multidisciplinary clinical or care folder, under the general headings: reason for contact, findings, conclusion, action to be taken and who was informed
- Every entry should be legible, dated, timed and signed
- Access to the folder should be clearly defined in local policies and procedures, with free access by the user
- The local organization should be accountable for the quality of support, training and development provided for professionals and other workers
- Record keeping and communication should be subject to continual quality development under the umbrella of clinical governance.

Most of the other published guidelines concur with the above principles.

Both the HPCSA and the MPS [5, 12] suggest the following structured headings to act as a prompt to ensure that no important details are left out of a consultation record.

History

1. Personal identifying particulars of the patient:

The patient's name should be on each side of each page where patient information is documented and each page shall have the unique patient identification number. It is essential that notes are made in the correct patient's name and filed in the correct folder. This identification of the patient is particularly important if a procedure or investigation is to be carried out on the patient and if a second opinion or consultation is sought that the correct patient with the specific condition is identified.

2. Bio-psycho-social and past medical/surgical history of the patient:

The history should include:

- The patient's allergies, if any. Allergies to medication as well as other substances such as plasters or latex gloves must be highlighted and be visible on the cover of the notes in order to prevent life threatening erroneous administration of such.
- Previous medical and surgical history
- Medications
- Social history. Any social information, which could impact or disadvantage the patient at present or in the future, must be documented. For example, if the patient comes from a very poor socio-economic background this might influence later compliance with treatment and follow-up appointments due to a lack of funds for transport or medication. Habits such as smoking and alcohol consumption are as important in predicting disease patterns and prognosis, as well as for implications for long-term treatment.

3. The time, date and place of the present consultation:

In order to ensure continuity of notes and care, date, time and place are important prerequisites to allow notes to be placed in sequential order and to provide temporal reference points. Retrospective entries should also be dated, timed and signed and should include the reason for the retrospective entries.

4. History of the presenting problem:

All relevant information regarding the main complaint for which the patient presented to the doctor should be recorded. This includes any aggravating or relieving factors of the symptoms and duration of symptoms.

Examination

1. Assessment of the patient's condition:

The examination of all systems must be documented, particularly at the initial visit, and both negative and positive findings recorded. Subsequent visits should have relevant examination features recorded. Objective findings such as blood pressure, heart rate and temperature must be recorded.

2. Tests, investigations and procedures:

Details of all requested tests such as blood investigations, X-rays and radiological investigations, as well as all proposed procedures should be noted. Written, signed informed consent should be noted for any proposed procedures and any verbal information given to the patient must be noted too. Results of all tests should be included as part of the patient records and abnormal results highlighted.

3. Clinical management and medication prescribed:

Details of a differential diagnosis and assessments made at the end of the consultation must be made in order to guide further management and intervention. Details of any medication or fluids prescribed must be clearly and unambiguously written. No abbreviations or drug names or doses should be made in order to prevent errors in dispensing of these either in dosage or name.

4. Referral to other healthcare providers:

Consultations for treatment or further opinions should be documented. In addition to the request for such, the feedback or intervention from the healthcare workers consulted must also be recorded in the notes.

5. Follow up and progress notes:

This should include information on the date and times the patient was booked off from work. Dates for follow up appointments and dates for repeat prescriptions for medication must be clearly indicated on the records and to the patient. Any form of counseling, advice and future referrals must be noted, even if leaflets or information sheets are given. Any patient concerns or queries must also be recorded. Repeat consultations for the same or different problem must be noted. This may be useful in cases of "doctor shopping" or when linking signs and symptoms together to identify medical syndromes. Prognosis or deterioration of the clinical condition and possible reasons for these should be indicated

The HPCSA suggests that all notes should be kept in black ink and erasure fluid should not be used.[12] Names and signatures of the clinical staff involved in the patient's care should be clearly recorded and the most senior clinician present at the time of entry must

be noted. Any abbreviations used should be standardized ones and widely accepted amongst medical colleagues. Regarding abbreviations, the MPS suggests in their Medical Records booklet that if "in doubt write it out." [5] Clinicians should be aware that abbreviations that are generally accepted, for example SOB (shortness of breath) might be misconstrued by the patient when reading their notes to mean something completely different (insulting or derogatory).

1.5 SOUTH AFRICAN LEGISLATION PERTAINING TO MEDICAL RECORDS

There are a number of legal requirements regarding the keeping of medical records in South Africa.

The Child Care Act No. 35 2005, the National Health Care Act 2003, the Criminal Law Amendment Act 2007, the Promotion of Access to Information Act 2000 and the Choice of Termination of Pregnancy Act No. 92 of 1996 all have information relevant to medical record keeping.[12] These aforementioned Acts refer only to access to medical records and do not govern the quality or content of medical records.

The Childrens' Act No 35 of 2005, Sections 12, 13, 133, and 134, states that every child has a right to confidentiality regarding their health status and medical records.[19] Information about the child's virginity, HIV status, contraceptive use and all other medical and surgical information should not be divulged without the child's consent.

The National Health Act, 2003 not only obliges all healthcare establishments to create and maintain a health record for every user of the establishment but also obliges them to respect patient confidentiality.[15] It also indicates circumstances in which records can be disclosed and when access to records can be given, as well as protection of records from a confidential and security point of view.

The Criminal Law Amendment Act 2007, directives 3 and 5 specify confidentiality requirements for certain types of medical information such as HIV results and J88 (assault records for police investigations) information.[16] While the HIV diagnosis is recorded this information is regarded as confidential and can only be divulged by the patient should he/she so wish. J88 information of injuries occurring as a result of trauma, which will be used in a criminal case, is also confidential but can be subpoenaed by a court of law as evidence and can be disclosed to the defense lawyer if a court order is obtained.

The Promotion of Access to Information Act 2000 gives everyone the right of access to records held by either a Public or Private institution. It allows for access to health records and the conditions in which the patients' information can be accessed.
According to the Act, in a Public Hospital the care and control of records is under the jurisdiction of the superintendent of that hospital. The conditions under which access to information in these records are allowed, is stipulated in the Access to Information Act. Patients are entitled to copies of their records provided it does not put their own or

another person's health or wellbeing at the risk and all information about third parties is excluded from the records. While the records remain the property of the doctor or hospital, the patient is entitled to a copy of these. [17]

Records can also be used and can be disclosed in instances where the doctor is a witness in a trial between a patient and another party, the doctor and a third party or in a sexual assault or child abuse case. This is stipulated under the Children's Act 2005 [19] and the Criminal Law Amendment Act 2007.[16]

The Choice of Termination of Pregnancy Act No. 92 of 1996, Section 7[18] and The Children's Act 35 of 2005, Section 12, 13, 133, and 134[19] indicate the importance of record confidentiality specifically with regards to women and children. It also stipulates when the record can be accessed by the woman or child involved and when it can be accessed by others.

Solicitors, police and family can only claim access to the health care records of a patient if consent is first given by the patient him/herself to release that information. If the patient is not mentally capable of doing so, legal intervention by means of a court order can allow access to medical records.

1.6 HOW GOOD ARE CLINICAL RECORDS ABROAD AND IN SOUTH AFRICA?

The MPS in South Africa and similar international review boards audit clinical records in their respective countries to track compliance with the published guidelines and to measure improvement.

The Audit commission in the United Kingdom (UK) published results of a study on record keeping in the National Health System (NHS) hospitals in England in 1995.[43] They found the standard to be poor and the key issues identified that needed addressing were: the low priority given to records management, lack of awareness of the importance of good record keeping, the lack of information sharing, and the need to maintain confidentiality. These themes were repeated in the report of the Public Inquiry into children's heart surgery at the Bristol Royal Infirmary.[32]

Mackay, [33] in his review of records kept on people with mental illness who had committed homicide, found a lack of clarity of planning, poor record keeping and inadequate communication between key players. The healthcare workers involved may have been able to play in pivotal role in preventing these homicides had there been better record keeping, better communication and better coherence between the different disciplines involved. This illustrates the key role of good medical records.

The Medical Defense Union in the UK highlighted medico-legal problems which arose from "poor, inadequate or absent notes," [43] as did the MPS in South Africa. They stressed the importance of clear, concise, contemporaneous notes, which primarily served to enhance patient care but also to protect the doctor's interests.

Lack of structure, disorganization, illegibility, absence of problems or diagnosis, and undated or unsigned entries were just some of the deficiencies found by the London's Health Informatics Unit (HIU) of the Royal College of Physicians (RCP).[4] In 2002, the RCP HIU had audited 149 notes in state hospitals in England and Wales and found that 35% of the case notes were without a problem list, 29% had no patient identification, and 9% of all entries were illegible, 10% were unsigned and 11% undated and 83% of all entries did not identify the lead clinician present. Similar deficiencies were found when discharge summaries were edited.[4]

Rodriguez-Vera et al [36] found 15% of the records reviewed in Spain were so illegible they were rendered meaningless. Wilson et al [37] found that half of the medical records reviewed in Australia had a "severe deficiency" of important items in the records in that they were illegible, incomplete or disintegrated.

These studies all showed that despite the importance of good clinical record keeping both for patient care and to protect the doctor's best interests, the clinical records assessed were of a general poor quality. Although there appears to be no extensive research done

in South Africa, the following South African studies do seem to agree with the information obtained from abroad.

