# KNOWLEDGE OF HEALTHCARE PROVIDERS ON HIV/AIDS SURVEILLANCE IN TERTIARY HEALTH INSTITUTIONS, NORTH-EAST, NIGERIA

**UNEGBU, V. E.1,BABALE, G. N.2**

**Department of Information Resources Management,**

**Babcock University, Ilishan-Remo, Ogun State, Nigeria.**

**Abstract**

*The study surveyed knowledge of healthcare providers on HIV/AIDS core, incidence, behavioral and enhanced perinatal surveillance data in tertiary health institutions in North-East, Nigeria. Survey design was used in the study. A total of 382 healthcare providers were proportionately selected out of a population of 5,050 from the whole 9 tertiary health institutions in the North-East. A self-structured and validated questionnaire was used for data collection. Data analysis involves the use of mean and standard deviation. The study revealed a low understanding of healthcare providers on HIV/AIDS core, incidence, behavioural and enhanced perinatal surveillance data with a mean = 2.69, SD = 0.889 while a high score level on their understanding of health information management standard and policy practices was revealed with a mean = 4.69, SD = 0****.228****. The study underscores the need for regular training of healthcare providers to understand the importance of integrating the components of HIV/AIDS core, incidence, behavioural and enhanced perinatal surveillance data in the tertiary health institutions in North-East, Nigeria. It was recommended that the management of 9 tertiary health institutions in the North-East, should appreciate the understanding of health information management education practice by healthcare providers which in turn enhance the integration of HIV/AIDS core, incidence, behavioural and enhanced perinatal surveillance data through sorting, categorizing and classifying of the disease by type.*

**Keywords:** knowledge of healthcare providers, HIV/AIDS, Core Surveillance Data, Incidence Surveillance Data, HIV/AIDS Behavioural Surveillance Data.

# INTRODUCTION

The World Health Organization (WHO) (2019) reports that since the discovery of HIV/AIDS in USA in 1981, the disease has claimed more than 36 million lives globally. UNAID (2021) reports a global summary of 37.7 million living with HIV/AIDS, 36 million adults, 19.3 were women and 1.7 were children respectively. Similarly, CDC (2020) reported that Sub-Saharan Africa has the highest incidence rate of 7 out of every 10 people infected with the disease. National Action Committee on AIDS (NACA) (2020) reports that Nigeria has 3.1 million people living with HIV/AIDS. Despite these trend, healthcare providers still have problem of pertise with sorting, cate gorizing and classifying HIV/AIDS surveillance data by type. The study intends to critically review gaps as it relates to sorting, categorizing and classifying of HIV/AIDS surveillance data taking into consideration expertise of HIM practitioners. The Council of State and Territorial Epidemiologist (2013) stated that, to effectively and efficiently sort, categorize and classify HIV/AIDS surveillance data, entry by healthcare providers during encounter with the patients is paramount and health information management practitioner’s role must be recognized to include systematic data collection, analysis, validation, interpretation and sharing of information with stakeholders for decision making. Literature review indicates that the knowledge of HIM providers towards sorting, categorizing and classifying of HIV/AIDS surveillance data by type is paramount although the understanding varies according to regions and among healthcare providers but most of them find it difficult to identify information needed. Therefore, training of healthcare providers is essential to enable them determine needs, formulate problem, plan the surveillance process, implementation of plan, communication of appropriate information and audit surveillance factsheet. These processes are essentially the roles that must be played by the healthcare providers to ensure data governance and stewardship, especially by HIM expertise (Cassidy, 2011).

CDC (2018) Identified three categories of healthcare providers - physicians, allied healthcare and social service providers respectively. Experience has shown that some facilities provide specific services based on their expertise such as medical doctors labeled as physicians who provide clinical services while nurses, pharmacists, lab scientists, physiotherapists, radiographers, health information management providers and social welfare officers are lebelled as allied health practitioners. To integrate of HIV/AIDS surveillance data, it requires the expertise of health information management practitioners for the collection of data to facilitate sorting, categorizing and classifying diagnoses, newly infected cases, risk or vulnerable groups and cases of transmission. Takarinda, Nyandudu, Govha, Gombe, Juru and Mufuta (2021) In a study in Zimbabwe on reporting. However, it was found out that there was lack of reporting guidelines, limited co-ordination between healthcare providers and there was also limited competencies. As a result of these, healthcare providers were given training with emphasis to health information management practitioners whose roles and skills encompasses sorting, categorizing and classifying data among others. The American Health Information Management (AHIMA) (2017) advocates for the re-definition of the roles of health information management practitioners to include knowledge and skill on data extraction from patient/provider encounter forms so as to aggregate clinical data. Dick and Steen (2016) further advocated that the design of medical record’s form should be handled by experts.

