

## Assessment of the Impact of Clinical/Medical Audit in an Effective Healthcare Service Delivery in Niger Delta University Teaching Hospital Okolobiri Bayelsa State

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**Abstract.** Clinical audit is seen as an approach to improve the quality of a patient care in a health facility, as a regard to an effective health care service delivery. Objective of the study is to assess the level of compliance with clinical/medical audit by health facilities, to determine the attitude of staff towards clinical/medical audit; To identify factors militating against clinical audit in health facilities. The study adopted a descriptive survey research design. The study was conducted at Niger Delta University Teaching Hospital, Okolobiri Bayelsa State. Methods: the study used convenience sampling technique to sample 67 healthcare professionals. A self-designed questionnaire was used to elicit data. Data was analyzed with mean and standard deviation. Findings revealed that majority of respondents held positive attitudes towards the conduct, and the important role clinical audit plays for an effective healthcare delivery system. Also, the study observed that lack of resources, lack of overall plan for project design, etc., are factors militating against clinical audit in health facilities. The study therefore concluded that clinical audit is a very impactful activity for effective health care delivery but has a very poor professional compliance in health facilities in Bayelsa state. The study recommends that organisational managers in health facilities to prioritize clinical audit action for quality health care outcomes.

**Key words:** clinical/medical audit; effective; healthcare; impact; assessment.

### Introduction

The assessment of the impact of clinical/medical audit in health care delivery service is to evaluate, and improve care rendered to a patient in a systematic way, in setting standards in other to identify an area of clinical practice for the study and define what should be achieved (Scally and Donaldson, 1998: 61-65).

As need for assessing the impact of clinical/medical audit. The measurement of current performance which involves collection of specified data. This has to be done objectively if meaningful results are to be achieved. The method used to collect the data is repeated, the cycle is repeated more than once to monitor the effects of any changes.

For an effective clinical/medical audit the Assessment of performance against standards, has to be analysed and interpreted. The implementation of changes is a persuasive approach and its necessary if changes are to be achieved (Kakande Editor, East and Central African Journal of Surgery).

Health audit is not new; it is a quality improvement activity that most healthcare employees have done for a long time as part of everyday practice. The purpose of healthcare, or medical / clinical audit is to monitor, if the effect and the degree of standard

for any given health or clinical activities are met, identify reasons why they are not met and identify and implementation of changes to practice, and to meet those standards.

These standards should be evidence based, which is clinical e.g. Breast Cancer management standards or non-clinical e.g. record management standard. In fact, healthcare audit is the final step in evidence based healthcare. It is the duty of all clinicians or those concerned to ensure that they deliver the best care to their patients.

All clinicians or those concerned, should be auditing their work daily, weekly or as agreed. Management and clinicians have a duty to use the findings towards best practice i.e. audit is an essential tool for Continuous Quality Improvement (CQI) for any given healthcare activity are reached and implement changes reasons why they are not reached and implement changes to practice to reach those standards (Flottorp et al., 2010: 2077).

Clinical/medical audit is the process of critically and systematically assessing our own professional activities with a commitment to improving personal performance and ultimately, the quality or cost effectiveness of patient care (National Institute of Clinical Excellence, 2002).

In this regard clinical audit is defined as “a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change.

It is true that health professionals are not well qualified to assess their own performance accurately. Hence the underlying idea of audit and feedback approach is that the quality and safety of health (professionals) care might be improved if the health professionals are given information about their clinical performance ideally combined with specific advice – there by allowing them to assess and adjust the performance.

Audit and feedback are recognized as part of a strategy for improving performance and supporting quality and safety in European health care systems (National Institute for Clinical Excellence 2002 and Geddes, Venneri 2009). Additionally, these tactics are seen as principles integrated into the healthcare polices of other countries. In Haley even though there is not a central committee for healthcare audit linking scientific societies, general practitioners, and regional health authorities (Wienand et al., 2014, Wienand, 2009: 82-90; Ministero, 2011).

It was thought that, by drawing attention to deficiencies in the delivery of care, this would curb (hold or keep within limit) in efficient and ineffective practice (Johnston et al., 2000).

Processes of clinical audit: For an effective clinic audit, the following steps are necessary.

Step 1: Preparing for the audit: The first step that must be accomplished in designing a clinical audit is to identify the topic. The topic of the audit can be loosely identified in clinical practice and may relate to the adequacy of a care process or that of the results (Benjamin, 2008: 1241). An audited theme should have specific characteristics: it should be of great clinical importance, of easy collection and analysis, and source of important consequences. The personnel involved in the audit have a key role in setting priorities among clinical problems to deal with. By choosing a suitable theme, various aspects should be considered. Good preparation is crucial for the success of an audit project.