Surgical department records in South Africa were grossly inadequate in applying the standards set out for adequate records.[21] When surgical case notes at Prince Mshiyeni Hospital in Durban were compared with guidelines set out by the Royal College of Surgeons of England, they found that incomplete and illegible notes, along with confusing abbreviations were a common source of weakness in litigation against surgeons. The results of the study showed that 65% of records were legible and patients' names were present on only 71% of records. Only 16% of records had the time recorded while the physician's name was on 8% of the records. Surprisingly, only 61% had a record of the presenting complaint while allergies were recorded in 59%, past medical history in 76%, bio-psychosocial history in 34% and patients' medication was recorded a mere 47% of the time. They concluded that medical records were grossly inadequate in many respects, and better education of junior staff and regular auditing of medical records could improve this.

Ellison et al[26] compared the reliability of hand written and computerized records of birth data during the *"Birth to Ten Study"* at Chris Hani Baragwanath Hospital in Soweto. Both sets of data showed similar levels of reliability as the computerized records were obtained from the written ones. Categorical variables such as infant sex and continuous variables such as maternal age and gravidity showed higher reliability than variables such as birth weight and gestational ages, which were often not recorded. The written record

and hence the computerized records, contained complete data with a range of between 1% and 52.4% of required information being recorded.

Raff M and James MFM, in auditing anaesthetic records in Kwa Zulu Natal,[27] found less than one third of all records were complete or legible. In one quarter of all anaesthetic notes, no record of any kind was made. In 45%, the notes were incomplete or illegible in some or all respects. Less than 35% of records were properly completed even though a pre-printed anaesthetic record was available in the hospital at which the study was conducted. They concluded that only 29.9% of anaesthetic records met the minimum standards required for data entry and legibility. This not only represents unacceptable practice, but also places anaesthesiologists whose records are inadequate or incomplete, at serious medico-legal risk.

1.7 WHAT HAS BEEN DONE TO IMPROVE CLINICAL RECORDS?

In attempting to rectify these deficiencies, studies have shown the advantage of using structured standardized pro-forma record forms. The benefits of standardizing structure and clinical content of a record form can lead to improved patient management and safety by reducing opportunities for ambiguity or omission of data. Rogers JL and Haring OM, in assessing how improved structure of medical records affected patient outcomes, showed that the number of days that patients were readmitted decreased as a result of using structured records.[38]

A randomized control trial assessing how improved structure of medical records affected doctors' performance by Humphreys et al showed that completeness of documentation increased significantly with a preformatted structured record form.[39] Similarly results by Belmin et al [40], Robinson et al [41] and Town et al[42] showed improved and increased completeness of documentation with structured preprinted record forms. Paper pro-formas can be developed using these standards with confidence and will help improve ease and accuracy in communication of clinical information, the quality and safety of clinical practice and the accuracy of clinical coding.[39]

Pre-printed admission proformas, used in the ED, improved the quality of information recorded by making the information more comprehensive and structured. [39] Junior staff found these easier to use and they allowed patients to be assessed faster and fewer errors were recorded. Filling in proformas required less writing and the use of tick boxes helped prevent problems of retrieving information caused by poor writing.[39]

Duggan et al noted an improvement in completeness of documentation among house doctors in an urban teaching paediatric primary care clinic in those choosing a structured encounter form versus those using free text.[28] Age specific structured encounter forms improved completeness of documentation of paediatric well-child examinations done by doctors.[31]

Other authors [29, 30] concluded similarly that structured record forms acted as a guide which prompted specific items to be recorded, required less writing when tick boxes were

used and in the long run were completed in shorter times than an unstructured free text form. These comprehensive, structured records also became a source of information for research.

The British Audit Commission [43] recommended that there should be one folder per patient, an agreed structure to the record, and standards for content. These recommendations are supported by findings that indicate that structure can improve patient outcomes. These structured forms were easier and quicker to complete, improved clinical decision making, limited clinical errors and reduced costs of healthcare.

In the Journal of the Royal College of Physicians in Edinburgh 2004[3], the editorial entitled *"The Core Medical Record: Seeing the Wood and the Trees"* illustrated that structured forms can improve record keeping by making the recording process easier, by making information readily identifiable, and by acting as a memory prompt when items of evidence have not been collected.

Uniformity in forms and documentation standards within an academic complex or provincial health care system will also be of benefit to the education of registrars and medical students rotating through different departments and institutions and this will further enhance recording of information, as they will not have to get used to new forms of record keeping at each new department and hospital.

RATIONALE FOR THE STUDY

In the South African public sector health environment where there are severe limitations on doctors' working hours, very limited continuity of care, chronic illnesses such as HIV and AIDS which require care over long periods of time, contact with different health care workers at each successive consultation, as well as frequent rotations by the doctors, medical records need to be optimal to provide quality patient care. The available studies show that suboptimal record keeping is a problem that applies both abroad and in South Africa. [30,35,36]

The existing record form used in the Emergency Medicine unit (EMU) at the CMJAH to clerk non emergency patients is a single sheet with a boxed off area on top of the page for patient details, a larger central area for all the doctors' notes and a boxed area at the end for the doctors name, signature and date. (Appendix 1) Anecdotally it appeared that the information obtained using this form was deficient in that there was no structure, the notes were disorganized, illegible, unsigned, undated and often did not have a problem list or diagnosis. Furthermore numerous queries relating to patient care and outcome both from patients and their families as well as from lawyers or HPCSA, were inadequately dealt with due to an absence of or very poorly kept records.

Attempts to improve the record keeping in the EMU at CMJAH using the old form were tried. Workshops were arranged to present the HPCSA guidelines and their importance and the consequences of not completing the records adequately. There were also workshops from the MPS explaining what a clinical record should contain and how to complete these. These measures did not appear to have had any change in record keeping by the doctors in the EMU, although positive changes were never formally researched.

In order to determine the extent of the problem of medical record keeping in an EMU, the researcher sought to formally assess the quality of the existing records in complying with standards and guidelines set out by the HPCSA. Subsequent to the initial audit there was an intervention, with the introduction of a structured preprinted proforma, which was then audited to determine if that new form led to any improvement in the quality of record keeping. A structured preprinted proforma has been shown to improve record keeping in other countries.[37,38,39]

AIM OF THE STUDY

The aim of the study was to assess whether the introduction of a new structured record form improved the quality of patient records in the EMU of a public hospital in Johannesburg.

OBJECTIVES OF THE STUDY

1. To compare compliance of existing record forms with the HPCSA's guidelines for record-keeping. (Baseline)

2. To compare compliance of records on the existing form with records on the new structured form at one and three months after the introduction of the new form. (One and Three months post intervention)

3. To determine which individual variables were most likely to be missing at the three time points in the study.

CHAPTER TWO:

METHODOLOGY

2.1 SITE OF STUDY

The Charlotte Maxeke Johannesburg Academic Hospital is a tertiary–quaternary hospital in the northern suburbs of Johannesburg. It is a 900-bed hospital with doctors at all levels of qualification, from medical officers and interns to academic professors. The Emergency Medicine Unit (EMU) sees approximately 3000 adult patients per month. The EMU has a Triage area, a resuscitation bay with three beds, a non-acute area for non-emergency patients and a clinical decision ward.

The non-acute area of the EMU, which attends to the more chronically ill patients, was the focus of the study. These are ambulatory patients, who would otherwise be seen by a General Practitioner and who often have chronic pathology as opposed to acute illness. The EMU is staffed by ten full – time doctors. The same doctors were present throughout the period of the study. These doctors are in the positions of Medical Officers and Principal Medical Officers.

2.2 STUDY DESIGN

The study followed a cross–sectional review of patient files to examine records of non-emergency patients taken by doctors in the Emergency Medical Unit at the CMJAH, both before and after the introduction of a new structured record form.

Quality assurance principles used for the study were identifying the problem, deciding interventions, implementing these interventions and then assessing the effectiveness of them by means of reassessing the state of record keeping after the intervention.

The study, its design and aims were explained to the doctors involved and they were an integral part of the study. Regular meetings were held between the doctors and the researcher to review the HPCSA guidelines for good records. The doctors were also encouraged to give suggestions and comments on the best way to improve the old record form. Any objections, queries and concerns raised by the doctors were dealt with at the Quality Assurance meetings and feedback sessions. These sessions were held as part of the EMU's academic meetings, every Wednesday morning. The doctors in the study whose records were reviewed were the same both before and after the intervention. Training was provided to the doctors on the reasons for the intervention and on how to complete the new form.

Training was done both before and after the introduction of the new form at the weekly meetings held in the EMU. The existing records were audited and scored, the new forms (Appendix 2) were introduced and records audited and scored again both at one and three months after the introduction of the new form. Doctors were aware that existing forms (Appendix 1) and the new structured forms were to be audited and scored at one month after the introduction of the new form to assess the compliance in completing the new form. The audit and scoring of forms at three months after the introduction of the new form was done without any further training or notice to the doctors (maintaining all

confidentiality as above) in order for the researcher to determine if the completion of the new forms was maintained or not. Confidentiality of the doctors was maintained and no identifying data was recorded on the data sheets. The results from all three study periods were collated and analyzed.

2.3 STUDY POPULATION

Records of adult non-emergency patients seen and clerked in the EMU were reviewed for each time period for all doctors who worked in the EMU across the time periods of the study.

2.4 INCLUSION CRITERIA

The records of the following categories of patients were included:

- Adult patients who had been triaged into the Unit to be seen by one of the doctors.
- Patients who did not require acute resuscitation but were still ill enough to be seen in the EMU
- Patients who were seen and either admitted to the hospital or discharged once seen.