Rand (2014) in his study on adult morbidity and mortality in Botswana used Health Surveillance Data in a system to assess the impact of HIV/AIDS and Antiretroviral treatment by reviewingbirth and death register, summary of midnight census and clinics statistic which form triangulation surveillance tool offered reasonable approach to evaluate impact of HIV/AIDS interventions, complementing cohort approaches that monitor individual-level health outcomes. WHO (2012) states that HIV/AIDS core surveillance activities involve collaborating with public health practitioners to identify changes in trends of the disease. HIV/AIDS core surveillance is the sum total of HIV/AIDS diagnosis made each year thereby generating prevalence and trends from morbidity, and mortality of the epidemic. Georgia Department of Public Health (2014) further added that HIV/AIDS core surveillance data involves determining the characteristics of persons diagnosed with HIV, scope of the epidemic, and risk behavior. Fact sheet is therefore generated using enhanced HIV/AIDS reporting system (eHARS) from the repository for planning and allocation of resources.Themajor data constructs and key data elements in reporting HIV/AIDS follow a well-established set of core surveillance criteria.

CDC (2014) states that the criteria for reporting HIV/AIDS core surveillance data includes gathering detailed data such as vital status, social exposure category, case definition category, clinical or laboratory information required to meet the HIV/AIDS case definition to specify date of diagnosis, geographic location, and patient demographic characteristics. In addition, information on payer, facility of diagnosis, antiretroviral use, treatment service referrals and mortality to indicate cause of death and place of death may be collected. However, these data/information are often not sorted, categorized and/or classified. Ryan (2016) uses HIV/AIDS case or core surveillance reporting as the predominant method as a type of surveillance in the United States to collect information about HIV/AIDS infection as the most relevant criteria. Maheu-Groux, M., Marsh, K., Doyle, Godin, Delauney and Johnson (2019). Stated that the Pediatric HIV/AIDS Confidential Case Report, captures perinatal HIV/AIDS testing history and the use of zidovudine as anti-retroviral drugs in pregnancy, during delivery, and for post-natal to the neonate.

The CIA (2012) reports that 30.1% of HIV/AIDS behavioural risk rate fall among IDU, homosexual and heterosexual risk group in Nigeria which were among the ages of 15-49 years. That in some states, the epidemic is more concentrated and driven by high risk behavior and that high risk factors that contribute to the spread of HIV/AIDS includes prostitution, high-risk practices among itinerant workers, high prevalence of Sexually Transmitted Infections (STI), clandestine high-risk heterosexual and homosexual practices. Others were international trafficking of women and irregular blood screening. The WHO (2022) identified gaps which remain between the collection of useful data and the actual use of the data was said to reduce people’s exposure to HIV/AIDS behaviour and to improve the lives of those infected. That information on HIV/AIDS risk behavior, if properly sorted, categorized and classified, could lead to determination of risk and hence lead to reduction of the disease burden. WHO further advocated for more efforts to improve the quality of data collection. The researcher observed that surveillance systems lack proper structure and strategy to the extent that appropriate staff, style and skill were haphazardly handled and the procedures for data management fragmented to the extent that many departments or groups take charge for their various aspects of data management with no single expert to take charge. No single entity is responsible for sorting, categorizing and classifying of all the data. Albert (2018) in his study on the emerging role of HIM practitioners buttressed their expertise towards handling big data for policy formulation. Furthermore, very few countries budget adequately for analyzing, presenting and using data, either to manage financial or human resources. Didier, Dzemaili, Perrenoud, Campbell, Gachoud, Serex, […] and Staffoni-Donadini (2020) randomly reviewed qualitative studies in Germany and found out that inter professional collaboration among healthcare providers was characterized with distrust, lack of clear cut roles leading to overlap and that team dynamic must address negate ve impact of distrust and roles overlap among healthcare providers. However, if group dynamic is adhered to, data and information sharing could lead to better understanding of the roles of healthcare providers towards sorting, categorizing and classifying the disease by types such as incidence. To determine behavior of infected persons with HIV/AID, element which constitute risk factors must be grouped as a type of indicator labeled HIV/AIDS behavioural surveillance data.

Kramer (2016) identifies 5 stages of data processing as data source, data store, prepared data, pattern, and knowledge. He states that data comes possibly from many sources, it is integrated and placed in some common data store. Part of it is then taken and pre-processed into a standard format. This ‘prepared data’ is then passed to a data mining algorithm which produces an output in the form of rules or some other kind of ‘patterns’. These are then interpreted to give a Grail for discovery of new and potentially useful knowledge. This brief description makes it clear that HIV/AIDS surveillance data are central to HIM knowledge discovery. At the pre-processing stage, data are interpreted into HIV/AIDS surveillance data based on type as opposed to the blind use of the results. These educational skills are far more of an art (skill learnt on the job) than an exact science. Literature also indicates that deficiencies still exist in term of scope and structural components of HIV/AIDS surveillance data to the extent that provider’s inconsistencies may translate to real or perceived deficiencies in the conceptual framework.