In particular, it would be a good choice to face a problem that involves the clinician in terms of: (1) High volumes of work; (2) High costs in terms of health and/or economic; (3) High risk; (4) High variability; (5) High complexity; and (6) High innovation.

Rare events, such as complex clinical cases or sporadic adverse events, are not an appropriate topic for a clinical audit, and should be analysed with more adequate

methodologies (*i.e.*, Root Case Analysis) (Lorenzo and Hanson, 2008: 5-24). Once the topic has been selected, the purpose of the project must be defined, so that a proper audit methodology can be chosen and designed. The aim of an audit project could include the implementation of new processes (for example laboratory protocols, surgical procedures, *etc.*) and/or the improvement of current strategies (Buttery, 1998: 182-20).

Moreover, before beginning a clinical audit, organisations should clearly declare the resources allocated to support the project management (data collection, hardware and software required) and for the training of the clinical staff, including education on clinical audit techniques, facilitation and data management (Baker et al., 1995: 1241; de Stampa et al., 2009: 48).

Regarding the audit project team, it is advisable that it be customised for the specific audit project, with team members providing many of the skills needed. For example, if the topic of the audit is the management of vascular access in patients undergoing haemodialysis, it will be useful to include nephrologists, vascular surgeons and dialysis nurses in the audit team (McCrea, 1999: 119-132).

**Step 2: Selection of indicators, criteria and standards and definition of intervention strategies**

Once the preliminary issues of the audit have been defined, the next step is to set the standards, which the current clinical practice will be compared to. At this point, it is important to clarify some definitions: (1) Indicator: a variable that allows to describe complex phenomena and to measure changes in relation to defined criteria, in order to guide the decisions aiming at obtaining or maintaining the changes. It can be expressed as absolute number, percentage, rate, or average; (2) Criterion: it is a definable and measurable aspect of health care that describes its quality. The audit criteria are explicit statements that define an outcome to be measured. In a clinical audit, it is a declaration of what should happen on the basis of good practice, and it should be evidence-based (Bursgess, 2011: 20-25); and (3) Standard: it is the standard of care to be achieved for each specific criterion, usually expressed as a percentage. It represents the threshold of acceptability, that is, the value that defines the upper or lower limit, so that the quality of care is considered to be appropriate (Baker and Fraser, 1995: 370-373). Some indicators are so important that the standards must be achieved in 100% of patients (*e.g.*, use of masks during the dressing of central venous catheters), but in general it is sufficient to meet the standard in a lower percentage (for example, in 80% of patients) (Benjamin, 2008: 1245).

The choice of criteria and standards is one of the most critical points in the design of a clinical audit and it requires the collaboration of all participants in the audit. Indeed, the quality of care provided (*i.e.*, the final result of the audit) will be evaluated just on the basis of a comparison with these parameters.

**Step 3: Data collection:** In clinical audit data can be collected prospectively or retrospectively (Simmons et al., 2006: 196-198). Taking into consideration past clinical documentation, the latter method is certainly faster, but often the quality of the collected information is not optimal.

Perspective audits are more expensive in terms of time, but they allow a more accurate design, while offering a more realistic description of the current clinical practice. Before proceeding with data collection, it is necessary to carefully plan the variables to be recorded, and define the type of analysis to be conducted on the collected data. These points are important to prevent the collection of useless data or, conversely, the lack of essential information. A specific-designed form or a database should be arranged to collect patient records (Lubrano et al., 1998: 216-220).

Step 4: Comparison of collected data with the standards and development of corrective actions: This is the central phase of clinical audit. In this phase, the team of professionals interested in the audit analyses the data and compares them with the pre-set standards. It is important to note that the critical nature of this moment lies in the fact that the professionals involved in the audit process can interpret the audit as an inspection of their clinical activity, thus becoming, unconsciously, an obstacle to an effective data analysis (Johnston et al., 2000: 23-36).

Step 5: Check and maintenance of improvements: The audit cycle ends with the stage of verification and monitoring of implemented strategies (National Institute for Clinical Excellence 2002, Benjamin 2008). Indeed, it is essential for a proper process of clinical audit to schedule periodic verifications of the effects of the changes introduced. It would be advisable to use a data collection and an organizational strategy similar to that used for the previous analysis, so that the results are comparable.

