

## Status of Inpatient Medical Records Clerking At Nakuru Provincial General Hospital, Nakuru County, Kenya.

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**Abstract:** Medical records completeness is an important task in effective and efficient health care service provision. The completeness provide timely patient information at delivery points. The completeness play a vital role during planning and provision. This study aimed to evaluate the status of inpatient medical records clerking at Nakuru Provincial General Hospital. In order to: 1) determine the completeness of bio data, 2) completeness of family history, 3) completeness of patients' medical history, 4) completeness of patients' treatment history and 5) to establish the rightful usage of specific forms at inpatient services. A retrospective record review (3R) study design reviewing 200 inpatient medical records of discharges through a checklist, between the periods 12th February to 25th February, 2019. Data was analyzed using SPSS version 22 and expressed in percentages, in tables and graphs. The study concluded that there was incompleteness in clerking of the patients' medical records where high rates were noted on patient's occupation incomplete at 34%, patients' presence/absence of known medical conditions at 25%, indication of allergies at 22%, frequency of medication at 25% and finally wrong usage noted with the registration at 21%. The study recommends that the Hospital management should initiate a regular Intensive continuous medical education (CME) to the healthcare providers on the importance of completeness in clerking medical records at all service provision points and also the Health Records and Information Officers to ensure availability of various medical record forms at service points. The research permitted by National Commission for Science, Technology and Innovation, Kenya.

**Keywords:** completeness, incompleteness, Medical Records, Clerking, right usage

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### I. Background information

Medical health records form an essential part of patient's present and future healthcare. Their completeness is important in the sense that it enable right patients' services provision, also in planning, medical research, production of healthcare statistics, and development of healthcare sector. Completeness in medical records provide timely patient information for the healthcare professionals' efficient and effective service care. For efficiency, it is necessary for all medical data to be written down and in the right forms. Tufo & Speidel (1971) indicated that there are consensus among health care professionals that medical records are important and necessary for medical education and medical care. Also that the traditional medical record is often seriously deficient.

Completeness of patient's medical history is a necessity in all facilities. It allows health professional to begin with a review of the initial data, during the interview will further investigate this information, probing deeper and wider to arrive at a judgment as to what type examination procedures would be best suited for the particular patient and complaints involved. So, incomplete medical records can contains gaps that may result to poor clinical care, insufficient research evidence, not adhering to institutional policies, claims of alleged negligence and fraud. Complete medical records are important since they are essential for the continuity of care of patients. Also, good and complete medical records are vital for defending a complaint or clinical negligence claim against health professionals or the health system. Ignoring completing the necessary patient's medical form may lead to a lot of disadvantages to the Health professionals, facility's administration system and to loss of patients' life, since the wrong diagnosis maybe arrived at or even can result in legal action. Also can lead to inappropriate billing and loss of revenue due to fraudulent charging. Thus the presence of a complete, up to date and accurate medical record can make all the difference to the outcome by sorting out the unlikely events.

Hence the study aims to evaluate the status of inpatient medical records clerking in Nakuru Provincial General Hospital. The study findings is a basis for further action to improve or maintain quality of clerking for better service delivery avoiding legal issues, high cost due to duplication of services, inappropriate billing leading to charges of fraud, inaccurate and poor care information and poor patient care.

## II. Methodology

### 2.1: Study Area.

The study was conducted at Nakuru provincial general hospital, Nakuru County. The hospital has a bed capacity of 622 with 15 general wards. Carders involved clerking patients at the hospital are the medical officers, clinical officers, nurses, health records officers, physiotherapist and nutritionist. The hospital has 51 clinical officers 343 nurses, 8 health records, 19 medical officers,15 physiotherapist and 5 nutritionist.

### 2.2: Study Design.

This study design that was adapted is retrospective record review design (3R). Matt (2013) describes 3R as research design in which pre-recorded, patient centered data are used to answer one or more research questions. The inpatient medical records were the pre-recorded data that was to be reviewed to answer the study questions.

### 2.3: Variables.

Independent variables were the various inpatient medical records forms, while dependent variables were: 1).Completeness of various inpatient medical record forms. 2). Rightful usage of the various inpatient medical forms.

