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Assessment of quality of healthcare data management in antiretroviral records at Federal Medical Centre, Bida in North-central Nigeria

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ABSTRACT

Background/Objective: The quality of data especially in healthcare management is recognized as a relevant performance function to facilitate operating processes and to facilitate quality decision making. The study assessed documentation quality of antiretroviral (ART) patients' records at the Federal Medical Centre, Bida Niger State, Nigeria. ***Methods/Design:*** A retrospective review of patients' health record was conducted at the antiretroviral (ART) clinic, Federal Medical Centre (FMC) Bida for patients who are active in the clinic between 1st January 2017 and 31st December 2017. Out of 1,122 patients who attended the clinic, a total of 286 cases were systematically selected for the review. ***Result:*** Demographic information of patient was fairly documented in 248(86.7%) cases; almost all (98.9%) the folders had their personal care card(s) enclosed. Documentation of patient's demographics on the care cards was also completed in 265 (92.7%) cases. Investigation form and prescriptions for the last six visits were well arranged in all cases 286(100%), documentation of vital signs was optimal in 270 (94.4%) cases while drug intake was well documented in 284 (99.3%) cases. There was serious lapse in clinical documentation of initial care assessment 236(82.5%) on the care card and also the completion of the same form 117(40.9%) among the clinicians; and adherence status of patient to care were also poorly documented 236(82.5%). The majority 251 (87.8%) of the records were not well tagged. ***Conclusion:*** Documentation of important clinical information is poor in the charts of patients attending ART clinic, FMC Bida and their folders were not properly fastened. Poor documentation in health records and proper safety of such might impede seamless continuity of care and might negatively affect the quality of care. The study recommends mandatory training and retraining of the staff involved and routine chart review in the adherence unit.

Keywords: Antiretroviral Care, Health Records, Patient Data, Documentation Quality, Electronic Health Records.

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INTRODUCTION

Data quality has long been a critical part of information system management and data quality management of which the literature has defined and characterized different perspectives. Resource investments and managerial efforts toward data management activities and related systems are steadily increasing[1,2]. The quality of data is recognized as a relevant performance issue of operating processes and of decision-making activities[3,4]. Data quality is a critical issue in information systems and in organization business due to the rapid growth of data volumes and their complexity. The potential for capital losses and heightened risk exposure due to poor quality of data makes data quality management critical in organizations[2,5]. Low data quality results in avoidable costs and by using data of good quality, many companies report achieving benefits[6].

Health record documents the pertinent facts of a patient's life and health history, including past and present illnesses and

treatments, written down by the healthcare professionals handling the patient's care[7]. The records must be compiled in a timely manner and contain sufficient data to identify the patient, support the diagnosis, justify the treatment and warrant end results[7]. Health records are the visible evidence of the hospital's clinical activities and accomplishments. Since they are the basis of any health institution, documentation of every contact of each patient with a healthcare provider must be comprehensive and robust to the scrutiny of auditors or attorneys[8].

Proper documentation of clinical record is of paramount importance[9]. Documentation of important clinical information is poor even in the hospital charts of patients with severe conditions[10]. This quality-of-care issue has implications for health services and research outcomes, including the development of medical report [10]. Appropriate documentation in the patients' health records has been identified as a weak point of physicians[11]. A study from Nigeria established consistency and promptness in documenting care in a tertiary healthcare[12]. It however reported lack of will to properly complete discharge summary[12]. The quality of health records depends on the health information recorded by the healthcare professionals authorized to provide and document such care. It was noted by a study that self-assessment and audit can help improve the standards of health record keeping[9]. Generally, lack of the will rather than the ability, has been identified as one of the reasons for poor healthcare data quality in Nigeria[12].

Nigeria is known as the most populous country in Africa[13], and also the country with the second highest number of people living with HIV in the world[14]. Scientific studies into the spread of HIV in Nigeria continue to be germane. As of 2013, 9% of the global burden of HIV cases was attributed to Nigeria alone[14], and in 2014, the country recorded a huge number (220, 000) of new HIV cases[15]. In 2015, it was estimated that 3.5 million people living with HIV were in Nigeria, and 180 000 deaths were attributed to HIV in the country, the same year[16]. Although the overall prevalence of HIV in Nigeria is estimated at 3.4%[17], there are wide disparities in HIV prevalence at the state level, ranging from 0.2% in Ekiti state to 15.2% in Rivers[18].

In 2005, antiretroviral therapy clinic (ART) commenced at Federal Medical Centre Bida (FMCB) to treat people living with HIV in Niger state and its environment. Due to the peculiar nature of the disease and statistics shown above in relation to Nigerian context, it is obvious that proper documentation is highly pertinent in order to monitor treatment progress, adherence to regimen and clinic visitations of HIV patients in Nigeria. Essentially, quality of data is very sacrosanct. This study therefore aimed at determining quality of documentation in ART records at FMC Bida.

METHODS

Study setting

The study took place at Federal Medical Centre, Bida, a 200-bed hospital and the only tertiary health facility in Niger State.

Study design

This is a retrospective clinical chart review of antiretroviral therapy (ART) patients' health records to assess clinical documentation quality.

Study population/materials

The paper-based health records of patients, who attended ART clinic between January 1 and December 31, 2017 were reviewed. As at December 2017, a total of one thousand one hundred and twenty-two (1,122) patients were currently active on ART care at the Federal Medical Centre Bida.

Selection techniques and sample size

Systematic sampling method = Total population/ Sample size

= 1122/286

=3.9

=4 (every fourth folder on the filling shelve was used for the review.