National Committee on Vital and Health Statistics (2019) define data stewardship as a responsibility, guided by principles and practices to ensure that appropriate knowledge is applied for the collection of data, viewing, storage, exchange, aggregation, and analysis. Therefore, that data governance or information governance is the high-level policies or strategies that define the purpose for collecting data, ownership of data and intended use of data. The formulation of appropriate application, data collection, data warehousing and analysis could provide the much needed solution on the types of HIV/AIDS surveillance. Almeida (2006) identifies three phases of policymaking that might occur, namely agenda setting, policy formulation, and policy implementation. At strategic level, HIM manager displays his competencies towards provision of complete and accurate factsheets for decision making on policy matters (AHIMA,2014). Although HIM practitioners face numerous challenges during the course of HIM practices owing to knowledge gap challenges.

HIM education practice involves acquisition of knowledge and showcasing competence in activities relating to health information management field. It advances best practice and creates practitioners for the future. Institute for Healthcare Improvement. (IHI) (2013) states that health information management (HIM) practitioners are competently armed with skills and tools to serve as data mangers within the healthcare environment, by providing quality information to achieve cost reduction, enhance better care, and improve population health. Huffman (1994)states that HIM practitioners have been key members of the healthcare team, combining knowledge of science, business, information management, and patient records with a professional and ethical commitment. Kola (2014) also stated that HIM profession and its traditional job roles have expanded alongside the continuing emergence of healthcare technology. It then shows that HIM practitioners’ primary function is to develop and deliver quality training to end users for the purpose of competence practices. These functions are applied to all HIM practitioners who have an obligation to maintain their professional competence through a commitment to lifelong learning and application of scientific research.

The concept of HIM research practice has expanded the scope and role of the profession to include scientific knowledge of data management. Nunn (2003) stated that with the introduction of information technology, HIM profession has constantly and uniquely witnessed expanding opportunities such as predictive role on data management. The research role has now paved the way for researchers towards development of HIM conceptual model which eventually underpin value chain of HIM education. Adebayo (2017) opine that growth and development of research could lead to review of HIM new roles and refinement of models to enhance best practice. Therefore, HIM research practice entails the development of scientific applications of knowledge to integrate data generated by various provider groups during encounter with the patient in the hospital. Sheridan, Wazlaf and Fox (2016) in their study on HIM leaders and the practice of leadership through the lens of Bowen Theory in which focus group discussion, observation of meetings and face to face interview with HIM Directors, Managers, Administrators and Colleaques and staff found out that HIM leaders are valued for HIM expertise in EHR, privacy, security and coding. The application of leadership in HIM practices depends on how he utilizes information provided by healthcare providers for decision making towards planning, implementation and evaluation of specific objectives. The emerging role of HIM practitioners is through scholarly research activities. AHIMA (2011) states that HIM research advances and validates best practice. Research also increases and enhances HIM’s contribution to patient safety and the quality of care. It identifies areas of risk and where improvements in practice are required. Institute of Medicine (IOM)(2012) state that risk or behavioural surveillance data identification, supports policy practice regulation as well as research proficiency among healthcare providers. Therefore, there is need for a greater participation of health information management practitioners in research activities. Opele and Okunoye (2019) opine that knowledge management of HIM practitioners is so important that no meaningful decision can be taken without the data/information input of HIM practitioners in Nigeria’s tertiary hospitals.

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# Statement of the problem

HIV/AIDS surveillance is an interventional process of watching over a disease pattern over a period of time. It is done by a regular, systematic data collection, analysis and interpretation of information for use. It is a process of tracking and describing changes in the epidemics over time. To generate HIV/AIDS surveillance data, it requires expertise and systematic administrative process for effective and efficient sorting, categorizing and classifying of the disease according to types. The process entails data integration from various providers during encounter with the patient and documentation of findings. Jahun et al. (2022) state that intensity of reporting process must be simple and accurate. Literature and observations indicate that even when HIV/AIDS surveillance data are being captured, they are not being properly sorted, categorized and classified. by type. These could probably be attributed to inadequate knowledge of healthcare providers to the extent that determination of impact, spread, risk and transmission of the disease could hardly be ascertained. However, knowledge sufficiency of Health Information Management practices if better utilized may enhance the much desired understanding of healthcare providers on HIV/AIDS surveillance data sorting, categorizing and classifying by type.