### 2.4: Study Population.

The study analyzed inpatient medical records of 200 discharges between the periods of 12<sup>th</sup> February to 25<sup>th</sup> February, 2018.

### 2.5: Inclusion and Exclusion Criteria.

The study included all the inpatient medical records stored at the hospital for the month of February 2019 and it excluded records from other hospitals.

### 2.6: Data Collection Methods and Tools.

The study adopted abstraction data collection method, which utilized an abstraction checklist as the data collection tool. The observation checklist had the standard parts a forms of an inpatient medical record at discharge point.

### 2.7: Ethical Approval and Permission.

Permitted by the national commission for science, technology and innovation prior to the commencement of the study.

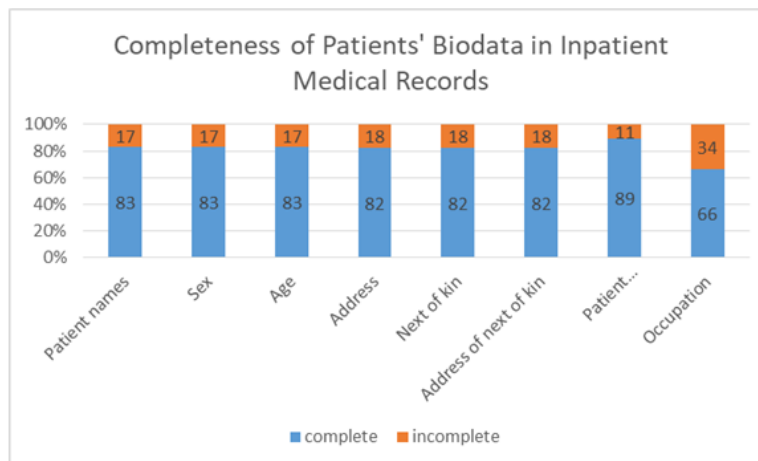
## III. Result Presentation

### 3.1: Background Information

A total of 200 inpatient medical records discharges were analyzed for the period 12<sup>th</sup> February to 25<sup>th</sup> February, 2019. The study analyzed the Biodata, Family medical history, Medical history, Patients' treatment history and Rightful usage of various forms. The hospital has a bed capacity of 622 with 15 general wards of Provincial general hospital, Nakuru, Kenya. The Hospital has various cadres who are involved in clerkship.

### 3.2: Completeness of Patients' Bio-Data in the Inpatient Medical Records

The study Sought to determine the completeness of bio data among inpatient medical records, the results are presented in figure 1 below. The completeness of patient's bio-data was assessed in terms of patient names, sex, age, address, next of kin, and address of next of kin, patient demographics and occupation.



**Figure 4. 1:** Completeness of Bio data among inpatient medical records, PGH Nakuru, Kenya

The result in figure 1 above indicates that the patient names was 83% (167) complete and 17%(33) incomplete, the sex of the patient was 83%(167)complete and 17%(33) incomplete, the age of the patients was 83%(167) complete and 17%(33) incomplete, address of the patient was 82% complete and 18%(35) incomplete, next of kin was complete 82%(165) and 18%(35) incomplete, address of the next of kin was complete 81%(163) and 19%(37) incomplete, patients demographic in clinical notes was complete for 89%(178) and 11%(22) incomplete and finally occupation was complete for 65%(131) and 34%(68) Incomplete.

3.3: Completeness of Family Medical History in the Inpatient Medical History

The study sought to determine the completeness of family history among inpatient medical records; the results are presented in figure 2 below. The completeness of family history in the inpatient medical records was assessed in terms of status of patients parents whether alive or dead, presence/absence of chronic medical condition in the family, attending officer name, attending officer signature and date of clerking.

