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Assessment on Level of Compliance on Health Information Contemporaries in Imo State-Owned secondary and Tertiary Hospitals, South Eastern Nigeria.

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ABSTRACT

The study assessed the level of compliance on contemporary health information system delivery in Imo state. The total population was 2,391(Two thousand three hundred and ninety-one) health workers from 13 (thirteen) hospitals comprising; teaching hospitals, specialist hospitals, hospital management boards, and general hospitals, from government-owned secondary and tertiary hospitals. The study was carried out between April to November 2022. A cross-sectional analysis of health workers was interviewed using a well-structured and pretested questionnaire. The research design used was a descriptive survey as well as an experimental study. The sample of the study was 342 health workers. The researcher adopted a Systematic random sampling technique. In this sampling technique, research samples were drawn at fixed intervals on a continuum.Findings from the study revealed that the compliance is inadequate or partial with 70% (49.8% + 27.5%) disagreeing and strongly disagreeing with the option of very adequate and adequate in Table 4.8. Findings from the study revealed that the compliance is inadequate or partial with 70% (49.8% + 27.5%) disagreeing and strongly disagreeing with the option of very adequate and adequate in Table 4.8. An intervention strategy was developed called hospital application software to integrate the healthcare system in the state into modern healthcare. Data were analyzed using SPSS, one-way ANOVA, and p-test to test hypotheses at 0.05 level of significance. In conclusion, health information contemporary is yet to be fully implemented in Imo state and other states in Nigeria. Recommendation, Healthcare institutions should be adequately funded by the government,

Keywords: Assessment, Compliance, Contemporaries Health Information,

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1. Introduction:

Health Information System can be defined as an organized and designed framework that manages healthcare data. The system includes the collection, storage, management, and transmission of patient'sElectronic Medical Records (EMR) and Traditional Medical Records (TMR) in hospital operational healthcare for policy decisions.
AHIMA, (2021) defined Health Information as the collection of data related to a person's medical history including symptoms, diagnosis, procedures, and outcome
Jaypee, (2016) stated that health information sources could be primary or secondary. In primary sources, data are collected directly from the source (health records) from the patient or the patient's relatives on arrival in a healthcare facility for medical attention. In secondary sources, data are collected from the existing source known as primary sources. A good example of a secondary source of data is the disease index that contains Patient diagnoses obtained from primary sources. Health Information Management is saddled with the responsibility of allowing access to patient information in support of clinical practices, health services, and medical research. Health information systems comprise all aspects of health, biomedical information, and other centers for information flow. Health information system does not occur in one administration but has a close link to all other systems.
A Health information service is understood as a system, that has the following components;
Concepts: (This refers to health and diseases)
Ideas: (This is known as equity: It could be in decision-making or sharing of health resources
Objectives: (It could be a hospital, ambulatory centers, etc.)

Persons: (Physicians and others).
These components are meant to interact with each other to support, control, and join one another for the achievement of the organization's aims. The purpose of a health information system is primarily to serve the management and minimize health risks and reduce the level of uncertainties related to decisions and achieve the objectives of the organization.

The contemporaries in health information systems are:
1. Electronic and manual health records
2. Monitoring and evaluation
3. Management information system
4. Health informatics
5. Medical billing
6. Healthcare System interoperability

Compliance to with modern trends in health information systems in Imo state is not encouraging as health care services rendered to a patient (s) are backward compared to modern caress services rendered by medical and health professionals

Problem Statements.

Most hospitals owned by the state are still using the traditional method of documentation (manual) method of documenting patient records, still consuming a large space in storing patient information. The major concern is the inability of healthcare institutions in the state to share patient information within andoutside healthcare industries for continuity of care (treatment) due to a lack of compliance with current trends in health information systems (HIS). Even during the lockdown, some healthcare facilities could not provide efficient healthcare to patients due to the unavailability of personnel, equipment, materials, and drugs. There was an increased rate of morbidities and mortalities. Some avoidable health conditions claimed lives due to ignorance and lack of compliance to the current development in healthcare service systems.

The studyaimedto assess the level of compliance on contemporary health information systems byState-ownedhospitals.

2. Literature Review on the concept of Health Information systems.

Health information systems (HIS) includewell-being (health) and biomedical data between various healthcare industries and management of patient data/ information framework to ensurethe best possible healthcare services.Universally, the rise of medical/ health data and information automation (technology)increases the productivity of health service conveyance, bringing down medical errors, and improving quality care.AHIMA, (2021) defined Health Information as the collection of data related to a person's medical history including symptoms, diagnosis, procedures, and outcomes.
Health Information System (HIS) is a framework designed to control health care data thatcollect, store, manage, recover and transmit patient manual and electronic health records.Health information system incorporates managingdata related to the programs or activities of healthcare providers and organizations. This is to improve patient outcomes, compelling and effective choice-making, and a great impact on policymaking, and education research (Brook,2020).

