

AUDIT OF THE DOCUMENTATION OF ADMISSION CLERKINGS IN A NEONATAL UNIT OF A TERTIARY HOSPITAL IN THE NORTH-WESTERN NIGERIA

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Abstract

Medical record is valuable for research, audit and medico legal purposes. But its primary function is for patient care. Omission in doctor's clerking can lead to multiple errors. Majority of hospitals in Nigeria have limited resources and cannot afford electronic medical recording, therefore there is need to maintain the quality of existing hand written record. This study aimed at audit documentation of admission clerkings in a neonatal unit of a tertiary hospital in North- Western, Nigeria. This was a 4-month prospective study that reviewed admission records by different cadre of doctors into the neonatal unit of the Usmanu Danfodiyo University Teaching Hospital (UDUTH), Sokoto from 1st February to 31st May, 2015. A checklist was used to audit the clerkings. The frequency of documentation by different cadre of doctors, recording of doctors' information, recording of patients' information and examinations findings were expressed as proportions. Chi-square was used to test for association between the doctors' cadre and their documentation, but where more than 20% the cells expected frequency is less than 5, Fisher's Exact test was used, a p-value of < 0.05 was considered statistically significant. One hundred and sixty hand written clerkings were reviewed. Date of consultation was documented in 150(93.7%) but no time of consultation in 37(23.1%). One hundred and forty- two (88.8%) had the patients name written in full on the first page, but no patients name and page numbering on the subsequent pages in 108(67.5%) and 135(84.4%) of the clerkings respectively. Address and age of patients were not documented in 95(59.4%) and 55(34.4%) of the medical notes respectively. The weight (144/90.0%), length (130/81.2%), respiratory rate (142/88.8%) and heart rate (144/90.0%) were documented in the majority of the clerkings. Most (83,51.9) of the clerkings were signed. The study revealed suboptimal documentation of admission clerkings by doctors. The study recommended the introduction of a standard clerking template, electronic clerking template and recording device to minimise clerking omissions.

Keywords: Audit, clerkings, documentation, admission, Neonatal, North –Western, Nigeria

Introduction

Medical record is valuable for research, audit and medico legal purpose but its primary function is for patient care (Thomas, 2009). Clerking of patient is the first and most important contact a medical team has with a patient (Chow et al, 2014). Admission clerking is one of the most

important documents in the patient's record because it represents the most frequently referenced evidence of a clinical encounter (Twigg *et al*, 1993). Omission of important information can lead to incorrect diagnosis; inadequate assessment of risk, and inadequate management of patient (Towers, 2013). Medical record facilitates communication and continuity of care among physicians and other healthcare professionals involved in the patient's care (Mathioudakis *et al*, 2016). Negative legal repercussions are often avoided with proper documentation and appropriate communication of patient's information (Thomas, 2009). Medical record documents the care of a patient and is an important document contributing to high quality of care (Ente *et al*, 2010). To ensure the quality of medical services, good medical documentation is necessary (Bargaje, 2011). Most of the hospitals in Nigeria have limited resources and cannot afford electronic medical recording, therefore there is need to maintain the quality of existing hand written records (Unnewehr *et al*, 2015).

The quality of medical recording system can have profound effect on the decision making capabilities (Adeleke *et al*, 2012). Keeping the medical record of the patient is part of a professional obligation (Lindo *et al*, 2016). High-quality medical documentation is expected in every area of care and every setting (Wilson *et al*, 2012). There is no such audit done in the unit and there is paucity of such studies in Sokoto state and Nigeria. This study aimed at audit the documentation of admission clerkings in the neonatal unit of a tertiary hospital in North- Western, Nigeria (The Usmanu Danfodiyo University Teaching Hospital, Sokoto), with a view to utilising the audit findings to guide targetted interventions.