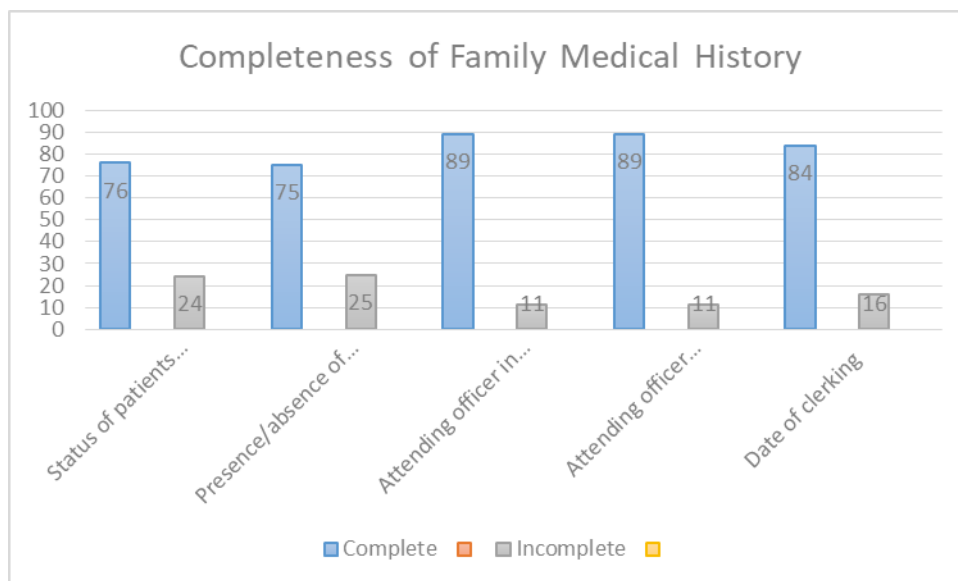


Figure 4. 2: Completeness of Family Medical History, PGH Nakuru, Kenya

The results in figure 2 above shows that the status of patients parents was 76%(152) complete and 24%(48) incomplete, presence/absence of chronic medical condition was 75%(151) complete and 25%(49) incomplete, attending officer in charge name in the family history was complete for 89%(179) and 11%(21) incomplete, attending officer signature in the family history was complete for 89%(179) and 11%(21) incomplete and finally the date of clerking was complete for 84%(169) and 16%(31) incomplete.

3.4: Completeness of Medical History In The Inpatient Records

The study sought to determine the completeness of patient’s medical history of inpatient medical records, the results are presented in figure 3 below. Completeness of medical history was assessed in terms of chief complaints, history of present illness, past medical history, social history, allergies, medication history, review of system, diagnosis, physical examination, officer in charges name, officer in charges signature and date of clerking.

Table 4.1: Completeness of medical history, PGH Nakuru, Kenya.

	Complete %(n)	Incomplete %(n)
Chief complaints	89(179)	11(21)
History of present illness	92(184)	8(16)
Past medical history	85(171)	15(29)
Social history	81(162)	19(38)
Allergies	78(157)	22(43)
Medication history	82(165)	18(35)
Review of system	83(167)	17(33)
Diagnosis	83(167)	17(33)
Physical examination	87(175)	13(25)
Officer in-charge name	89(179)	11(21)
Officer in-charge sign	89(179)	11(21)
Date of clerking	89(179)	11(21)

In table 2 above the result indicated on medical history that the chief complaint was 89%(179) complete and 11%(21) incomplete, history of present illness was 92%(184) and 8%(16) incomplete, past medical history was 85%(171) complete and 15%(29),social history was 81%(162) complete and 19%(38) incomplete, allergies was 78%(157)complete and22%(43) incomplete, medication history was82%(165) complete and 18%(35)incomplete, review of system was 83%(167) complete and 17%(33) incomplete, diagnosis was 83%(167) complete and 17%(33) incomplete, physical examination was 87% (175)complete and13%(25) incomplete, officer in charge name was 89%(179) complete and 11%(21) incomplete, officer in charge sign was complete 89%(179) and 11%(21) incomplete and finally date of clerking was complete 89% (179) and 11% (21) incomplete.

**3.5: Completeness of Patients’ Treatment History Among Inpatient Medical Records**

The study sought to determine the completeness of patients’ treatment history among inpatient medical records; the results are presented in table 3 below. Assessment on the completeness of treatment history was done in terms of medication orders route, frequency of medication order, last dose, nutrition notes, officer in charges name, officer in charges signature and date of clerking.