2.5 EXCLUSION CRITERIA

Medical records of the following groups of patients were excluded:

- All patients who were triaged out of the EMU or whose information were recorded on a different form to the general one used in this study
- Patients down-referred to a local clinic
- Patients clerked by one of the specialist Registrars who had been requested to see a patient in the Unit

2.6 SAMPLING

All patient records from each of the ten doctors, were collected for the **Baseline** sample period from the 1st January 2009 to the 28th February 2009. A new structured form was introduced on the 1st March 2009. The same process for sampling and data collection was followed **1 month** after the baseline from the 1st to the 31st March 2009. The sampling was repeated at **3 months** after baseline from the 1st to the 30th June 2009, after the introduction of the new form.

Assuming a 5% significance level, 80% power and a difference of 10%, a sample size of 219 medical records for each period of the study was required. The assumption was that none of the variables would be recorded and that there was an expected improvement of at least 10% between the periods. If there was a true improvement between the baseline and one and three months after the introduction of the new form then this would be seen with 80% of probability. The sample size was calculated using Epi-calc. A design effect of 1.5 was not used to eliminate selection bias as the sample size appeared large enough.

For each collection period, the completed records for ach doctor were collected into separate piles at the end of the first shift. The records from subsequent shifts over the full time periods were then added to the original pile. At the end of the collection period, every fifth record was selected from each doctors' pile until a sample size of 22 records was obtained for each doctor for each period of the study. As doctors saw an average of 25 patients per shift, with an average of at least five shifts for each period of the study,

this meant that between 4 or 5 records per shift was selected. Selecting 22 records for each of the ten doctors resulted in a total of 220 records for each phase of the study, which is sufficient to provide the study with 80% power.

Each record was allocated a number to identify the phase of the study.

1- baseline: the review of the old record forms,

2- one month after the introduction of the new form and

3- three months after the introduction of the new form.

Two other numbers identified the doctor number from 1 -10, and a record number from 1- 220. Each of the records for the period of the study was duplicated by means of a carbon copy. The original remained in the patient's file and the copy was collected for the study.

2.7 DATA COLLECTION

Sixteen individual criteria, which had been identified from the HPCSA's guidelines (Appendix 4) for an adequate record form, were drawn up onto an audit sheet. (Appendix 3) The audit sheet was used to collect data from each record form. The criteria are as follows: personal identifying data of the patient, bio-psycho-social history, time, date and place of consultation, assessment of patient's condition, clinical management of the patient, medication and dose, any referral of the patient, investigations and results and consent from the patient for procedural intervention.

Each record form was then audited to determine whether the doctor had recorded a particular variable or not. This was recorded onto the audit sheet as either a YES (Y)- is recorded on the record form or NO (N)- not recorded. This process was carried out for each of the 220 records for each the three time periods in the study.

The **Total Patient Score** was calculated as a score of the total yes responses out of the 16 variables on the audit sheet. A total patient score was recorded for each patient record form. Scores for smoking and alcohol were grouped together under "habits" and ECGs, X-rays and blood tests under "investigations". Therefore, if doctors recorded a Y for either alcohol or smoking then this scored one Y for habits. **The Doctors Score** was then calculated as the mean of the total patient score for the 22 total patient scores for each doctor for each time period.

2.8 DATA ANALYSIS

Epi-info was used to create data fields to record the variables on the data sheet and whether these variables were recorded or not on each record sheet for each of the three periods. All data obtained from the audited records was collated and analyzed using Epi-Info Version 3.4.1.

Analysis included descriptive analysis of key variables at all three points. For all variables audited from the record forms, greater than 90% recorded was taken as an

acceptable level of recording and less than 10% as poor. Frequency tables showing how many variables were recorded compared to numbers not recorded for each variable at each time point were recorded.

Means and standard deviations were computed for total patient scores for each period and for each doctor in each period.

To determine whether there were any significant differences in patient scores between baseline recordings and one month and baseline and 3-month recordings, paired t-tests were performed. Total patient scores were compared between the doctors for each collection period, baseline, 1 month and 3 months using a one-way ANOVA.

2.9 SOURCES OF BIAS

There was a possibility of doctors being more diligent at completing the forms one-month post intervention because they knew their records were being audited and hence the secret assessment at three months was introduced to reduce this bias.(Hawthornes effect)

Top down bias from the Researcher was avoided in that there was voluntary participation from all the staff, and all were encouraged to cooperate in the study and training was also provided to all doctors on how to use the form. Doctors were also given an option of not

participating in the study should they not feel comfortable. All ten doctors agreed to be part of the study once the aim of the intervention was explained to them.

Selection bias was avoided by sampling an equal number of records for each doctor, thereby avoiding the selection of more forms from one doctor as compared to another. These forms were also selected from all shifts that the particular doctor worked, thus preventing a bias of forms by time of day, which may affect the completeness of records.

2.10 ETHICAL CONSIDERATIONS

All attempts were made to conduct the study in a manner in keeping with good ethical principles. There was no identifying information on the audit forms. Audit forms and the carbon copies of the patient records were allocated a number to allow for the cross-referencing of information from the doctors notes and the audit forms. The numbers allocated to the doctors in the study (1-10) were randomly assigned and only the researcher knew which number was assigned to a particular doctor.

Patient confidentiality was maintained at all times. No separate informed consent was obtained from the patients as only the completeness of their records was assessed. Furthermore, no medically relevant data was extrapolated from the notes, only whether certain features were recorded or not.

Informed consent from the participating doctors was not obtained as a separate entity. The quality assurance nature of the study implied tacit consent from each participating doctor as the study involved the doctors in the whole process.

The Human Research Ethics Committee of the University of the Witwatersrand approved the study - M080526. (Appendix 5) Permission to conduct the study was also obtained from the CEO of the CMJAH Hospital.

All costs for the research were borne by the Researcher.

CHAPTER THREE:

RESULTS

3.1 DEMOGRAPHICS OF DOCTORS IN THE STUDY

The doctors comprised four medical officers and six principal medical officers. There were three female and seven male doctors.

3.2 VARIABLES RECORDED AT BASELINE, ONE MONTH AND THREE MONTHS POST INTERVENTION

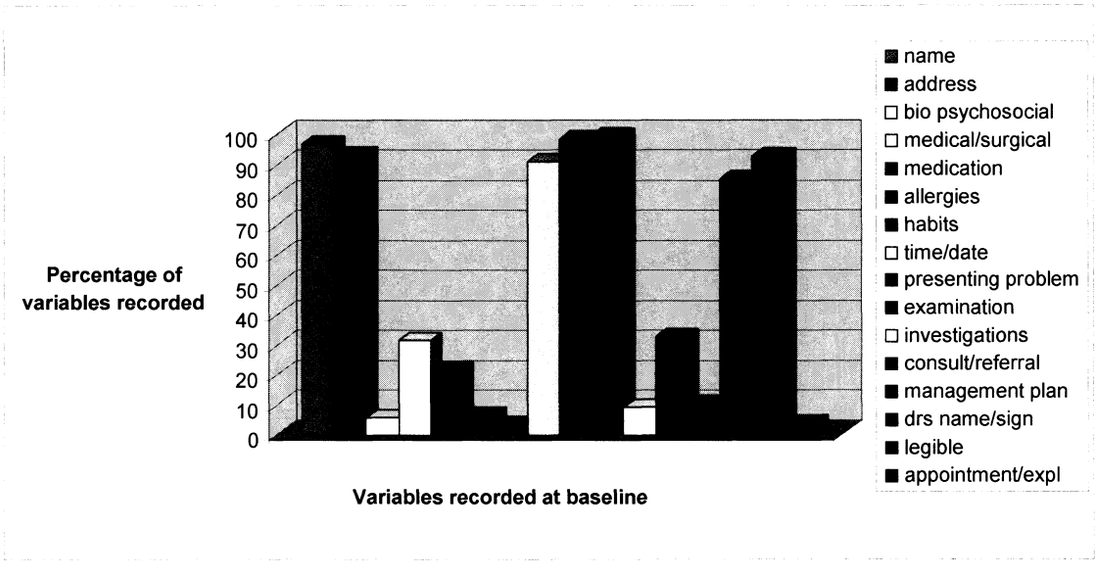


Figure 1: Percentage of variables recorded at Baseline (n=220) compared to those prescribed by the HPCSA guidelines.

Name and address of patient, time and date, presenting problem and examination (Figure 1) all showed a greater than 90% rate of being recorded. Legibility of records was present 92.7% of the time, even though the doctors had to do all the writing on the existing free text form.

The categories: bio-psychosocial history, allergies, habits, investigations, appointments and explanations to patients all recorded scores of less than 10%. Bio-psychosocial

history was only recorded in 5.5% of records and habits only in 3.4%. Referral to specialists was only documented 72 times (30%).

Only six of the sixteen variables audited for at baseline showed more than 90% frequency of being recorded. The name, address and time being recorded on the patient demographic sticker generated at the time the file was opened for the patient – three of the six compliant variables thus being present not as a result of the doctor actually recording these. The presenting problem and examination, as well as legibility, were in fact the only actual recorded variables present at baseline.

Although doctors name and signature was present on 85% of the records this was not an acceptable level, i.e. greater than 90%. Thus ten out of the sixteen variables were not being recorded at an adequate level in order to be compliant in this study.