Materials and Methods

Study area:

The study was conducted in the neonatal unit of the Usmanu Danfodiyo University Teaching Hospital Sokoto, Sokoto State. Sokoto, the capital city of Sokoto State is situated in the Northwest region of Nigeria. It lies between latitude 13° 3' 39N and longitude 5° 14' 2 E, with a surface area of 26,648.48 square kilometres. It has an average temperature of 35^{OC}. Usmanu Danfodiyo University Teaching Hospital (UDUTH) is a tertiary health institution located within Sokoto. It is an institution for tertiary health care delivery, training and research. The Hospital is among the second-generation Teaching Hospitals in Nigeria. The Hospital has a 700 bed capacity. It serves Sokoto and neighboring Kebbi, Niger and Zamfara States, as well as the Niger Republic.

Study design:

It was a 4-month descriptive and cross-sectional study conducted between 1st February and 31st May 2015.

Study population:

The doctors admitting neonates into the Neonatal unit of UDUTH, Sokoto ranging from house officers, junior and senior residents to consultants.

Sample size determination: An audit target of 95% was used to get the sample size with a standard formula (Araoye, 2004).

$$n = \frac{z^2 pq}{d^2}$$

Where n = minimum sample size

z = Standard normal deviate set at 1.96

p = Prevalence

$q = 1 - p = 1 - 0.5$

$= 0.5$

d = degree of accuracy desired = 0.05

$$n = \frac{(1.96)^2 (0.95)(0.1)}{0.05^2} = 146$$

Allowing for missing data, the sample size to be selected (n_s) was: $146/0.9 = 160$.

Therefore, the doctors documentations were recruited by simple random sampling till the required number was attained.

Inclusion criteria:

Documentations written for neonates admitted into the Neonatal unit.

Exclusion criteria:

1. Documentations from referral papers
2. Documentation of neonate who demised before full clerking and documentation was completed.
3. Documentation of doctors who were aware of the ongoing research

Instrument of data collection:

A checklist produced by the authors which was based on standard requirements of admission clerking by the Royal College of Physicians Health Informatics Unit was used to evaluate the admission documentation (RCP, 2011). Specific information sought included frequency of recording doctors' identification including time and date of documentation, counter-signatures and frequency of recording in-patients' information. Writing was adjudged to be legible if a non-medical person (a university graduate) who was unfamiliar with any of the doctors writing could read through without encountering much ambiguity (Ridyard et al, 2015).

Method of data collection:

Each morning, the documentations of the previous day's admissions was collected and reviewed by a member of the research team. By then, another set of doctors would be in the admission room. The review and entering of data were done in another office so as not to pre-empt other doctors about the study thereby leading to bias as they could be more conscious of their documentation. The identity and cadres of doctors who were on call and who wrote the documentations were additionally confirmed from the call duty roster and the nurses on duty.

Ethical approval:

This was obtained from the Ethics Committee of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Names of the doctors and patients were not used in the data collection to ensure confidentiality.

Data analysis:

The data was analysed using Statistical Package for Social Sciences version 22. The frequency of documentation by different cadre of doctors, recording of doctors' information, recording of patients' information and examinations findings were expressed as proportions. Chi-square was used to test for association between the doctors' cadre and their documentation, but where more than 20% the cells expected frequency is less than 5, Fisher's Exact test was used, a p-value of < 0.05 was considered statistically significant.

Result

One hundred and sixty handwritten clerkings were reviewed, the documented clerkings were all more than one page. Twenty (12.5%) of the admission notes were written by house officers, 51(31.9%) by junior residents, 27(16.9%) by senior residents and 22(13.8%) by consultants. Cadre of 40(25.0%) of the doctors was not documented in the admission notes. (Figure 1).