If it emerges that the objectives have not been achieved and the plan of improvements was not effective or sufficient, it could be necessary to make changes to planned strategies. However, also in case of success, a monitoring plan should be equally scheduled in order to maintain the improvements made.

Responsibility of Clinical Audit in Healthcare: Everyone who is involved in the care a patient receives should be responsible for clinical audit that means, all healthcare professionals are involved in the process. Furthermore, it is important to note that clinical audit is supported by those who have the authority and commitment to see changes put into practice. To buttress the points, the following are responsible for clinical audit in the healthcare environment:

- Management,
- Allied health professional,
- Medical staff, other staff to assist with accessing the evidence like Health Information Management Department staff, etc.
- The patient.

It is now recognized that services cannot be improved unless patients are involved. NHS (2010), cited by Hughes (2012) “nothing about me without me”. Interestingly, some school of thought proposed that clinical audit must include the patients who are the true professional in illness. Doctor may be highly qualified to diagnose and give treatment, however only the patient truly knows the pains, physical and physiological, and the stress of living with an illness. The patient voice is an invaluable part of audit. Though, patient involvement in clinical audit is relatively new and it still growing.

The Barriers to successful Audit: Achieving a successful audit is not without its difficulties, given the disparate and divergent views help about audit, it is not surprising that there are many perceived barriers to implementing it. In a study of medical audit activity in west Scotland, Kin and Smith reported a rule of diminishing returns where just half of those involved in audit had completed a study, and only half again had repeated a study. A program of evaluative study to review the progress of audit was commissioned by the Department of Health in 1993.

Its purpose was to assess the development of audit and its impact on the quality of care; involving a series of interlinked projects each directed at different areas of the medical audit program in the hospital and community health services in England. These have shown that the lack of sound methodology used in audit projects resulted in large variations in the approaches taken to audit some critics have argued that, to date, audit has led to “spectacularly” few obvious benefits to patient.

The main barriers to clinical audit can be largely classified under five major headings, such as Lack of Resources, Lack of an overall plan for audit, Relationship Problem, Organizational impediments and lack of expertise or advice in project design and analysis.

## **Material and Methods**

### *Study design*

A descriptive survey design was employed for the study.

### *Study Population*

The population of the study covered medical and paramedical staff which include; Health Information Management Practitioners, Doctors, Nurses, Laboratory, Pharmacy and Dental of Niger Delta University Teaching Hospital, Okolobiri Bayelsa state.

### *Sampling techniques*

Based on the large population of health facilities, the researcher in this study purposively selected Niger Delta University Teaching Hospital, Okolobiri as the setting for the study through convenience sampling technique of health professionals were chosen for the study.

### *Sample size*

The sample size for the study was 67 healthcare providers ranging from Health Information Management Practitioners, Doctors, Nurses, Medical Laboratory staff, Pharmacy staff and Dental staff were used.

### *Instrument for Data Collection*

A structure questionnaire was used as the primary tool for the collection of data. The questionnaire was administered face to face to the respondents and was retrieve by the researcher for further analysis.

### *Method of Data Analysis*

The data was presented using tables and percentages. Means and standard deviation were used for the data analysis.

### *Ethical Consideration*

Ethical approval was sorted from the Research and Ethics Committee of the Niger Delta University Teaching Hospital (NDUTH), Okolobiri and was granted approval to carry out the study in the Hospitals. Confidentiality of respondents were ensured by getting their consent before recruiting them for the study.

## **Results**

The demographic information from the findings depicted that out of 67 respondents, 59.7% (40) were male respondents while 40.3% (27) were female respondents, indicating that majority of the respondents were males. Age distribution of respondents showed that 7.5%, 22.4%, 29.8%, 32.8% and 7.5% were of age bracket 20-25, 26-31, 32-37, 38-43 and 44+ respectively, implying that majority of the respondents were of age bracket.

Also, marital status of respondents as 31.3%, 56.7%, 1.5% and 10.5% for singles, married, widow and divorce/separated respectively, indicating that majority of the respondents were married persons. For educational level, 70.1%, 23.9% and 6.0% were holders of ND/Technician, HND/B.Sc., and M.Sc. respectively, indicating that most of the respondents were holders of ND/Technician certificates. It was further showed that 14.9%, 56.7% and 28.4% have working experience range of 0-5, 6-11 and 12-17, implying that most of the respondents have rendered between 6-11 years of service.