Difference in variables recorded at One month compared to Baseline

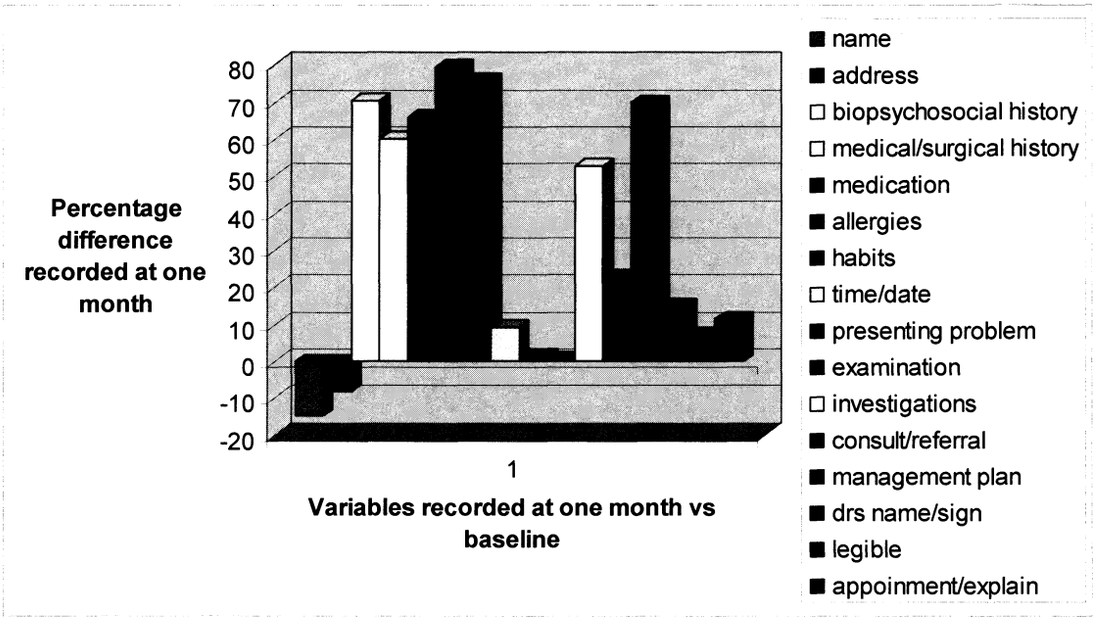


Figure 2: Percentage difference in variables recorded on patient records at one month compared to baseline (n=220)

The difference in variables recorded at one month from baseline showed that variables that were being recorded less than 10% of the time at baseline such as bio-psychosocial history, medication, medical and surgical history, medication, allergies habits and management plan, improved by between 60 – 70% at one month after the introduction of the new form. The reporting of the patient name and address showed a higher frequency of NOT being recorded at one month vs. baseline. Variables such as examination and presenting problem which already showed frequency of being recorded at 99 and 98% respectively, showed only a 0.5 and 1.3% difference at one month.

Consultation/referral, doctor's name/signature, legibility and appointment/explanation to patient all showed a difference of less than 15% from baseline.

Percentage of variable recorded at three months post intervention

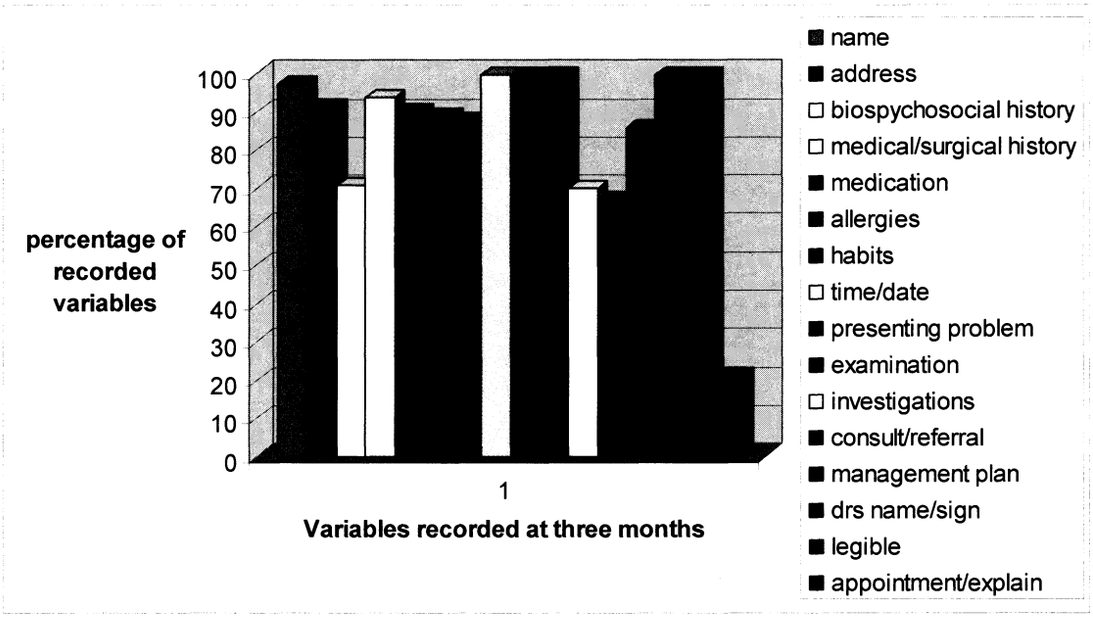


Figure 3: Percentage of variables recorded at three months post intervention (n=220)

At three months after the introduction of the new form, eleven of the sixteen variables were being recorded more than 90% of the time and none were recorded on < 10% of the records.

Difference in variables recorded at three months compared to baseline

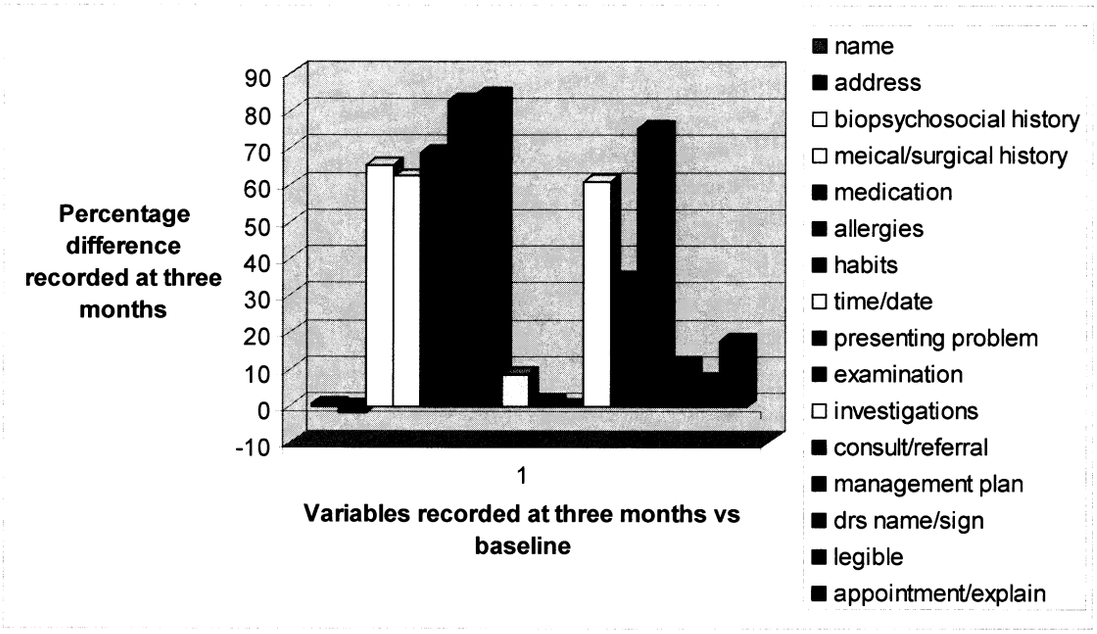


Figure 4: Percentage of variables recorded at three months compared to baseline (n=220)

The difference at three months post intervention from baseline showed that four variables, i.e. name, address, examination and presenting problem showed a less than 2% change. However, allergies and habits were now being recorded more that 80% of the time compared to baseline.

Bio-psychosocial history, medication, medical/surgical history, investigations and management plan were being recorded between 60 to 75% more of the time compared to baseline. The rest of the variables showed little change from baseline.