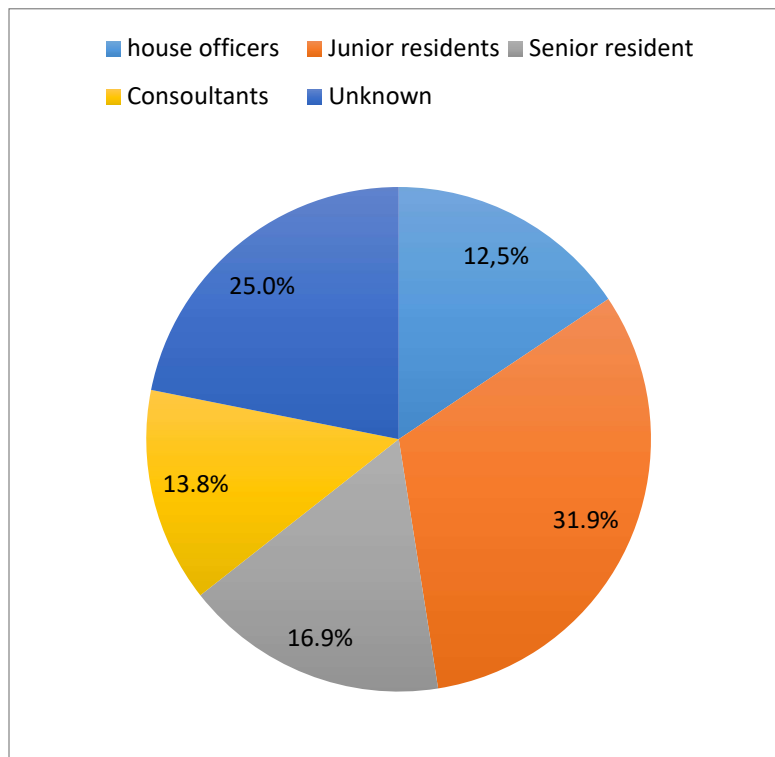


Figure 1: Documentation by the different cadre of doctors

Recording of doctors' information

Names of the doctors were written in 74(46.3%) of clerking notes, while the dates of consultation were documented in majority 150(93.7%), but no time of consultation in 37(23.1%) of the files audited. However, the date and the time in the subsequent pages were only indicated in 25(15.6%) and 31(19.3%) of the clerking notes respectively. Only 74(46.3%) and 83(51.9%) of the documentations indicated the doctors' names and signatures respectively, while most 148(91.3%) of the clerking notes had no counter-signing of corrections, deletions and insertions. The writing

was adjudged to be legible to the reviewers in 114(71.9%) of the documentations, as shown in Table I.

Table 1: Recording of doctors' information

Variable	Yes n(%)	No n(%)
Doctors name	74(46.3)	86(53.7)
Date of consultation	150(93.7)	10(6.3)
Time of consultation	123(76.9)	37(23.1)
Doctors signature	83(51.9)	77(48.1)
Legible writing	114(71.3)	46(28.7)

Recording of patients' information

One hundred and forty-two (88.8%) of the medical notes had the patients' names written on the first page, but no patients names and page numbering on subsequent pages in 108(67.5%) and 135(84.4%) of admission notes respectively. Addresses and ages of patients were not documented in 95(59.4%) and 55(34.4%) of the clerkings respectively; presenting complain was documented in 139(86.9%) (figure 2).