Electronic and manual health records:

Electronic Medical Record (EMR) is the digital collection of medical information about a person that is on a computer. An electronic medical record includes patient health history such as diagnoses medicines, test allergies immunization, and treatment.
Without a hospital information management system, modern hospitals would be inadequate. The system incorporates various departments such as medical staff, administrative staff, patients, etc. The use of software modules for medical record makes work easy, and faster and improve healthcare. The chart is replaced by a digital record comprising of written text, codes, images, audio, and video notes. This concept is referred to as an electronic medical record (EMR) (Liu and Zhu, 2013).

The benefitof Implementing Electronic Medical Records:

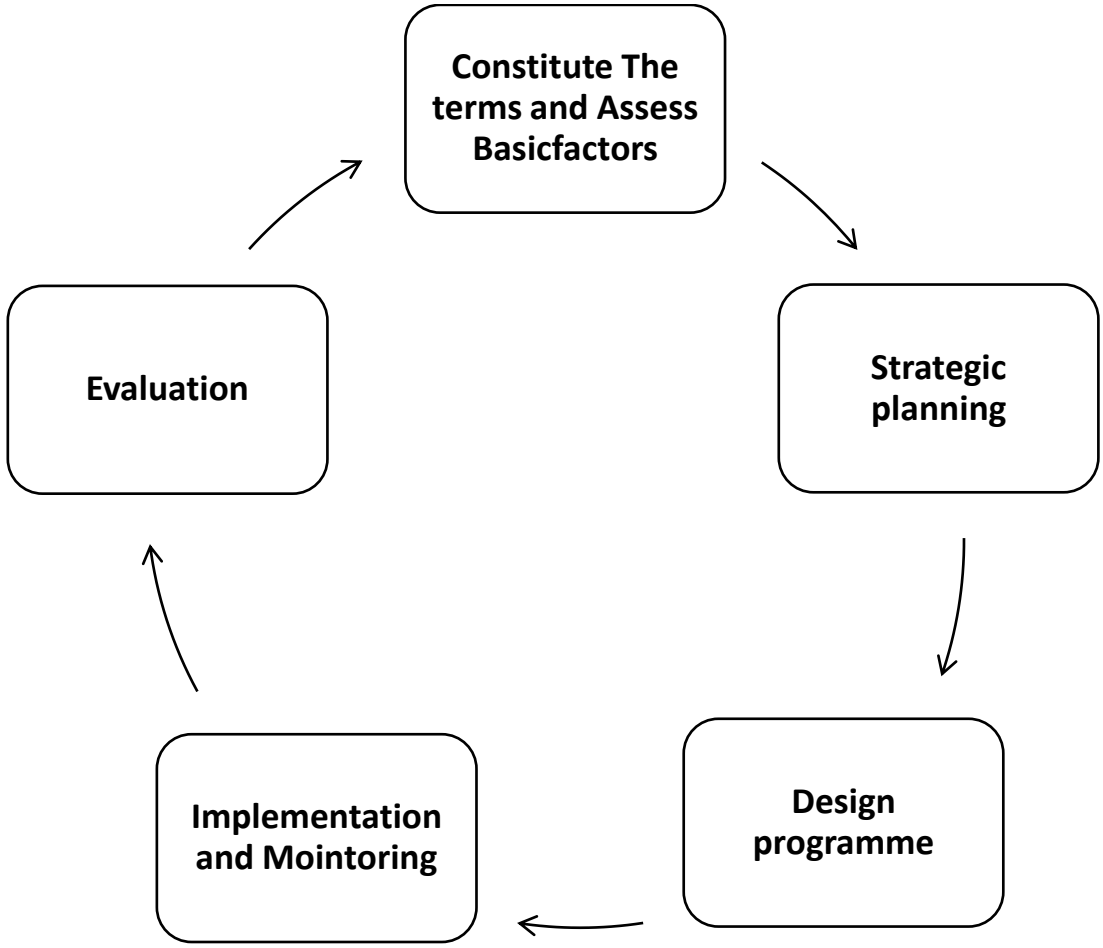
Implementing EMR is significant, and has important beneficial changes in practices. The transformation has significant roles in the work environment, from the doctor to staff and patients. If appropriately actualized, It will yield benefits in the quality of patient care, ease of charting, and improvement in revenue. It will reduce patient waiting time, reduce staff stress and improve productivity, income, and quality of health care.EHR is integrated care; it is also a repository of information on healthcare in digital format (computer form). It aids the storage and transmission model; it is accessible by many people (Users) so long as he/she has been authorized. EHR has a standardized data model that is
aimed at supporting the continuity of patient (s) efficient, and quality healthcare (Ada, 2016).**Functions of Electronic Health Records (EHR)**
Electronic Health Records are an important approach to enhancing quality data.
It has the capacity of documenting and storing patient information collected and documented during medical treatment. Digital health records function in line with the master records in the healthcare institution. It facilitates adequate authoritative working tools like setting up a workflow in an establishment that will promote efficiency in clinical practices and timely service to a patient. EHR also helps in policy decision-making. Electronic health records must encourage and assist patients to key in their data or information to enable the management of their health care, by the provider's order **(Pradeep, et al 2013)**.