Percentage difference in variables recorded at one month VS three months post intervention

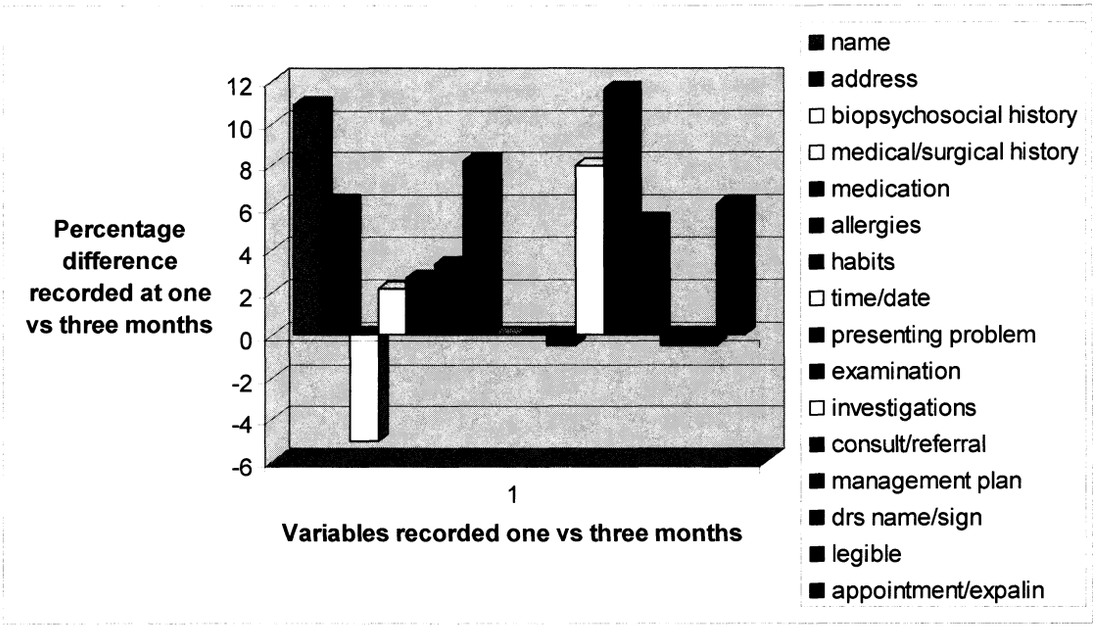


Figure 5: Percentage difference recorded at one month compared to three months (n=220)

The difference in variables recorded at three months compared to one month showed that none of the sixteen variables being audited had changed by more that 12%. Bio-psychosocial history, examination, doctor's name/signature and legibility were marginally better at one month compared to three months. Eight of the sixteen variables at three months were better than at one month by less than 10%.

Total doctor scores at baseline, one and three months post intervention

At baseline, doctors completed a mean of 50% of the variables, which significantly improved to 87.5% in the first month after introduction of the new form ($p<0.001$) (Table 1)

Table 1: Mean doctor scores at baseline and 1-month post intervention (n=22)

DOCTOR CODE	MEAN AT BASELINE (SD)	MEAN AT ONE MONTH (SD)	% DIFF BETWEEN ONE MONTH AND BASELINE
DR 1	9.95 (1.68) *	14.27 (2.64)	27
DR 2	8.59 (1.45)	14.13 (2.39)	35
DR 3	7.77 (1.25)	10.09 (1.71) #	14
DR 4	7.95 (1.36)	14.09 (1.60)	38
DR 5	7.68 (1.67)	13.63 (2.38)	37
DR 6	7.59 (1.53)	15.22 (1.37)	48
DR 7	7.40 (1.46)	12.22 (2.24)	32
DR 8	7.72 (0.93)	15.18 (1.70)	47
DR 9	9.72 (1.27) *	15.95 (0.95) **	39
DR 10	9.36 (2.10) *	16.00 (1.16) **	41
MEAN	**8.37 (0.91)**	**14.12 (1.02) *** **	**22.4**

* $p < 0.05$ compared to other doctors at baseline

** $p < 0.001$ significantly different to other doctors at 1 month

*** $p < 0.001$ compared to baseline

$p > 0.05$ compared to baseline

All doctors showed a significant improvement from baseline to the first month, except Doctor 3 who was the only doctor at 1-month post intervention to show no improvement ($p>0.05$). All statistics were done with Repeated Measures Analysis of Variance – ANOVA post hoc analysis.

Doctors' 1, 9 and 10 showed highest recording of variables with the unstructured record form at baseline. The average mean doctor scores were significantly improved at one month after the introduction of the new form ($p<0.05$).

The mean doctors scores 3 months after introduction of a new form compared to baseline and 1 month data are shown in Table 2.

Table 2: Mean doctor scores at 3 months post intervention compared to baseline and 1st month

DOCTOR CODE	MEAN AT 3 MONTHS (SD)	%	% CHANGE FROM BASELINE	% CHANGE FROM 1ST MONTH
DR 1	15.71 (1.76)	98	36	9
DR 2	15.18 (1.13)	95	42	7
DR 3	9.00 (1.69) #	56	7	-7
DR 4	13.31 (3.09)	83	33	-5
DR 5	15.22 (1.23)	95	47	10
DR 6	15.13 (0.88)	95	48	0
DR 7	14.50 (1.22)	91	45	17
DR 8	16.00 (1.08)	100	52	5
DR 9	16.00 (0.78)	100	39	0
DR 10	16.00 (1.09)	100	41	0
MEAN	**14.65 (0.87)***	**57**	**24.4**	**2.25**

$p > 0.05$ compared to baseline and 1 month

* $p < 0.001$ compared to baseline

There were no significant differences between Doctors 1, 2, 5, 6, 8, 9 and 10 who were on par (i.e. Seven doctors improved at three months). Doctors 4 and 7 were lower than 8, 9 and 10 but not significantly different from each other.

The mean doctor score at 3 months was significantly different to baseline, but not significantly different to one month values ($p > 0.05$).

CHAPTER FOUR:

DISCUSSION

4.1 DISCUSSION OF RESULTS

There was a statistically significant improvement of the results from baseline compared to both one-month post intervention and three months post intervention but the improvement between one and three months was not significant. The improvement at three months post intervention was important in that it showed a continued compliance with the completion of the new form even when doctors thought their records were not being audited. This implied that this improvement of the recording of variables was due to better compliance by the doctors and that the new structured form was being completed to a greater degree as the preprinted, largely tick box form acted as a prompt and reminder for certain variables to be recorded. These new records were also compliant with the guidelines for an adequate record form in that they contained all the variables set out by the HPCSA.

Variables such as name, address and time/date were recorded in the majority of records throughout the three periods of the study. This was due mainly to these variables being printed on a computer-generated sticker, which was put onto the patient record and the file. The preprinted patient sticker was generated when a patient file was opened in the Unit. This sticker was placed both on the file and the record form. The high frequencies of these variables being recorded was attributed largely to these preprinted stickers.

The recording of these variables was difficult to attribute to the doctors themselves as they already were on the preprinted stickers. When name and address were not recorded as determined by the audit sheet, it was usually because the records did not have a patient sticker on them. Of concern is that, in the cases of forms with no pre-printed sticker, the doctors did not write this information in despite their being a preprinted area on the new form for this information. Perhaps they were so used to this information being printed that they just did not think to do it. This was further supported at one- month post intervention when the recording of name and address decreased from baseline and was found to be due to the fact that the sticker-printing machine was not working for a short time during this phase of the record audit.

The presenting problem and examination were frequently recorded across all three periods – even at baseline when a free text record form was being used. These were the only two variables that were recorded on the existing form without any kind of prompt, indicating that the doctors all found it important to record what the patient came for and what was found on examination. The reason for the patient presentation and what was found on examination were pivotal in their management of the patient and so were recorded in more than 90% of the cases across all three periods of the study and there was no major improvement in the frequency recorded, even with the new form.

Investigations such as X-rays, blood tests and ECGs were only recorded if these were actually done on a patient. Thus variables shown as unrecorded, which were very high, meant that in addition to investigations being done and not being recorded, these

investigations may not have been done on the patient in any event. These results only indicate how many patients had in fact had investigations done on them and the unrecorded variables simply meant that no investigations were done on those patients, rather than they were not recorded. Referral to specialists also showed low frequencies of being recorded. These were recorded if the patient was referred for further management but no recording of such did not imply that the record was incomplete but rather that the patient was not referred at all. A falsely elevated frequency of not being recorded was shown when in fact the procedure was not done at all.

Despite the problems with incomplete data, variables such as investigations, referral to specialists and appointments all showed improvement in being recorded across the periods post intervention. These improvements were not as great as the others as these variables were only recorded, if in fact they were done for the patient. However the improvement noted at one and three months post intervention of the recording of these variables meant that there were instances that were not being recorded when they had been done.

Legibility of records showed a frequency of more than 90% of being recorded even at baseline – this was different to results found by the HIU in the UK, which found records to be largely illegible and disorganized.[3] In Australia records showed a severe deficiency of items and were illegible, incomplete and unintegrated.[37] Rodriguez-Vera also found 15% of records to be illegible in Spanish records audited. [36]

In SA the studies done by Raff and James in Kwa Zulu Natal looking at anaesthetic records, at least a third of records were illegible. [27] Chamisa and Zulu found similar results in surgical records, which were found to be illegible or incomplete. [21]

The audit of existing records (baseline) showed that many of the essential variables such as bio-psychosocial history, medication, allergies and habits had a low frequency of being recorded (< 10%). The recording of these variables improved significantly at one month with the introduction of the new structured record form, which acted as a prompt/ reminder for these to be recorded. Three months post intervention again showed an increase in the recording of these variables but to a lesser extent, which was not statistically significant when compared to the one-month results.

Mean doctors scores also improved across the three periods. This was important in that it showed that all the doctors except Doctor 3 – who would be considered as an outlier - improved their mean total patient scores throughout the study – even when they did not know they were not being audited at three months post intervention. It also showed that **all** the doctors contributed to the improved scores achieved in the study and that while some may have achieved scores higher than others, the buy in achieved by the study design helped in achieving the overall improvement. Doctors 8, 9 and 10 had reached the maximum mean score of 16/16 by the final period of the study. Doctors 1, 2, 5 and 6 had scores of greater than 15. Doctors 4 and 7 scored between 13 and 14.

The importance of a standardized, structured, pre printed proforma record form has been shown to improve record keeping and thus patient care, in many studies.[28, 31, 34, 37, 38, 39, 40] Preprinted admission records were found to be easier to use by junior doctors and allowed patients to be seen faster even though the forms appeared to be longer – this was largely because the preprinted proforma records made use of tick boxes and items which simply needed to be circled and required less writing. These records further showed that compared to free text, unprompted records (as was the existing form), the structured record forms resulted in an improvement in the completeness of documentation.