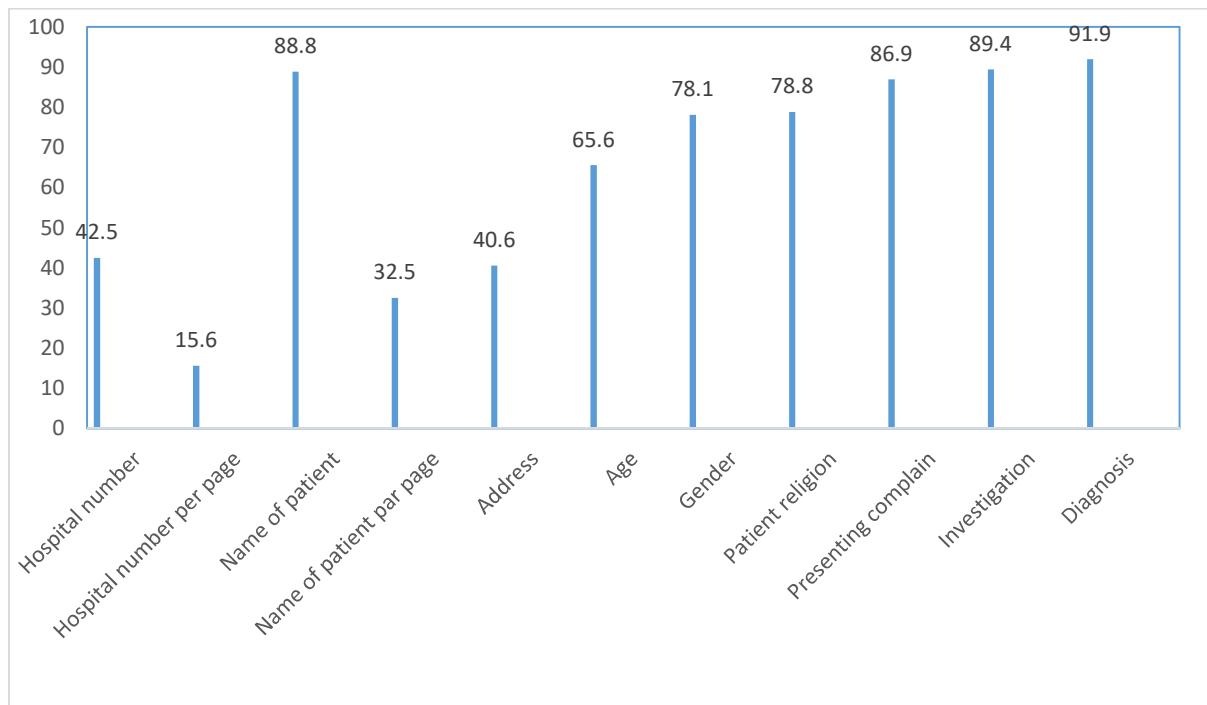


Figure 2: Recording of patients' information

Recording of patients' examination findings

Omitted examination findings included weight (16/10.0%), length (30/18.8%), respiratory rate (18/11.2%) and heart rate (16/10.0%), as shown in Figure 3.