**Table4. 2: Completeness of treatment history, PGH Nakuru, Kenya.**

	Complete %(n)	Incomplete %(n)
Medication orders route	76 (152)	24 (48)
Medication orders frequency	75 (151)	25(49)
Last dose date/time	76(152)	24(48)
Nutrition notes	87(175)	13(25)
Officer in-charge name	89(179)	11(21)
Officer in-charge sign	89(179)	11(21)
Date of clerking	90(169)	10(31)

From the results in table 3 above it shows that, medication orders route was 76%(152) complete and 24%(48) incomplete, frequency of medication order was complete 75%(151) and incomplete for 25%(49), last dose was complete for 76%(152) and 24%(48) incomplete, nutrition notes was complete 87%(175) and 13%(25) incomplete, officer in charges name was complete 89%(179) and 11%(21) incomplete, officer in charges signature was complete 89%(179) and 11%(21) incomplete and finally the date of clerking was complete 90%(169) and 10%(31)incomplete.

**3.6: Rightful Usage of Specific Forms at Inpatient Services**

The study in specific objective 5 sort to establish the rightful usage of specific forms at inpatient services in Nakuru Provincial General Hospital. Assessment was done in 6 forms and also the attachment of the forms in the files. The forms are, registration form, clinical history sheet, continuation sheet, prescription chart, discharge summary and consultation form. The analysis was in percentage, result is indicated in table below.

**Table 4. 3: Rightful usage of specific forms at inpatient services.**

	Registration form	Clinical history sheet	Continuation sheet	Prescription chart	Discharge summary	Consultation form
Rightly used	65(129)	77(154)	85(171)	74(148)	83(166)	13(24)
Wrongly used	21(42)	14 (28)	5(11)	10(20)	2(3)	.5(1)
not attached	14(29)	9(18)	10(18)	16(32)	15(31)	87(175)

The result in the table above on rightful usage of medical forms indicates that, registration form was 65%(129)rightly used,21%(42) wrongly used and 14%(29) were not attached, clinical history sheet was rightly used 77% (154), 14%(28) wrongly used and was not attached 9%(18), continuation sheet was 85%(171) rightly used , 5%(11) wrongly used and was not attached 10%(18), prescription chart was 74%(148) rightly used, 10%(20) wrongly used and it was not attached 16%(32), discharge summary was 83%(166) rightly used, 2%(3) wrongly used and was not attached 15%(31) and finally the consultation form was 13%(24) rightly used, 5%(1) wrongly used and it was not attached 87%(175).

**IV. Discussions and Conclusion**

**4.1: Completeness of Biodata among Inpatient Records**

The research finding showed that there was incomplete documentation of patients name, age, and gender (sex) which were 83%, 83%and 83% complete respectively. The findings agree with a research done by Mbosale et al (2013) that indicated patient’s name, age, and gender were 94.75%, 77.25% and 69.50%, complete respectively. Assefa et al (2018) also in his research cited that, only just about one fourth (255) of prescriptions contain patient’s age and sex except full name which was 94.5% which shows some

incompleteness. Very low to Bhanot *et al* (2017) study on Completeness in clerking which indicated occupation at (95%,  $p < 0.01$ ).

#### 4.2: Completeness of Family History

A family medical history is a record of health information about a person and his or her close relatives. A complete record includes information from three generations of relatives, including children, brothers and sisters, parents, aunts and uncles, nieces and nephews, grandparents, and cousins.

The study results showed that the status of patients' parents (Alive or Dead) was 76%(152) complete and 24%(48) incomplete, presence/absence of chronic medical condition was 75%(151) complete and 25%(49) incomplete, attending officer in charge name in the family history was complete for 89%(179) and 11%(21) incomplete, attending officer signature in the family history was complete for 89%(179) and 11%(21) incomplete and finally the date of clerking was complete for 84%(169) and 16%(31) incomplete. Though incomplete it contrasts Fernanda *et al* (2015) a study that assessed the quality of family history data structured notes which found there was incomplete complete family history. Several barriers remain for collecting complete and useful family history data. Also Qureshi *et al* (2009) study on family history and improving health it indicated that there was little evidence on factors affecting Family history.