4.2 LIMITATIONS OF THE STUDY

The study was conducted in a Tertiary-Quaternary academic hospital – some doctors' behaviour could have been influenced by this in terms of being more vigilant in record keeping knowing that other academic colleagues (Professors and consultants) might be looking at these records.

Furthermore these results might not be applicable to other hospitals and clinics, which also treat non-emergency patients as the study was only conducted at one site. The use of the new record form in other settings will have to be tested in order to prove its reliability in all health settings.

There was no control group of doctors in the study to compare to. Thus the Researcher was unable to confirm whether it was the training or the prompt/reminder feature of the form, which responsible for the improvement in results.

Doctors at baseline and one month knew they were being audited and so might have changed their behavior and tried harder to complete the records more diligently. This was negated by the third period of audited records in which the new records were audited without the knowledge of the doctors in order to determine if the completion of the new records was being maintained even when the doctors did not know they were being

observed. A further limitation is that it is not known if the improved standard of record keeping has been maintained. Further studies are required in this regard.

Was the improvement in some doctors' scores due solely to the new structured record form or was it in fact that these doctors would be more diligent in completion of records whatever the form the records took? The researcher did not explore this in the study but it was noted as a possible bias in the results. Some of the doctors who started with lower mean scores at baseline had achieved very high scores by the end of the study and perhaps these doctors showed the real improvement and benefit of using a preprinted, structured proforma on which to document patient encounters.

4.3 CONCLUSIONS AND RECOMMENDATIONS

Results in this study showed, as with studies elsewhere, that the introduction of a structured preprinted record form significantly improved record keeping by doctors. The fact that these forms act as a prompt for doctors to include important variables, means that more of these variables in fact get recorded, even when doctors are not aware that their records are being audited. This results in records, which are more reliable both from a clinical management as well as from a medico-legal perspective. Furthermore, the new record form is in keeping with the HPCSA's guidelines.

Where the relevant Health Boards/ Authorities felt it was necessary to introduce a standardized, structured record form for use in the particular countries, in order to improve record keeping, it was shown to dramatically improve the standard of the records when compared to Standards that had been set out by these bodies. Similarly in the Emergency Unit at CMJAH, the introduction of a standardized record form, which was in keeping with the HPCSA's guidelines, significantly improved record keeping by the doctors.

The Researcher feels that buy in and contribution by the doctors, played an important role in facilitating the use of the new form and the continued improvement in record keeping at three months post intervention of the study confirms that the improvement was due to the new form. Better education and training would be beneficial and should be introduced

as part of both undergraduate and postgraduate training. Record audits should be done routinely and medical record departments should be given prominence in all health care facilities.

This study has shown that the introduction of a new standardized, structured, preprinted pro-forma record form which contained all the necessary variables suggested by the HPCSA's guidelines, together with the involvement of the doctors, has led to a significant improvement in total patient scores for recorded variables in medical records, as well as in individual doctor scores.

Future studies with regards to the more longitudinal effect of the new form i.e. was the improvement being maintained across time, as well as possible testing the form more widely in other health care facilities might be a precursor to creating a standardized record form for use in the South African Public health sector. This not only has implications for improved patient care, but will also facilitate the completion of one form by all doctors in all institutions.

The challenges faced by doctors in a busy Public Sector Hospital at CMJAH, in terms of record keeping, are not peculiar to this institution. As a standardized record form does not exist in South Africa to date, this study might be a precursor for such a form to be developed.

The move towards the use of computerized records in both general practice and in hospitals is one that presents particular challenges in a South African landscape – with poor rural areas, resource and staff constraints in the Public Health sector, eleven official languages and a largely computer illiterate population. The move towards developing a structured preprinted pro-forma record form appears to be the more sustainable option at this stage. Based on the results of this study, the preprinted proforma record form should be used more widely to improve record keeping.

CHAPTER FIVE: REFERENCES

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APPENDIX 1

TRIAGE	AMB	

JOHANNESBURG GENERAL HOSPITAL – ACCIDENT AND EMERGENCY
UNIT - AREA 165 / 167

PRIMARY ASSESSMENT FORM

Surname :		Name :
Age :	M/F :	ID No :
Hospital No :		Date :
Home Address :		Time Arrived :

CLINICAL NOTES	
	BP
	HR
	T
	RR
	GLU
	β HCG
	URINE
	REF TO :
	CHC
	CLINIC
	JHB OPD
	ADMIT

DIAGNOSIS :	
CASUALTY OFFICER :	SIGNATURE :
DATE :	TIME SEEN :

APPENDIX 2

JOHANNESBURG GENERAL HOSPITAL
ADMISSION MEDICAL RECORD – ACCIDENT AND EMERGENCY DEPARTMENT

PATIENT DETAILS	DATE & TIME	CLINICIAN:
Name Address Identification Number Date of Birth Age Sex		Hod: Doctor:

REFERRAL: GP/Clinic/ Other Hospital/ Self

TRIAGE: Score:

PRESENTING PROBLEM AND HISTORY OF PRESENTING PROBLEM

PAST ILLNESSES – MEDICAL AND SURGICAL HSITORY

Ischaemic Heart Disease
Hypertension
Hypercholesterolaemia
Asthma
COPD
Diabetes
CVA
Epilepsy
Peptic Ulcer
Jaundice
TB
Previous MI
DVT/PE

Procedures:

Previous Investigations

FAMILY HISTORY: Single/married/Widowed/Divorced/Partner

Family Health history

SOCIAL HISTORY

Lives: alone/carer/old age home/nursing home/sheltered accommodation

Occupation:

ELDERLY NORMAL FUNCTIONAL STATUS

Mobility	Continence	Self Care
Hearing	Eyesight	Walking Aids

ALLERGIES

Drugs:

Sensitivities:

MEDICATION

Name	Dose	Frequency	Duration	Reason for

HABITS

Smoking History Y N How Many ____ How Long _____

Alcohol Y N Units/Week ____

SYSTEMS REVIEW (Circle or delete or add text)

CVS Chest Pain Dyspnoea PND PVD Oedema Palpitations

Other

RESP Cough Sputum Y N Haemoptysis Chest Pain Wheeze Dyspnoea

Effort Tolerance Other

GIT Nausea Vomiting Heartburn Weight Loss Jaundice Abdominal Pain Blood PR

Diarrhoea Constipation Faecal Incontinence

Other

URO GENETAL Haematuria Burning Frequency Hesitancy Incontinence

Other

CNS Headaches Blackouts Dizziness Weakness Depression Anxiety

Visual Problems Other

ENDOCRINE

MUSCULAR SKELETAL

SKIN **OTHER**

EXAMINATION FINDINGS

Height _____ Weight _____ BMI _____

General Observations: Temperature: ____ Heart Rate: _____
Respiratory Rate _ _____ Blood Pressure: _____

Urinalysis: Protein _____ Blood _____ Ketones _____
Leucocytes _____ PH _____ Other _____

SaO2 : Room Air _____ O2 _____

Anaemia Clubbing Cyanosis Jaundice Goitre Lymphadenopathy Oedema Tremor Splinter Haemorrhages Other

Cardiovascular

Respiratory

GIT
PR Not done/Normal/Abnormal

Urogenital

Other Findings

NERVOUS SYSTEM AND HIGHER MENTAL FUNCTIONS

If the patient has no CNS Symptoms and no evident signs – indicate that CNS not formally examined _____

GENERAL ASSESSMENT

Glascow Coma Scale: Eyes____ Motor _____ Verbal _____ Total _____

Cognition Normal/Impaired Mini mental Score _____

Neck Stiffness Y N Photophobia Y N

Speech Normal/ Dysphasia/ Dysarthria/ Dysphonia

Swallowing Not assessed/ Safe/ Unsafe

Hearing Normal / Impaired Eyesight Normal/ unpaired

Continence Normal/Impaired Gait Not tested/Normal/Abnormal

Romberg test Not tested/Normal/Abnormal

CRANIAL NERVES

Pupils: Pupillary reflexes:

Visual Fields

Visual Acuity

Optic Discs and Fundi

Eye Movements (iii , iv, vi) Nystagmus Y N

V

VII

VIII

IX/X

XII

GLASCOW COMA SCORE (Coma = score below 8)

EYES	BEST MOTOR	BEST VERBAL	MINI MENTAL SCORE
4 = opens spontaneously	6= Obeys commands	5= orientated	Age
3 = opens speech	5= localises pain	4= confused	Recall three words at end
2 = opens pain	4= withdraws/flex	3= inappropriate words	Name Hospital
1 = never opens	3= decerebrate flexion	2= incomprehensible sounds	Year
	2= decerebrate extension	1= silent	Recognises two people
	1= no response		Date of Birth
			Dates of world War II
			Present Ruler
			Count down from 20
			Time to nearest hour

PERIPHERAL NERVOUS SYSTEM

Abnormal movements / fasciculations Y N

Muscle wasting Y N

Upper limbs	Right	Left
Power		
Tone		
Coordination		
Biceps jerk		
Triceps jerk		
Sensation		

Lower limbs		
Power		
Tone		
Coordination		
Knee jerk		
Ankle jerk		
Plantar		
Sensation		