**Objective of the study**

The main objective of the study is to examine the knowledge of healthcare providers on HIV/AIDS surveillances data in Tertiary Health Institutions in the North-East, Nigeria. The specific objectives are to:

1. ascertain the level of knowledge of healthcare providers on types of HIV/AIDS surveillance data in Tertiary Health Institutions in North-East, Nigeria.
2. ascertain the level of knowledge of healthcare providers on types of health information management practices in Tertiary Health Institutions in North-East, Nigeria.

**Research questions**

The study intends to answer the following research questions:

1. What is the level of knowledge of healthcare providers on the types of HIV/AIDS surveillance data in Tertiary Health Institutions in North-East, Nigeria?
2. What is the level of knowledge of healthcare providers on the types of Health information management practices in Tertiary Health Institutions in North-East, Nigeria?

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# METHODOLOGY

The study adopted survey research design. The population of this study comprises of the six categories of both clinical and allied healthcare providers working in the nine tertiary health institutions of the North-East, Nigeria. They are Medical Doctors, Nursing officers, Laboratory Scientists, Pharmacist, Social Welfare officers and Health Information Management officers respectively. A sample is a subset of the population sufficient to provide generalization. The population of healthcare providers according to the 6 professional discipline in each of the 9 tertiary health institutions which stood at five thousand and fifty (5,050) accordingly. The process used to determine sample size was adopted from Krejcie and Morgan (1970) sample size determination to calculate the sample size for the nine (9) Tertiary Health Institutions of North-East, Nigeria. Thereafter, proportionate sampling technique was used to select the study participants.

Secondly, total enumeration was used to determine the tertiary health institutions in each of the six states of the North-East, Nigeria based on their strategic clinical philosophical objectives. The selection is purposive. Aina (2002) states that to get an objectively and meaningful response, purposive selection could assist the researcher.

According to Krejcie and Morgan (1970) the formula for calculating the actual sample size is given below:

S = required sample size

X2= the table value of chi-square for one degree of freedom at the desired confidence level

N = the population size

p = the population proportion (assumed to be 0.50 since this would provide the maximum sample size)

d = the degree of accuracy expressed as a proportion (0.05)

Thus:

S = X2 NP (1-P)

d 2(N-1) + X2 P(1-P)

= 3.841\*5,050\*0.5(1-0.5)

0.0025(5,050-1) + 0.05(1-0.05)

= 4849.26

12.62+0.0475

= 4,849.26

12.67

= 382(Sample Size)

# The sample size arrived at for this study is therefore 382. The instrument used for the collection in this study was a self-constructed questionnaire. Data collected was coded and analysed using the Statistical Package for Social Science Software (SPSS V.21).

# Data Analysis, Results and Discussion of Findings

Three hundred and eighty-two (382) copies of the questionnaire were administered on healthcare providers across nine (9) tertiary health institutions in North-East, Nigeria. Three hundred and eighty (382) copies representing (100%) were retrieved with remarkable responses, though the response on each of the questionnaire was at varying response rate, it was considered adequate for this study.

**Research question one:** What is the level of knowledge of healthcare providers on the types of HIV/AIDS Surveillance data in Tertiary Health Institutions in North-east, Nigeria?