Sample size

The sample size was calculated using online survey system sample size calculator, from where 286 records were selected[19].

Data collection tool
A health record review form was designed by the investigators and reviewed by the Health Research Ethics Committee, Federal Medical Centre, Bida. The profoma used consists of 17-items questions with the answers 'Yes' and 'No', and evaluates the following: Proper documentation, data reliability and safety, data quality assurance and follow-up of treatment.

Data analysis and management
Data analysis was conducted using SPSS Version 16, while frequencies and percentages were used to present the data.

Inclusion and Exclusion Criteria
Health records of ART patients, who did not attend a minimum of four clinics were excluded.

Ethics
Ethics approval to conduct this research was sought and obtained from the Health Research Ethics Committee (HREC) of the Federal Medical Centre, Bida.

RESULTS

Abstracted records

All the selected 286(100%) records were found and abstracted for the review, 277(97%) of which were retrieved from the ART clinic and the nine others (3%) were picked from the obstetrics and gynecology department, where patients accessed gynecological related cases. Care card was duly signed by the attending physicians in virtually all (99.6%) [Table 1], vital signs adequately documented (94.5%) [Table 2], HIV result was somewhat fastened to the patient's care folder (24.5%) [Table 1] and initial clinical assessment forms rarely completed (7.0%) [Table 2].

DISCUSSION

In developed countries, clinical practice has achieved near-universal computerization. Electronic medical records, especially electronic prescription has probably improved efficiency and quality of care and reduced medication errors. Increasing the use of other functions such as accessing online decision support and maintaining electronic registries, is likely to lead to further health gains, especially in managing chronic conditions[20].

Table 1: Appropriate documentation, completeness and data security

	Yes(%)	No (%)	NA(%)
Demographics completely documented in the folder	248(86.7)	38(13.3)	0
HIV result enclosed and pinned to the folder	70(24.5)	54(18.9)	152(56.6)
Care card enclosed in the folder	283(98.9)	3(1.1)	0
Care card completed by Monitoring & Evaluation (Health Records) team	265(92.7)	19(6.6)	2(0.7)
Next appointment booked on care card	285(99.6)	1(0.4)	0
Care card duly signed by attending physician	285(99.6)	1(0.4)	0
Content of patient health records well-arranged and tagged to the folder	34(11.9)	251(87.8)	1(0.3)

The ART clinic in this study setting is gradually catching up with computerization. Although most of the care givers find it very difficult to use the system as a result of presumed duplication of work and consumption inherent in combining manual and electronic entries simultaneously. This necessitated much reliance on the paper-based patient note. The main deficiency identified was in the area of charting of initial clinical assessment on the care card (83%) and as well as filling of same forms (41%) by the attending clinicians.

Table 2: Data quality assurance and reliability

	Yes(%)	No (%)	NA(%)
Initial clinical assessment documented on care card	43(15.0)	236(82.5)	7(2.5)
Clinical details appropriately documented	265(92.7)	21(7.3)	0
Drug intake properly documented	284(99.3)	2(0.7)	0
Adherence status appropriately documented	76(26.6)	210(73.4)	0
Vital sign appropriately documented	270(94.5)	15(5.2)	1(0.3)
Ordered test and result obtained and properly documented	276(96.5)	10(3.5)	0
Initial clinical assessment form completed	20(7.0)	117(40.9)	149(52.1)

In 73% of the charts (n=210), the adherence status of patients was not recorded. This may be due to apathy to documentation as exhibited during clinic hours by the adherence/counselors. There is also a gross deficiency (88%) observed in the area of proper arrangement and clipping together of the case notes, This goes in line with a study by Adeleke *et al* in 2012[12]. Most of the folders were arranged, but not fastened properly. This could lead to loss on transit of some of the patients' health records in the folder. When information is not properly documented on the care card, it may be missing forever and may lead to repeat of such type of care test or misinform the clinicians and other team members at the next visit of the patient. As such, quality of care may be hindered.

It is notable that some HIV results, which is expected to confirm whether patient is positive or negative, were not fastened to the patients' folder. This may be as a result of the fire incidence that consumed almost all ART patients' health records in 2011. At a post-inferno re-registration, HIV tests were not re-ordered/repeated as most of the patients on ART were recognized by their care providers through the ART register. This may undermine good management of HIV records as Chaplin *et al*. reported that keeping information in separate files may be seen to complicate data management[21].

Almost all patients' health records contained documentation of next appointment and were duly signed by the attending physicians. This is in agreement with a 2012 study from Nigeria where 96% of progress notes were signed and dated each day[12].

Study limitations

The study was time consuming and abstraction of data was demanding.

Conclusion

There are notable inadequacies in clinical documentation especially documentation of initial assessment status of patient before placing on the ART care plan and also documentation of adherence assessment.

Recommendations

i. A mandatory training and retraining of the staff involved is necessary to improve data quality in the clinic.
ii. Routine chart review in the adherence unit should be undertaken.
iii. The Admission and Discharge unit of the Department of Health Records should be strengthened in order to facilitate proper arrangement of the patients' health records.
iv. Introduction of full fledged electronic medical records to all the service point to compliment the already existing Open Medical record system (OpenMRS). .

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.**Authors Contribution:**

AAA conceived of the study, initiated its design, participated in literature search, retrieval of records and abstraction, data analysis and coordination and drafted the manuscript. AIT participated in the design, literature search, abstraction, data analysis and coordination and reviewed the final manuscript. AOO and AA participated in the design, retrieval of records and abstraction, data analysis and coordination and reviewed the final manuscript.