INVESTIGATIONS

Blood

X Rays

Other

OVERALL ASSESSMENT AND PROBLEM LIST – WORKING DIAGNOSIS

MANAGEMENT PLAN

REFERRALS: Specialist Department:
Name
Time

INFORMATION GIVEN TO PATIENT

Informed Consent

Understands information and management

OUTCOME

Discharge

Admission Y N Ward _____

Follow Up

DOCTOR'S NAME _____

SIGNATURE : _____

DATE: _____

TIME : -_____

HEAD OF DEPARTMENT : _____

RESULTS OF INVESTIGATIONS

FBC	U & E	CARDIAC	ABG room air	OTHER BLOOD RESULTS
Hb	Na	CK	pH	
WCC	K	CKMB	pCO2	
Platelets	Cl	TROP T	PO2	
MCV	Urea	TFT	HCO3	
Blood film	Creat	T3	Base Excess	
ESR	Glucose	T4	ABG Oxygen	
	Ca	Tsh	FIO2	
COAGULATION	LFT	CRP	pH	
Pt	Br	GLUCOSE	pCO2	
Inr	Albumin		pO2	
Ptt	Tot Protein		HCO3	
	Alk Phos		Base Excess	
	AST			
	ALT			
	GGT			

MICROBIOLOGY

Blood CFS

Urine Sputum

Stool Other

ECG

Rate _____ Rhythm _____

Ischaemic changes:

CXR OTHER RADIOLOGY

DOCTOR'S NAME _____ SIGNATURE: _____

DATE: _____ TIME: _____

APPENDIX 3

RECORD NO ; _____(1 – 220)

DOCTOR CODE NUMBER ; _____(1 – 10)

RECORD NUMBER FOR DOCTOR ; _____(1 – 22)

RECORD REVIEW FORM OF DOCTORS' ADMISSION RECORDS

	Y	N
1 Name		
2 Address		
3 Biopsychosocial history		
4 Past medical /surgical history		
5 Medication		
6 Allergies		
7 Habits and risks - smoking		
- alcohol		
8 Time and date of admission		
9 Presenting problem and current diagnosis		
10 Examination and vital signs		
11 Investigations - Blood tests/urine/sputum		
- Xrays / Scans		
- ECGs		
12 Consultations/ Referrals to specialists/clinics/allied		
13 Management plan		
14 Doctor's name and signature		
15 Notes legible		
16 Follow-up – appointments at clinic		
- explanations to patients documented		

APPENDIX 4

HPCSA
Health Professions Council of South Africa

MEDICAL AND DENTAL PROFESSIONS BOARD

GUIDELINES FOR GOOD PRACTICE IN MEDICINE, DENTISTRY AND THE MEDICAL SCIENCES

GUIDELINES ON KEEPING OF PATIENT RECORDS

BOOKLET 11

PRETORIA
OCTOBER 2002

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THE SPIRIT OF PROFESSIONAL GUIDELINES

Medicine, dentistry and the medical sciences are professions based on a relationship of trust with patients. The term "profession" means "a dedication, promise or commitment publicly made".[1] To be a good doctor, dentist or medical scientist requires a life-long commitment to good professional and ethical practices and an overriding dedication to the good of one's fellow humans and society. In essence, the practice of medicine, dentistry and the medical sciences is a moral enterprise. In this spirit the Medical and Dental Professions Board presents the following ethical guidelines.

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[1] Pellegrino, ED. Medical professionalism: Can it, should it survive? *J Am Board Fam Pract* 2000; **13**(2):147-149 (quotation on p. 148).

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GUIDELINES ON KEEPING OF PATIENT RECORDS

These guidelines are applicable to medical practitioners and dentists in private practice (including managed health care organisations), as well as to those in the employ of the public service.

1 DEFINITION OF A MEDICAL RECORD

According to de Klerk, the expression a *medical record* may be defined as follows:

"A medical record is constituted by any record made by a medical practitioner at the time of or subsequent to a consultation with, an examination of, or the application of a medical or surgical procedure to his or her patient and which is relevant thereto." [2]

A medical record contains the information about the health of an identifiable individual recorded by a doctor or other health care professional, either personally or at his or her direction. [3]

2 WHAT CONSTITUTES A MEDICAL RECORD

2.1 Flowing from the above definition, the following documents are listed as essential components of a medical record, obviously depending on the nature of the individual case:

2.1.1 Hand-written contemporaneous notes taken by the attending doctor or other health care worker.

2.1.2 Notes taken by previous attending doctors or other health care workers, including a typed patient discharge summary or summaries.

2.1.3 Referral letters to and from other health professionals.

2.1.4 Laboratory reports and other laboratory evidence such as histology sections, cytology slides and printouts from automated analysers, X-ray films and reports, ECG traces, etc.

2.1.5 Audiovisual records such as photographs, videos, tape-recordings.

2.1.6 Clinical research forms and clinical trial data.

2.1.7 Other forms completed during the medical interaction such as insurance forms, disability assessments and documentation of injury on duty.

2.1.8 Death certificates and the autopsy report.

2.2 The above records may be archived on microfilm, microfiche or magnetic data files.

3 WHY DOCUMENTS OR MATERIALS SHOULD BE RETAINED

Documents and materials are to be retained in order to -

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2 de Klerk A. The right of patients to have access to their medical records: the position in South African law. *Medical Law*, Vol 12, 1993, pp. 77 - 83

3 *Making and keeping medical records*. MPS Casebook 13 (International), July 2000, 6-8

- further the diagnosis or ongoing clinical management of the patient;
- conduct clinical audits;
- to promote teaching and research;
- use the data for administrative or other purposes;
- keep as direct evidence in litigation;
- use as research data;
- keep for historical purposes;
- promote good clinical and laboratory practices;
- make case reviews possible;
- serve as the basis for accreditation.[4]

4 COMPULSORY KEEPING OF RECORDS

4.1 Medical practitioners and dentists shall enter and maintain at least the following information for each patient consulted:

4.1.1 Personal (identifying) particulars of the patient.

4.1.2 The bio-psychosocial history of the patient, including allergies and idiosyncrasies.

4.1.3 The time, date and place of every consultation.

4.1.4 The assessment of the patient's condition.

4.1.5 The proposed clinical management of the patient.

4.1.6 The medication and dosage prescribed.

4.1.7 Details of referrals to specialists, if any.

4.1..8 The patient's reaction to treatment or medication, including adverse effects.

4.1.9 Test results.

4.1.10 Imaging investigation results.

4.1.11 Information on the times that the patient was booked off from work and the relevant reasons.

4.1.12 Written proof of informed consent, where applicable.

4.2 Records shall be kept in black ink and erasure fluid shall not be used.

4.3 See also the ethical rule on signing of official documents which reads as follows:

> *"Rule 14. Any student, intern or practitioner who, in the execution of his or her professional duties, signs official documents relating to patient care such as prescriptions, certificates, patient records, hospital or other reports, shall do so by signing such document next to his or her initials and surname in block letters."*

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[4] Royal College of Pathologists, Marks and Spencer Publications Unit. *The retention and storage of pathological records and Archives, London, Royal College of Pathologists,* 1995

5 ALTERATION OF RECORDS

5.1 No information or entry may be removed from a medical record.

5.2 An error or incorrect entry discovered in the record may be corrected by deleting it with black ink and correcting it. The date of change must be entered and the correction must be signed in full. The original record must remain intact and fully legible.

5.3 Additional entries added at a later date must be dated and signed in full.

5.4 The reason for an amendment and/or error shall also be specified on the record.

6 RETENTION OF RECORDS

6.1 Records shall be stored in a safe place and if they are in electronic format, safeguarded by passwords. Practitioners should satisfy themselves that they are informed of the Board's guidelines with regard to the retention of patient records on computer compact discs.

6.2 Records shall be stored for a period of not less than six (6) years as from the date they became dormant. In the case of minors and those patients who are *non compos mentis*, medical practitioners and dentists should use their own discretion whether the records concerned should be kept for a longer period.

6.3 Notwithstanding the provisions in paragraph 6.2 hereof, the records kept in a provincial hospital or clinic shall only be destroyed if such destruction is authorised by the Deputy Director-General concerned.

6.4 Apart from the obvious clinical reasons for keeping medical records, there are a number of other factors which may influence the period for which they should be kept. No clear-cut rules exist. The United Kingdom Department of Health specified, for example that -

6.4.1 obstetric records should be kept for twenty-five years;

6.4.2 records relating to children should be kept until the patient's 25th birthday (thus allowing 3 to 4 years after reaching majority to enable the individual to submit a claim, should there exist any grounds for such a plan);

6.4.3 other personal records should be kept for eight years after conclusion of treatment[5];

6.4.4 certain medical conditions take a long period to manifest themselves, such as asbestosis and records of patients who may have been exposed to such conditions, need also to be kept for a sufficient period of time, but not less than 25 years.

6.5 A balance must be reached between the costs of (indefinite) retention of records (in terms of space, equipment, etc.) and the occasional case where the practitioners' defence of a case of negligence is handicapped by the absence of records. The value of the record for academic or research purposes, or the risks resulting from the handling or complications of the case could serve as additional considerations.

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5 Royal College of Pathologists, Marks and Spencer Publications Unit. *The retention and storage of pathological records and Archives*, London: Royal College of Pathologists, 1995

6.6 Where there were statutory obligations which prescribed the period for which patient records should be kept, a practitioner shall comply with those obligations.