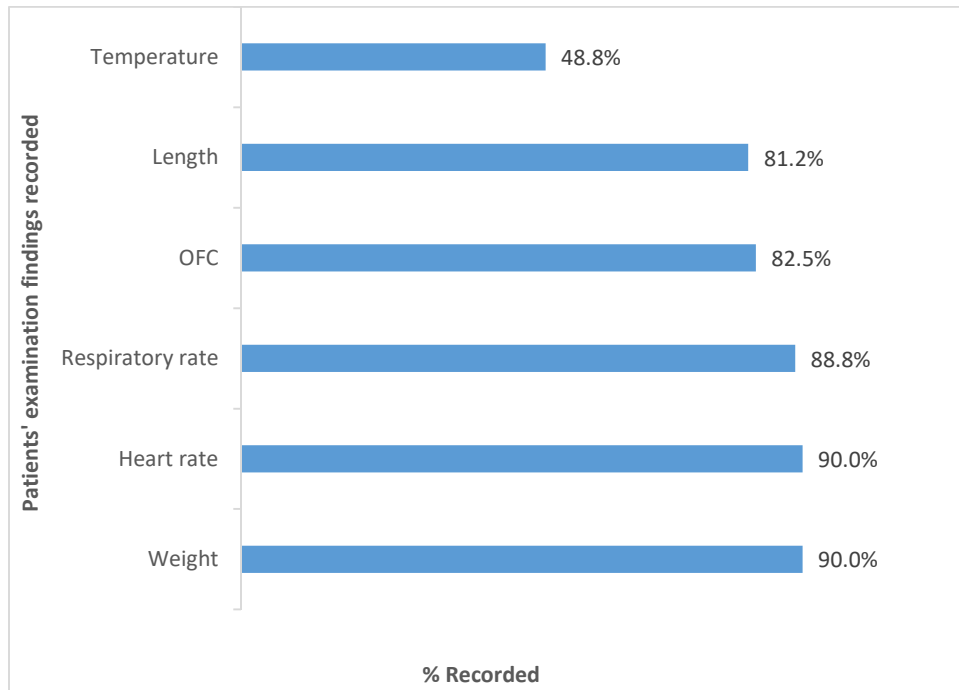


Figure 3: Recording of patients' examination findings

Relationship between doctors' cadre with their documentation

Fisher's exact test showed that there is no relationship between the cadre of the doctor and the rate of documentation of the date of consultation, time of consultation and the rate of the documentation of doctors' names in the clerkings ($p > 0.05$) respectively, (Table 2). The higher the cadre of the doctor the more the documentation contained the patient age, patients address, legible writing, doctors' signature and weight ($p < 0.05$) respectively.

Table 2: Association between doctors' cadres and their documentation

Variable	Doctors' cadre					
	Test of HO Unknown	significance	Registrar	SR	Consultant	
Date of consultation						
Yes	18(90.0)	49(96.1)	26(96.3)	21(95.5)	36(90.0)	F=2.375
No	2(10.0)	2(3.9)	1(3.7)	1(4.5)	4(10.0)	P=0.692
Time of consultation						
Yes	18(90.0)	49(96.1)	26(96.3)	21(95.5)	36(90.0)	F=4.547
No	2(10.0)	2(3.9)	1(3.7)	1(4.5)	4(10.0)	P=0.333
Doctor's name						
Yes	10(50.0)	22(43.1)	10(37.0)	15(68.2)	17(42.5)	X ² =5.646
No	10(5.0)	29(56.9)	17(63.0)	7(31.8)	23(57.5)	P=0.216
Doctor's signature						
Yes	8(40.0)	27(52.9)	18(66.7)	17(77.3)	13(32.5)	X ² =15.20
No	12(60.0)	24(47.1)	9(33.3)	5(22.7)	27(67.5)	P=0.004
Legible writing						
Yes	8(40.0)	39(76.5)	21(77.8)	19(86.4)	27(67.5)	F=12.33
No	12(60.0)	12(23.5)	6(22.2)	3(13.6)	13(32.5)	P=0.014
Patient's name						
Yes	17(85.0)	49(96.1)	25(92.6)	20(90.9)	31(77.5)	F=8.027
No	3(15.0)	2(3.9)	2(7.4)	2(9.1)	9(22.5)	P=0.076
Patient's address						
Yes	8(40.0)	16(31.4)	10(37.0)	17(77.3)	14(35.0)	F=14.38
No	12(60.0)	35(68.6)	17(63.0)	5(22.7)	26(65.0)	P=0.076
Patient's age						
Yes	15(75.0)	37(72.5)	16(59.3)	18(81.8)	19(47.5)	F=10.33
No	5(25.5)	14(27.5)	11(40.7)	4(18.2)	21(52.5)	P=0.029
Presenting complain						
Yes	16(80.0)	36(70.6)	25(92.6)	22(100.0)	39(97.5)	F=18.39
No	4(20.0)	13(29.4)	2(7.4)	0(0.0)	1(2.5)	P=0.001
Investigation						
Yes	19(95.0)	47(92.0)	22(81.5)	22(100.0)	33(82.5)	F=6.99