Table 1. Distribution of Respondents' Demographic Information

S/N	Variables	Frequency	Percentage%
1	GENDER		
	Male	40	59.7
	Female	27	40.3
2	AGE		
	20-25	5	7.5
	26-31	15	22.4
	32-37	20	29.8
	38-43	22	32.8
	44+	5	7.5
3	MARITAL STATUS		
	Single	21	31.3
	Married	38	56.7
	Widow	1	1.5
	Divorce/separated	7	10.5
4	LEVEL OF EDUCATION		
	ND/Technician	47	70.1
	HND/B.Sc.	16	23.9
	M.Sc.	4	6.0
	Others (specify)	0	
5	WORKING EXPERIENCE		
	0-5	10	14.9
	6-11	38	56.7
	12-17	19	28.4
	18-23	0	0
	24+	0	0

Source: Field Work (2019)

Table 2. Summary of Descriptive Statistics. To what extent health practitioners comply with clinical/medical audit in their health facilities?

Item No	Total	Mean X	Stand. Dev.	Mean %	Criterion mean	Decision
1	67	1.81	0.85	45	2.5	Rejected
2	67	2.05	0.42	51		Rejected
3	67	3.07	1.21	77		Accepted
4	67	1.82	0.67	46		Rejected
5	67	1.58	0.63	40		Rejected
6	67	1.66	0.61	42		Rejected
7	67	1.70	0.71	43		Rejected
8	67	1.61	0.57	40		Rejected
9	67	1.69	0.67	42		Rejected
10	67	1.82	0.63	46		Rejected
Grand		1.88	0.70	47		Rejected

Source: Field Work (2019)

Table 2 showed health practitioners' level of compliance with clinical/medical audit practice in health facilities. Out of ten processes evaluated for clinical audit practice, only one item, which is developing audit criteria or setting measurable standard was accepted

as being practice, having a mean/standard deviation of  $3.07 \pm 1.21$  with mean percentage of 77% indicating that such compliance was high. Meanwhile, all other items have mean less than criterion mean of 2.5, indicating that respondents rejected complying with clinical audit practice. Table 2 showed a grand mean/standard deviation of  $1.88 \pm 0.70$  with a mean percentage of 47% which is observed as very low compliance with clinical/medical audit in health facilities.

Table 3. Summary of Descriptive Statistics. What are the roles of clinical/medical audit in health care delivery system?

Item No	Total	Mean X	Stand. Dev.	Mean %	Criterion mean	Decision
1	67	4.81	0.72	96	3.0	Accepted
2	67	4.81	0.72	96		Accepted
3	67	4.82	0.57	96		Accepted
4	67	4.84	0.44	97		Accepted
5	67	4.66	0.84	93		Accepted
6	67	3.70	1.04	74		Accepted
7	67	4.51	1.03	90		Accepted
8	67	4.82	0.57	96		Accepted
9	67	4.72	0.71	94		Accepted
10	67	4.82	0.38	96		Accepted
Grand		4.65	0.70	93		Accepted

Source: Field Work (2019)

Table 3 reveals that all items that measured role of clinical/medical audit for effective healthcare delivery showed positively accepted by respondents. The table shows a grand mean/standard deviation of  $4.65 \pm 0.70$  with a mean percentage of 93%, indicating a mean greater than the criterion mean ( $4.65 > 3.0$ ). This implies that clinical/medical audit has a very high role for an effective healthcare delivery.

Table 4. Summary of Descriptive Statistics. What are the attitudes of staff towards the use of clinical/medical audit for an effective healthcare delivery?

Item No	Total	Mean X	Stand. Dev.	Mean %	Criterion mean	Decision
1	67	4.03	1.33	81	3.0	Accepted
2	67	4.70	1.60	94		Accepted
3	67	2.52	1.23	50		Rejected
4	67	3.97	1.41	79		Accepted
5	67	4.38	1.26	88		Accepted
6	67	3.87	1.45	77		Accepted
7	67	4.85	1.47	97		Accepted
8	67	5.0	0	100		Accepted
Grand		4.04	0.97	83		Accepted

Source: Field Work (2019)

Table 4 shows a grand mean/standard deviation of  $4.04 \pm 0.97$  with mean percentage of 83%, implying that respondents have a very high level of positive attitude towards clinical/medical audit practice. However, table shows that respondents rejected the

opinion that “I need motivation before conducting clinical audit”, indicating that they are already intrinsically motivated to do clinical audit.

Table 5. Summary of Descriptive Statistics. What are the factors militating against clinical/medical audit practice in health facilities?