**Table 1:**

***Types of HIV/AIDS Surveillance data in Tertiary Health Institutions***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Types of HIV/AIDS surveillance data** | Strongly Agree (5)  (%) | Agree (4)  (%) | Sometimes (3)  (%) | Disagree (2)  (%) | Strongly Disagree (1)  (%) | Mean | SD |
| **I understand that HIV/AIDS core surveillance data is a type of:** |  | | | | | **2.69** | **0.962** |
| information generated by providers to establish diagnosis for the determination of impact | 18(4.7) | 40(10.5) | 215(56.3) | 86(22.5) | 23(6) | 2.85 | **0**.860 |
| I sort, categorize and classify all the providers’ input to determine impact. | 38(9.9) | 26(6.8) | 190(49.7) | 79(20.7) | 49(12.8) | 2.80 | 1.07**0** |
| Information derived from clinical provider MR forms to determine prevalence of the disease. | 18(4.7) | 15(3.9) | 222(58.1) | 69(18.1) | 58(15.2) | 2.65 | **0**.946 |
| Providers’ encounter data/information being sorted, categorized and classified to determine impact. | 17(4.5) | 28(7.3) | 179(46.9) | 117(30.6) | 41(10.7) | 2.64 | **0**.928 |
| information generated from patients’ following encounter with other providers to determine trend of the disease | 17(4.5) | 18(4.7) | 185(48.4) | 86(22.5) | 76(19.9) | 2.52 | 1.01**0** |
| **I understand that HIV/AIDS incidence surveillance data is a type of:** |  |  |  |  |  | **2.66** | **0.949** |
| Information communication and audit of incidence surveillance data is vital for providers to determine spread | 21(5.5) | 30(7.9) | 203(53.1) | 98(25.7) | 30(7.9) | 2.77 | **0**.906 |
| Quality information Implementation of quality incidence surveillance data require provider/patient input on specific encounter forms | 20(5.2) | 40(10.5) | 159(41.6) | 126(33) | 37(9.7) | 2.69 | **0**.967 |
| Information collated from providers’ encounter forms to determine spread | 15(3.9) | 32(8.4) | 181(47.4) | 119(31.2) | 35(9.2) | 2.67 | **0**.900 |
| information which points towards establishing new infection by lab test | 18(4.7) | 30(7.9) | 177(46.3) | 105(27.5) | 52(13.6) | 2.63 | **0**.974 |
| Information sorted by HIM providers’ to classify newly infected to determine spread | 19(5.0) | 23(6.0) | 170(44.5) | 107(28) | 63(16.5) | 2.55 | **0**.999 |
| **(c) I understand that HIV/AIDS behavioural surveillance data is a type of:** |  |  |  |  |  | **2.72** | **0.869** |
| Information which points towards establishing risk of infection | 13(3.4) | 42(11.0) | 239(62.6) | 72(18.8) | 16(4.2) | 2.91 | **0**.771 |
| HIM Providers Information on communication/audit of behaviour to determine risk | 26(6.8) | 21(5.5) | 214(56) | 74(19.4) | 47(12.3) | 2.75 | **0**.977 |
| Information derived from integrating input of all clinical providers during their encounter with the patient to determine risk | 8(2.1) | 18(4.7) | 248(64.9) | 66(17.3) | 42(11.0) | 2.70 | **0**.808 |
| Information that will guide Implementation of surveillance on risky behavior | 11(2.9) | 21(5.5) | 205(53.7) | 113(29.6) | 32(8.4) | 2.65 | **0**.824 |
| Information generated on social attitude so as to plan behavioral approach | 17(4.5) | 16(4.2) | 201(52.6) | 84(22) | 64(16.8) | 2.58 | **0**.966 |
| **(d)I understand that HIV/AIDS enhanced perinatal surveillance data is a type of:** |  | | | | | **2.79** | **0.773** |
| Information which guide HIM provider planning data sorting. | 13(3.4) | 23(6.0) | 243(63.6) | 92(24.1) | 11(2.9) | 2.83 | **0**.724 |
| Information generated during pre, intra and post Natal provider assessment of pregnant mothers. | 13(3.4) | 16(4.2) | 256(67) | 83(21.7) | 14(3.7) | 2.82 | **0**.715 |
| Information that will enhance HIM provider communication/audit. | 17(4.5) | 22(5.8) | 234(61.3) | 86(22.5) | 23(6.0) | 2.80 | **0**.815 |
| Information on Implementation of surveillance data categorization | 10(2.6) | 31(8.1) | 232(60.7) | 91(23.8) | 18(4.7) | 2.80 | **0**.758 |
| information which points towards establishing transmission of the disease from mother to child during ANC visit | 15(3.9) | 25(6.5) | 217(56.8) | 93(24.3) | 32(8.4) | 2.73 | **0**.855 |
| **Grand Mean** | | | | | | **2.72** | **0.889** |

**Source: Field work, 2022**

**Key: SA = Strongly Agree (5), A = Agree (4), ST = Some Times (3), D = Disagree (2), SD = Strongly Disagree (1)**

The decision rule states that mean 1-1.79 = very low understanding, 1.8-2.59 = low understanding, 2.6-3.39 = moderate understanding, 3.4-4.19 = high understanding, 4.2-5.00 = very high understanding. Criteria mean of 3 is calculated as follows; 5+4+3+2+1 = 15/5 = 3. By implication, any mean score above 3 is considered “Agree” or “Strongly Agree” while mean score below 3 is considered “Disagree” or “Strongly Disagree”. Table 1 revealed the respondents’ view on the level of understanding of healthcare providers on the types of HIV/AIDS surveillance data in tertiary health institutions in North-East, Nigeria. It indicated that the respondents in all the tertiary health institutions showed low level of understanding on types of HIV/AIDS Surveillance data with a (grand mean = 2.72, SD=.889) on a scale of 5 under the decision rule. The result furthermore revealed that healthcare providers have a low understanding of HIV/AIDS core surveillance data as a type of information generated to establish diagnosis for the determination of impact (mean = 2.85), so also a low understanding of healthcare provider’s input was recorded under sorting, categorizing and classifying of the disease to determine impact (mean = 2.80). This therefore reveals a limited knowledge of healthcare providers on the importance of HIV/AIDS case or core surveillance data as determinant of impact of the disease. The responses also revealed low understanding of HIV/AIDS incidence surveillance data (mean = 2.66) as a type of Information communication and audit as vital for healthcare providers to determine spread (mean = 2.77) as well as implementation of qualitative incidence surveillance data derivable from provider/patient input on specific encounter forms (mean = 2.69). This therefore reveals a limited knowledge of healthcare providers on the importance of HIV/AIDS incidence surveillance data as determinant of spread of the disease. The Table showed a low level of understanding of HIV/AIDS behavioral surveillance data (mean = 2.72) as a type of information which points towards establishing risk of infection with a mean = 2.91, also that a low understanding of HIM Providers Information on communication/audit of behavior to determine risk (mean = 2.75), and a type of information derived from integrating input of all clinical providers during their encounter with the patient to determine risk (mean = 2.70). This therefore reveals a limited knowledge of healthcare providers on the importance of HIV/AIDS behavioral surveillance data as determinant of risk of the disease. The last indicator on the Table 4.2 also showed a low understanding of HIV/AIDS enhanced perinatal surveillance data (mean = 2.79) as a type of information which guide healthcare providers planning data to appreciate sorting with a (mean = 2.83), and information generated during pre, intra and post Natal provider assessment of pregnant mothers (mean = 2.82), so also information that will enhance HIM provider communication/audit (mean = 2.80). This therefore reveals a limited knowledge of healthcare providers on the importance of HIV/AIDS enhance perinatal surveillance data as determinant of transmission of the disease.