No	1(5.0)	4(7.8)	5(18.5)	0(0.0)	7(17.5)	P=0.057
Diagnosis						
Yes	19(95.0)	48(94.1)	24(88.9)	21(95.5)	35(87.5)	F=2.132
No	1(5.0)	3(5.9)	3(11.1)	1(4.5)	5(12.5)	P=0.680
Weight						
Yes	16(80.0)	49(96.1)	24(88.9)	21(95.5)	34(85.0)	F=6.125
No	4(20.0)	2(3.9)	3(11.1)	1(4.5)	6(15.0)	P=0.175
Length						
Yes	17(85.0)	44(86.3)	18(66.7)	18(81.8)	33(82.5)	F=4.425
No	3(15.0)	7(13.7)	9(33.3)	4(18.2)	7(17.5)	P=0.356
Temperature						
Yes	9(45.0)	29(56.9)	11(40.7)	17(77.3)	12(30.0)	X ² =15.01
No	11(55.0)	22(43.1)	16(59.3)	5(22.7)	28(70.0)	P=0.004
Respiratory rate						
Yes	19(95.0)	46(90.2)	21(77.8)	20(90.2)	36(90.0)	F=3.609
No	1(5.0)	5(9.8)	6(22.2)	2(9.1)	4(10.0)	P=0.423
Heart rate						
Yes	19(95.0)	44(86.3)	21(77.8)	21(95.5)	39(97.5)	F=7.981
No	1(5.0)	7(13.7)	6(22.2)	1(4.5)	1(2.5)	P=0.056

HO= House officer, SR= Senior Registrar

Discussion

There was low rate of documentation of the attending doctor's identity regarding their names and signature with figures of 43.6% and 51.9% respectively in this study. This corroborates the findings of previous reports by Raza (2012) in England that reported 85% and 82% of the physicians recorded their names and signature after completing the first cycle of their audit. Also, Daly *et al* (2013) reported low rates (50% and 67%) of recording of documentation of doctors' name and cadre in clerking respectively. This may be due to use of hand written records in their hospitals like ours. The name and signature are the only discrimination available to distinguish the treating physician (Raza, 2012). Not documenting this information can have serious threat on an organisation. The medical notes are not only useful as a learning tool but they are also needed in medico-legal circumstances, for physician and patient safety (Raza, 2012).

Majority (93.7%) of the documentations in this study were dated, this is similar to findings of previous studies (Raza, 2012; Daly *et al* 2013; Campbell *et al*, 2017). Time of consultation was recorded in 76.9% of the clerking in this study, which is higher than 36.3% recorded by Daly *et al* (2013) and the finding of a report in from England (Raza, 2012) that reported 67%, this may be due to difference in the cadre of doctors documenting the admission notes. There were more senior house officers, interns and junior registrars and few consultants in their study.

Hospital number on initial pages of the documentations was recorded in 42.5% of the clerking notes, this is lower than 49.2% among paediatric patients contained in a report from Nigeria (Adeleke *et al*, 2012). Patients' names were documented in 88.8% of the clerking notes, which is close to 95% reported by Campbell *et al* (2017) and Daly *et al* (2013) but higher than 65.7% reported in Bida, Nigeria (Adeleke *et al*, 2012).

Investigation requested by the doctor were documented in 89.4% of the clerkings. This is in agreement with the finding of another study (Adeleke *et al.*, 2012). but however higher than 73.6% reported by Daly *et al* (2013). Documentation of vital signs was sub-optimal, similar findings was reported by Daly *et al* (2013) where temperature, Heart rate and respiratory rate were documented in only 38.9%, 49.4% and 19.9% respectively in the admission notes. Incorrect information or omission of patient information may result in serious injury or death (Hayward *et al*, 2005). Medical documentation may serve as a legal document to verify the care given to patients (Thomas, 2009). Nowadays, besides improving the healthcare quality through availing appropriate information, the medical record has become part of the legal document for the protection of patient's safety (WHO, 2006).

Concerning documentation of diagnosis in the patient file, 91.9% of the documentations in this study had diagnosis, which is in agreement with 94.2% reported by a study in Nigeria (Adeleke *et al*, 2012). A thumb rule of expression, "If it is not documented, it does not exist" holds true when we deal with documentation (Quinn *et al*, 2015).

Conclusion

The study revealed suboptimal clerking and documentation by doctors. Training and retraining of doctors, especially the junior ones on the importance of completeness of clerking and documentation is highly recommended. The study recommends the introduction of a standard clerking template, electronic clerking template and recording device to minimise clerking and documentation omissions. There is need for re-auditing after introduction of standard clerking template or electronic clerking template. Further study needs to be conducted to assess the reasons for poor documentation in our hospital.

DECLARATION OF CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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