#### 4.3: Completeness of Medical History

This study findings shows the completeness of medical history in the inpatient medical records as; history of present illness complete at 92%(184), past medical history complete at 85%(171), social history complete at 81%(162), medication history complete at 82%(165), the diagnosis indicated at 83%(167), physical examination complete at 87% (175), officer in charge's name complete at 89%(179). This result is similar to a study done by Hollis *et al* (2016) that examined inpatient medical record keeping found the completeness at 96% (n = 149) of cases, Investigations were complete at 77% (n = 119), Diagnosis were complete at 88% (n = 137) and the Attending doctor's name were complete at 50% (n = 78). Also agrees with Lau & Florax (2000) in the study on completeness of medication history in hospital medical records of a patient in general internal medicine wards that found medication history to be 75% complete.

Kalliat *et al* (2017) indicated that Allergy status was recorded in 177 patients' drug charts, 170 patients' medical clerking and only 6 alert sheets. In total, 36 patients were found to have true allergies. Only 11 of these patients had their allergy status documented fully in both the medical clerking and on the drug chart. Three had their allergy status incorrectly recorded as "no known drug allergy" in the medical clerking and seven had no red identification bracelet. Hence, showing incompleteness in the medical history.

#### 4.4 Completeness of Treatment History

The study finding on the completeness of treatment history revealed that the medical records were incomplete; medication orders route was 76% complete, frequency of medication order was complete 75% and the last dose was complete by 76%. Though not similar to Lau *et al* (2000) study which revealed that medication history in the hospital medical records were often incomplete as 25% of the prescriptions were not recorded and 61% of patients had one or more drugs not recorded. Also Hollis *et al* (2001) study indicated that the medication history in the hospital medical record was often incomplete as 25% of the prescription drugs in use were not recorded and 61% of all patients had one or more drugs not registered.

The study further revealed that details of medication like strength of medication and the frequency of administration were completed at 70% and 94%, respectively. Route and dosage form were on 27% and 78%, respectively, 88% had quantity to be dispensed and 18% had instructions for use mentioned. Nothing much has been done on these variables.

#### 4.5 Rightful Usage of Specific Forms At Inpatient Services

The study findings on the rightful usage of specific forms registration form was 65%(129) rightly used, 21%(42) wrongly used and 14%(29) were not attached, clinical history sheet was rightly used 77%(154), 14%(28) wrongly used and was not attached 9%(18), continuation sheet was 85%(171) rightly used, 5%(11) wrongly used and was not attached 10%(18), prescription chart was 74%(148) rightly used, 10%(20) wrongly used and it was not attached 16%(32), discharge summary was 83%(166) rightly used, 2%(3) wrongly used and was not attached 15%(31) and finally the consultation form was 13%(24) rightly used, 5%(1) wrongly used and it was not attached 87%(175). Contrary to Torki *et al* (2015) study on Improving the Medical Record Documentation, the results indicated that on among selected samples, summary sheet was incomplete in 52.4%, medical history sheet was 57.8% complete and progress notes was 72.2% incomplete. Also unlike Tola (2017) study on improving completeness of inpatient medical records that found that Physician note format was completed for 92.8%, physician order sheet was 96.4% completed, nursing care plan was completed for 76.6%, medication administration sheet was 70.3% completed and lastly discharge summary was 83.8% completed. Thus indicating that only physician note format and physician order sheet were attached on all medical records, while the rest of the forms were missing in some patients medical records. According to Soto (2002) on the

study on quality and correlates of medical record documentation among pediatricians' documentation was 100% for immunization, 84.8% for medications, 90.8% for compliance. This clearly showed that documentation not done rightfully at respective specific forms.

#### 4.6: Conclusion

Based on the study findings it's concluded that:

The status of inpatient medical records clerking at Nakuru provincial general hospital study showed:

1. Higher rate of incompleteness in clerking of the patients' Bio-data, with the patient's occupation being incomplete at 34%.
2. Family history clerking was incomplete, there was 25% incompleteness in the presence/absence of medical conditions,
3. Medical history clerking was incomplete, with allergies having the highest rate of 22% incomplete.
4. Treatment history clerking was incomplete, with frequency of medication having a higher rate of 25% incomplete.
5. The various medical forms were not rightful used, the registration form had the higher percentage of 21% wrongly used.

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