The interpretation is that the low understanding of the types of HIV/AIDS surveillance data made it difficult for healthcare providers to sort, categorize and classify the disease to the extent that reduction of impact, spread, risk and transmission still indicated knowledge deficit.

**Research question two:** What is the level of understanding of knowledge of healthcare providers on the types of Health Information Management Practices in Tertiary Health Institutions in North-East, Nigeria?

**Table 2:**

***Health Information Management Practices***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Variables | Strongly Agree (5) (%) | Agree (4)  (%) | Sometimes (3)  (%) | Disagree (2)  (%) | Strongly Disagree (1) (%) | Mean | SD |
| **(a) I understand that** **HIM Education practice is a type of indirect activity which entails**: | \*\*\* |  |  |  |  | **4.09** | 0**.228** |
| Data Transformation To Determine HIM Provider Competence | 133(34.8) | 249(65.2) | 0(0.00) | 0(0.00) | 0(0.00) | 4.35 | 0.477 |
| Data Capture To Determine Provider Competence | 124(32.5) | 257(67.3) | 1(.3) | 0(0.00) | 0(0.00) | 4.32 | 0.473 |
| Data Sharing Among HIM Providers To Determine Competence | 46(12) | 336(88) | 0(0.00) | 0(0.00) | 0(0.00) | 4.12 | 0.326 |
| Information governance to determine HIM provider competence | 44(11.5) | 338(88.5) | 0(0.00) | 0(0.00) | 0(0.00) | 4.12 | 0.320 |
| Data Validation To Determine Provider Competence | 37(9.7) | 343(89.8) | 2(0.5) | 0(0.00) | 0(0.00) | 4.09 | 0.307 |
| Data Maintenance To Determine Provider Competence | 30(7.9) | 352(92.1) | 0(0.00) | 0(0.00) | 0(0.00) | 4.08 | 0.269 |
| Decision Support To Determine HIM Provider Competence. | 2(0.5) | 380(99.5) | 0(0.00) | 0(0.00) | 0(0.00) | 4.01 | 0.072 |
| Information dissemination to determine HIM provider competence. | 5(1.3) | 376(98.4) | 1(0.3) | 0(0.00) | 0(0.00) | 4.01 | 0.125 |
| Innovation to determine HIM provider competence | 4(1.0) | 377(98.7) | 1(0.3) | 0(0.00) | 0(0.00) | 4.01 | 0.114 |
| Data/Information Analysis To Determine HIM Provider competence | 1(.3) | 379(99.2) | 2(0.5) | 0(0.00) | 0(0.00) | 4.00 | 0.089 |
| Information liaison to determine HIM provider competence. | 1(.3) | 380(99.5) | 1(0.3) | 0(0.00) | 0(0.00) | 4.00 | 0.072 |
| Information stewardship to determine HIM provider competence | 2(.5) | 379(99.2) | 1(0.3) | 0(0.00) | 0(0.00) | 4.00 | 0.089 |
| **b) I understand that HIM Research practice is a type of indirect activity which entails:** |  |  |  |  |  | **4.21** | 0**.364** |
| information stewardship to determine HIM provider proficiency | 143(37.4) | 238(62.3) | 1(0.3) | 0(0.00) | 0(0.00) | 4.37 | 0.489 |
| strategic information dissemination to determine HIM provider proficiency | 130(34) | 251(65.7) | 1(0.3) | 0(0.00) | 0(0.00) | 4.34 | 0.479 |
| information governance to determine HIM provider proficiency | 108(28.3) | 273(71.5) | 1(0.3) | 0(0.00) | 0(0.00) | 4.28 | 0.455 |
| information liaison to determine HIM provider proficiency | 103(27) | 279(73) | 0(0.00) | 0(0.00) | 0(0.00) | 4.27 | 0.444 |
| data transformation to determine HIM provider proficiency | 101(26.4) | 279(73) | 2(0.5) | 0(0.00) | 0(0.00) | 4.26 | 0.451 |
| data validation to determine HIM provider proficiency | 27(7.1) | 355(92.9) | 0(0.00) | 0(0.00) | 0(0.00) | 4.07 | 0.257 |