Item No	Total	Mean X	Stand. Dev.	Mean %	Criterion mean	Decision
1	67	3.13	1.80	63	3.0	Accepted
2	67	2.48	1.75	50		Rejected
3	67	4.78	0.42	96		Accepted
4	67	2.90	1.31	58		Rejected
5	67	4.18	0.77	84		Accepted
6	67	4.81	0.39	96		Accepted
7	67	4.30	0.46	86		Accepted
8	67	4.97	0.17	99		Accepted
Grand		3.94	0.88	79		Accepted

Source: Field Work (2019)

The above table shows item 2 and 4 had mean/standard deviation  $2.48 \pm 1.75$  and  $2.90 \pm 1.31$  respectively with mean percentage of 50% and 58% respectively, indicating a rejection that tediousness and time consuming with fear of litigation are militating factors against clinical auditing because their means were less than the criterion mean of 3.0. Meanwhile, respondents agreed positively that lack of focus and standard, lack of implementation of findings, lack of resources, lack of expertise or advice on project design, lack of overall plan for audit and absence of supportive working relationship between clinicians and managers were factors militating against clinical audit in healthcare delivery system because respondent’s means were greater than criterion mean of 3.0. Nevertheless, the grand mean of 79% indicates that all factors measured have one way or the other militates against clinical audit.

**Discussion**

This study was aimed at assessing the impact of clinical /medical audit for an effective healthcare delivery services. This study made use of 67 respondents, of which 59.7% (40) were male respondents while 40.3% (27) were female respondents, indicating that majority of the respondents were males. The study observed that majority of the respondents fall within age bracket 38-43. Also majority of the respondents were married persons. For educational level, 70.1%, 23.9% and 6.0% were holders of ND/Technician, HND/B.Sc., and M.Sc. respectively, indicating that most of the respondents were holders of ND/Technician certificates. This study further identified that 14.9%, 56.7% and 28.4% have working experience range of 0-5, 6-11 and 12-17, implying that most of the respondents have rendered between 6-11 years of service. Hania and Hania, (2017) made use of 40 patients in their study.

One of the findings of this current study was that clinical audit compliance rate was as low as 47% in the health facilities. This finding was not in line with Hania and Hania, (2017) which revealed that there was 99.5% compliance in a single member of staff carrying out all stages of the safe surgery check for all patients per theater list, which correspond to a single time-out check being conducted by a different member of staff. It crystal clear that in Bayelsa State clinical audit is rarely done in the health facilities for effective healthcare delivery.



Another finding of this study was that clinical audit played a critical and very important role in healthcare delivery. The study observed that clinical/medical audit has a very high role for an effective healthcare delivery at 93%. This finding suggests the importance of clinical audit. Furia et al. (2014: 163-193) supported this current study's finding clinical audit enable the identification of the major deficiencies in the health records and helped to develop best practices in the hospital settings which could result to a better documentation of healthcare.

This current study observed that respondents have a very high level of positive attitude (83%) towards clinical/medical audit practice. However, table shows that respondents rejected the opinion that "I need motivation before conducting clinical audit", indicating that they are already intrinsically motivated to do clinical audit. In another study, it was similarly revealed that majority of respondents held positive attitudes towards the conduct of clinical audit in healthcare delivery system (Hania and Hania, 2017: 35-38).

It became worrisome when noted that health professionals responded that clinical audit has a very important role to play for effective health care services and they have positive attitude towards conducting clinical audit but this current study revealed very low compliance to the conduct of clinical audit. To diminish this worry, the study investigated the possible factors that may militate against clinical audit and it was revealed that lack of focus and standard, lack of implementation of findings, lack of resources, lack of expertise or advice on project design, lack of overall plan for audit and absence of supportive working relationship between clinicians and managers were factors militating against clinical audit in healthcare delivery system. Johnston et al. (2000: 23-36) supported the finding of this study by classifying the barriers to clinical audit into five main groups which include lack of resources, lack of expertise or advice in project design and analysis, problems between groups and group members, lack of an overall plan for audit, and organizational impediment. Another study reveals that nurses face different levels of challenges in the implementation of nursing audit feedback ranging from communication of audit report to short time frame for implementation of standard care expected of them (Anieche, et al., 2020: 34-39). These previous findings justify the findings of this study that identified factors have the potency to hinder clinical audit in any health facility.

### **Conclusion**

Based on the discussion of findings, the study concludes that clinical/medical audit has a very high impact in healthcare delivery system for effective healthcare services. It is noteworthy that health professionals have positive attitude to clinical audit implementation and conduct, however was revealed that rate of compliance was low which possibly influenced by the factors investigated to be militating against clinical audit conduct or implementation. Clinical audit can be a valuable assistance to any programme which aims to improve the quality of health care and its delivery.

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