7 OWNERSHIP OF RECORDS

7.1 Where records are created, including the original radiographs or ultrasound images, such records remain the property of the medical practitioner, dentist, medical scientist or institution concerned and may be retained by him or her, but a copy thereof should be given to the patient or referring practitioner on request. The patient may be charged the appropriate fee for such copies.

in the case of Government Hospitals, where radiographs were the property of the hospital, such original radiographs/ultrasound images should be retained by the hospital or medical practitioner involved; copies could, however, be made available to the patient or referring practitioner on request for which a fee could be charged;

ii In cases where patients were required to pay for radiographs/ultrasound images (private patients/hospitals) such patients should be allowed to retain such records; unless the practitioner deemed it necessary to retain such records for purposes of monitoring treatment for a given period. Should the patient however require the radiographs/ultrasound images for any reason such as consulting with another practitioner he or she should be allowed to obtain the original images

7.2 As the ownership of records in a multi-disciplinary practice depends on the legal structure of the practice, the governing body of such multi-disciplinary practice should ensure that these guidelines relating to records are being adhered to.

7.3 Should a medical practitioner or dentist in private practice (both in a solus practice and in a partnership) pass away, his or her estate, which includes the records, would be administered by the executor of the estate.

7.4 Should the practice be taken over by another practitioner, the executor shall carry over the records to the new practitioner. The new practitioner is obliged to take reasonable steps to inform all patients regarding the change in ownership and that the patient could remain with the new practitioner or could request that his or her records be transferred to another practitioner of his or her choice.

7.5 Should the practice not be taken over by another practitioner, the executor should inform all patients in writing accordingly and transfer those records to other practitioners as requested by individual patients. The remaining files shall be kept in safe keeping by the executor for a period of at least twelve (12) months with full authority to further deal with the files as he or she may deem appropriate, provided the provisions of the rules on professional confidentiality are observed.

7.6 It should be noted that certain partnership agreements may make specific provision for the management of a deceased partner's share in the partnership which would include the records.

7.7 In the event of a medical practitioner or dentist in private practice who decides on closing his or her practice for whatever reason, the practitioner shall timeously inform in writing all his or her patients of the following, namely –

7.7.1 that the practice is being closed as from a specified date;

7.7.2 that requests could be made that records be transferred to other practitioners of their choice;

7.7.3 that after the date concerned, the records would be kept in safe keeping for a period of at least twelve (12) months by an identified person or institution (an identified person or institution in this sense means a responsible person such as the practitioner's attorney, accountant or bank manager) with full authority to further deal with the files as he or she may deem appropriate, provided the provisions of the rules on professional confidentiality are observed.

8 ACCESSIBILITY TO RECORDS

8.1 A medical practitioner or dentist shall provide any person of age 14 years and older with a copy or abstract or direct access to his or her own records on request.

8.2 Where the patient is under the age of 16 years, the parent or legal guardian may make the application for access to the records.

8.3 Information about the termination of pregnancy may not be divulged to any party, except the patient herself, regardless of the age of the patient.

8.4 No medical practitioner or dentist shall make information available to any third party without the written authorisation of the patient or his or her legal representative.

8.5 A medical practitioner or dentist may make available the records to a third party without the written authorisation of the patient or his or her legal representative under the following circumstances:

8.5.1 Where a medical practitioner or dentist is a witness in a trial between a patient and another party or where a patient has instituted action in court against a medical practitioner or dentist and is ordered to testify on the patient's medical condition or to produce the records and he or she should request that such testimony be given *in camera* in accordance with section 153(1) of the *Criminal Procedure Act*, 1977 (Act No. 51 of 1977).

8.5.2 Where a patient sues a medical practitioner or dentist and the latter testifies in his or her own defence.

8.5.3 Where the Medical and Dental Professions Board has instituted disciplinary proceedings and the medical practitioner or dentist has to answer to a charge or defends himself or herself.

8.5.4 Where the medical practitioner or dentist is under a statutory obligation to disclose certain medical facts, e.g. reporting a notifiable disease or in terms of the *Child Care Act*, 1983 (Act No. 74 of 1983), reporting any case of suspected child abuse.

8.5.5 In the event where the ailment of a patient becomes known to a medical practitioner or dentist and the nature thereof is such that the medical practitioner or dentist concerned is of the opinion that the information ought to be divulged, in the interest of the public at large. Before the information is divulged the relevant information shall be given to the patient and voluntary authorisation shall be sought from the patient.

8.6 In provincial hospitals the records shall be kept under the care and control of the superintendent. Access to such records shall be subject to compliance with the requirements of the Access to Information Act and such conditions as may be approved by the superintendent.

9 RETENTION OF PATIENT RECORDS ON CD-ROM

9.1 Storage of clinical records on computer compact disc (CD-ROM) would be permissible, provided that protective measures are in place.

9.2 Protective measures referred to in paragraph 9.1 would entail that –

9.2.1 only CD-ROM technology is used, i.e. designed to record a CD once only so that old information cannot be overwritten, but new information can be added;

9.2.2 all clinical records stored on computer compact disc and copies thereof are to be encrypted and protected by a password in order to prevent unauthorised persons to have access to such information;

9.2.3 a copy of the CD-ROM to be used in the practitioner's rooms will be in a read-only format;

9.2.4 a back-up copy of the said compact disc must be kept and be stored in a physically different site in order that the two discs could be compared in the case of any suspicion of tampering;

9.2.5 effective safeguards against unauthorised use or retransmission of confidential patient information to be assured before such information was entered on the computer disc. The right of the patient to privacy, security and confidentiality should be protected at all times.

10 CHECKLIST FOR MEDICAL RECORD-KEEPING

The following checklist may serve to guide practitioners in the appropriate keeping of patient records:[6]

- Good notes imply good practice.
- Records should be complete, but concise.
- Records should be consistent.
- Avoid self-serving or disapproving comments in patient records.
- Use a standardised format: Notes should contain in order the history, physical findings, investigations, diagnosis, treatment and outcome or disposal.
- Avoid conclusionary comments, describe the facts, and make conclusions only essential for patient care.
- If the record needs alteration in the interest of patient care - then show no intent to hide by lining out items, signing in full and dating the changes and, when possible, entering a new note that refers to the correction without altering the initial entry.
- Release a copy of records only after receiving proper authorisation.
- Keep billing records separate from patient care records.
- Always label attached documents such as diagrams, lab results, photographs, charts, etc. Never rely on sheets of paper to remain identifiable by being bound or stapled together.

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[6] Torres, A, Proper S.: Medico-legal developments and the Dermatologist. *Advances in Dermatology*, Vol 12, 1987

Ethical guidelines for good practice in medicine, dentistry and the medical sciences

The Medical and Dental Professions Board of the Health Professions Council of South Africa has embarked on a project to bring together ethical and professional guidelines for doctors (medical practitioners), dentists, and medical scientists. The following Booklets are separately available:

Booklet 1:	*General ethical guidelines for doctors, dentists and medical scientists*
Booklet 2:	*General ethical guidelines for health researchers*
Booklet 3:	*Ethical and professional rules of the Medical and Dental Professions Board*
Booklet 4:	*Professional self-development*
Booklet 5:	*Guidelines for making professional services known*
Booklet 6:	*Guidelines for the management of health care waste*
Booklet 7:	*Policy statement on perverse incentives*
Booklet 8:	*Guidelines for the management of patients with HIV infection or AIDS*
Booklet 9:	*Guidelines on research and clinical trials involving human subjects*
Booklet 10	*Research, development and use of the chemical, biological and nuclear capabilities of the State*
Booklet 11	*Guidelines on keeping of patient records*
Booklet 12	*Canvassing of patients abroad*
Booklet 13	*National Patients' Rights Charter*
Booklet 14:	*Confidentiality: Protecting and providing information*
Booklet 15:	*Seeking patients' consent: The ethical considerations*

APPENDIX 5

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Motara

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER M080526**
PROJECT	An intervention study of doctors' admission records in an Accident and Emergency unit
INVESTIGATORS	Dr F Motara
DEPARTMENT	Family Medicine
DATE CONSIDERED	08.05.30
DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 08.06.23 **CHAIRPERSON** .....
(Professor P E Cleaton Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Prof B Sparks

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Faculty of Health Sciences
Medical School, 7 York Road, Parktown, 2193
Fax: (011) 717-2119
Tel: (011) 717-2745

Reference: Ms Tania Van Leeve
E-mail: tania.vanleeve@wits.ac.za
14 May 2009
Person No: 8351782
PAG

Dr F Motara
P O Box 72588
Parkview
Johannesburg
2122
South Africa

Dear Dr Motara

Master of Family Medicine: Approval of Title

We have pleasure in advising that your proposal entitled "*An intervention study of doctors' admission records in an accident and emergency unit*" has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

APPENDIX 6

TABLE SUMMARY OF RESULTS FOR VARIABLE AUDITED

VARIABLE	RECORDED FREQUENCY			NOT RECORDED FREQUENCY		
N = 220	P1	P2	P3	P1	P2	P3
NAME	213	190	213	7	30	6
ADDRESS	205	187	200	15	33	20
BPS	12	167	156	208	53	64
PMH/PSH	69	201	206	151	19	14
MEDICATION	47	172	192	173	28	22
ALLERGIES	14	188	196	206	31	24
SMOKING	7	175	191	213	44	29
ALCOHOL	8	173	192	212	45	27
PRESENTING PROBLEM	216	219	219	4	1	1
EXAMINATION	219	220	219	1	0	1
REFERRAL	72	122	148	148	97	72
MANAGEMENT PLAN	23	176	188	197	44	32
LEGIBILITY	204	220	220	16	0	0