| Data capture to determine HIM provider proficiency. | 19(5) | 362(94.8) | 1(0.3) | 0(0.00) | 0(0.00) | 4.05 | 0.224 |
| data/Information analysis to determine HIM provider proficiency | 5(1.3) | 377(98.7) | 0(0.00) | 0(0.00) | 0(0.00) | 4.01 | 0.114 |
| **(c) I understand that HIM Standard practice is a type of indirect activity which entails:** |  |  |  |  |  | **4.22** | 0**.426** |
| Innovation to determine HIM practices interoperability. | 136(35.6) | 245(64.1) | 1(0.3) | 0(0.00) | 0(0.00) | 4.35 | 0.484 |
| Data transformation to determine HIM practices interoperability. | 110(28.8) | 272(71.2) | 0(0.00) | 0(0.00) | 0(0.00) | 4.29 | 0.453 |
| Data validation to determine HIM practices interoperability. | 99(25.9) | 281(73.6) | 2(0.5) | 0(0.00) | 0(0.00) | 4.25 | 0.448 |
| Data capture to determine HIM practice interoperability. | 91(23.8) | 291(76.2) | 0(0.00) | 0(0.00) | 0(0.00) | 4.24 | 0.427 |
| Data maintenance to determine HIM practices interoperability. | 87(22.8) | 295(77.2) | 0(0.00) | 0(0.00) | 0(0.00) | 4.23 | 0.420 |
| Information stewardship to determine HIM practices interoperability. | 88(23) | 290(75.9) | 4(1.0) | 0(0.00) | 0(0.00) | 4.22 | 0.439 |
| Information governance to determine HIM practices interoperability. | 69(18.1) | 311(81.4) | 2(0.5) | 0(0.00) | 0(0.00) | 4.18 | 0.394 |
| Information resources management to determine HIM practices interoperability. | 67(17.5) | 313(81.9) | 2(0.5) | 0(0.00) | 0(0.00) | 4.17 | 0.390 |
| Data/information analysis to determine HIM practices interoperability. | 45(11.8) | 324(84.8) | 13(3.4) | 0(0.00) | 0(0.00) | 4.08 | 0.381 |
| (**d) I understand that HIM Policy practice is a type of indirect activity which entails**: |  |  |  |  |  | **4.31** | 0**.540** |
| Information sharing to determine HIM practices regulation. | 189(49.5) | 191(50) | 2(0.5) | 0(0.00) | 0(0.00) | 4.49 | 0.511 |
| Data maintenance to determine HIM practices regulation. | 133(34.8) | 246(64.4) | 3(0.8) | 0(0.00) | 0(0.00) | 4.34 | 0.491 |
| Data capture to determine HIM practice regulation. | 116(30.4) | 266(69.6) | 0(0.00) | 0(0.00) | 0(0.00) | 4.30 | 0.460 |
| Information liaison to determine HIM practices regulation | 135(35.3) | 224(58.6) | 19(5.0) | 4(1.0) | 0(0.00) | 4.28 | 0.605 |
| Data validation to determine HIM practice regulation | 106(27.7) | 258(67.5) | 6(1.6) | 12(3.1) | 0(0.00) | 4.20 | 0.617 |
| Data transformation to determine HIM practices regulation. | 89(23.3) | 271(70.9) | 18(4.7) | 4(1.0) | 0(0.00) | 4.16 | 0.544 |
| Data/information analysis to determine HIM practice regulation | 67(17.5) | 263(68.8) | 52(13.6) | 0(0.00) | 0(0.00) | 4.04 | 0.557 |
| **Grand Mean** | | | | |  | **4.21** | 0**.389** |

Source: Field work HIM Practices 2022

**Key: SA = Strongly Agree (5), A = Agree (4), ST = Some Times (3), D = Disagree (2), SD = Strongly Disagree (1)**

The decision rule states that mean 1-1.79 = very low understanding, 1.8-2.59 = low understanding, 2.6-3.39 = moderate understanding, 3.4-4.19 = high understanding, 4.2-5.00 = very high understanding. Criteria mean of 3 is calculated as follows; 5+4+3+2+1 = 15/5 = 3. By implication, any mean score above 3 is considered “Agree” or “Strongly Agree” while mean score below 3 is considered “Disagree” or “Strongly Disagree”.

Table 2 revealed that the respondents’ had a very high level of understanding of the types of Health Information Management Practices in Tertiary Health Institutions with a (grand mean = 4.21, SD = 0.389) on a 5 likert scale. The result further revealed a strong agreement on four of the indicators of health information management practices namely: health information management HIM education (4.09), Health Information Management research (mean = 4.21), Health Information Management standard (mean = 4.22) and health information management policy practices (mean = 4.31) respectively. Under HIM policy practice, the respondents indicated that it is a type of activity which entails information sharing to determine HIM practices regulation (mean = 4.49), data maintenance to determine HIM practices regulation (mean=4.34), data capture to determine HIM practice regulation (mean=4.30), information liaison to determine HIM practices regulation (mean = 4.28), and data validation to determine HIM practice regulation (mean=4.20). On HIM standard practice, the respondents stated that it is a type of indirect activity which entails innovation to determine HIM practices interoperability (mean = 4.35), data transformation to determine HIM practices interoperability (mean = 4.29), data validation to determine HIM practices interoperability (mean = 4.25); it also entails data capture to determine HIM practice interoperability (mean = 4.24), and data maintenance to determine HIM practices interoperability (mean = 4.23). Third most prevalent HIM practice is HIM research which the respondents agreed that it entails information stewardship to determine HIM provider proficiency (mean = 4.37), strategic information dissemination to determine HIM provider proficiency (mean = 4.34), information governance to determine HIM provider proficiency (mean = 4.28), information liaison to determine HIM provider proficiency (mean = 4.27), and data transformation to determine HIM provider proficiency (mean = 4.26). As seen in Table 4.3, the least prevalent HIM practice is HIM education which is an indirect activity that entails data transformation to determine him provider competence (mean = 4.35), data capture to determine provider competence (mean = 4.32), data sharing among him providers to determine competence (mean = 4.12), and information governance to determine him provider competence (mean = 4.12).

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# Discussion of Findings

**Research question one** sought to ascertain the level of understanding of knowledge of healthcare providers on the types of HIV/AIDS surveillance data in North-East, Nigeria. The result revealed that healthcare providers in tertiary health institutions in North-East, Nigeria hardly sort, categorize, and classify HIV/AIDS surveillance data by type, with an overall mean score of 2.72 despite the fact that they are responsible for generating the surveillance data at various levels of their encounter with the patients. Buthelzi, Davidson, and Kharsani (2016) stated that HIV/AIDS core, incidence, behavioural and enhanced perinatal surveillance data are key indicators for measuring impact, spread, risk and transmission of the disease.

Peterson (2021) stated that geographical information system is another technique that will assist healthcare providers in sorting, categorizing and classifying surveillance data, including HIV/AIDS surveillance data. Similarly, Wagenaar, Kenneth, Fernandes and Wagenaar (2015) emphasized that concerted efforts by all healthcare providers must be made to simplify routing data collection by types of HIV/AIDS surveillance data. That these will enhance adequate reporting efforts by focusing on key HIV/AIDS surveillance data indicators to allow easy data capture. Furthermore, simplifying the types of HIV/AIDS surveillance data into core, incidence, sources should undergo routine data capture, quality, audits and chart reviews, paired with the explicit engagement of healthcare providers and managers in the use of data for analysis and decision-making.

**Research question two** revealed a very high level of understanding of knowledge of healthcare providers on the influence of Health Information Management Practices in Tertiary Health Institutions with a grand mean=4.21, SD=.389. These therefore, indicated a strongly agreed response on four of the indicators of health information management practices.

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# Conclusion

This study provides empirical evidence that knowledge of healthcare providers is very important component on the types of HIV/AIDS surveillance data in tertiary health institutions in North-East, Nigeria. Findings of this study indicated that knowledge of healthcare providers strongly agree that the types of HIV/AIDS surveillance data impact, spread, risk and transmission of the disease was derived through sorting, categorizing and classifying of the disease by type. Based on these findings, it can be concluded that knowledge of healthcare providers in tertiary health institutions in North-East, Nigeria need the encouragement.

# Recommendations

Based on the findings of the study, the following recommendations are made:

1. The average mean score of 2.85 was recorded level of knowledge of healthcare providers in respect of ascertaining the types of HIV/AIDS surveillance data which revealed low level, calls for concerted efforts management of tertiary health institutions in the North-East, Nigeria to encourage their clinical and allied health professionals to improve on skills acquisition through workshop and seminar both National and International.

2. The researcher recommends that sorting, categorizing and classifying of HIV/AIDS surveillance data be done by HIM practitioners considering the fact that they perform the role of collection, collation, analysis, interpretation and presentation of information for decision making.

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