Health Informatics

Health Informatics is a workflow developed globally to support healthcare providers and patients in mobile-designated homes, clinics, and hospitals. NLM (2016) explained health informatics as the process of gaining, retaining, retrieving, and applying healthcare information to guarantee adequate cooperation from all healthcare systems, by patients and caregivers.
Mark, (2015) opioid that health informatics is the method of applying information technology in healthcare delivery. He continued by explaining that health informatics is differentiated from bioinformatics. Many other terminologies are; hospital informatics, nursing informatics, clinical informatics, and biomedical informatics (BML).
The health informatics framework is aimed at generally to developed and assisting healthcare providers and the patient in various healthcare institutions and clinics, hospitals, and even various homes. Through the researchers have reviewed the goals, of the systems, the challenges affecting the implementation and evaluation.

Monitoring and evaluation: is a process of measuring, recording, collecting, and analyzing data of actual implementation of the program and communicating it to the program managers/ stakeholder so that any deviation from the planned operations are detected, diagnosis for causes of deviation and suitable corrective actions to ensure its conformity with the original plan and determine the value of specific interventions through data collection, collation, analysis, and interpretation. Monitoring and evaluation intend to decide the significance and satisfaction of goals, productivity advancement, viability, effect, and supportability which can assist with directing policymakers toward accomplishing the ideal goals (Igbidi, 2016). **Smart Criteria**
The term SMART is a Mnemonic acronym; SMART Criteria are common attributes that create transparency, verifiable toward certain objectives, with clear achievements and prediction of goals. For the setting of goals and objectives, there are certain questions to answer, such as: what exactly do I want to achieve? (Individual or Specific), where? (Quantifiable or Measurable), how? (Feasible or Achievable), when? (Time scale), with whom (Practical or Realistic). Other questions are, the conditions and limitations. what are possible alternatives or ways of achieving the set goals?

Fig 1; demonstrated five stages of the project cycle



Developed module for Hospital Application (Python and Tkinter software)

There are two modules identified: the patient and doctor modules. The patient module allows them to schedule appointments, make payments, view reports, and view their medical and payment history. The patient module also includes a disease prediction section where patients can receive disease predictions. The doctor module, on the other hand, has a User Interface (UI) that allows employees to access the database. In the Doctor module, there are four types of users: They are admins, doctors, lab technicians, and pharmacy personnel (Photosynergy, 2021).

3. Methodology

The design was both a descriptive survey and experimental design.
This research was a cross-sectional analysis of secondary and tertiary health workers in Imo State.**3.2.2 Sample Size:**
Below is the formula

$$n = \frac{N}{1+N\ (0.05)2} \quad \ldots\ldots\ldots\ldots\ldots equity\ 1$$

Where
n= Sample size
N= Target population
1= Constant value
0.05 = Alpha level of significance)
Determination of the sample size

$$n = \frac{2391}{1 + 2391 \times (0.05)2} \quad \ldots\ldots\ldots\ldots\ldots\ldots 2$$

$$n = \frac{2391}{1+6}$$

$$n = \frac{2391}{7}$$

$$= 341.57171$$

$$\approx 342$$

The sample size was 342(three hundred and forty-two) health workers.
The researchers numbered the health workers from 1– 7 at intervals and administered shoveled folded papers written yes (1) and no (6). and they were asked to pick, the method was used repeatedly in all the sample areas, till the respondents were selected as part of the sample which sum up to 342(three hundred and forty-two

4. Result

Data collected were analyzed to determine the level of compliance of contemporary health information system delivery in Imo state

Frequency distribution table showing data analysis

	Strongly Agree	Agree	Disagree	Strongly Disagree
Very Adequate	17 (66.9)	39 (15.8%)	68 (27.5%)	123 (49.8%)
Adequate	8 (4.0%)	30 (14.9%)	94 (46.8%)	69 (34.3%)
Partial	75 (35.7%)	83 (39.5%)	36 (17.1%)	16 (7.6%)
Inadequate	59 (28.9%)	70 (34.3%)	41 (20.1%)	34 (16.7%)

Table 4.7 shows multiple responses on the levels of compliance with Health Information System (HIS) current trends. Across the table, when it is considered very Adequate, more than 70% of respondents must strongly agree and agreed but 70% (49.8% + 27.5%) strongly disagreed and disagreed that the level of compliance of health information system is not very adequate in their service area. When the level of compliance is seen as Adequate, more than 60%responses must strongly agree and agreed but 60% (34.3% + 46.8%) strongly disagreed and disagreed respectively that the level of compliance of the health information system is adequate in their service area.
When the level of compliance is seen as Partial, more than 70% (35.7% + 39.5%) strongly agreed and agreed respectively that the level of compliance of health information systems is part of their service area.
When the level of compliance is considered Inadequate, more than 60% (28.9% + 34.3%) strongly agreed and agreed respectively that the level of compliance of health information systems is inadequate in their service area.

ANALYSIS OF VARIANCE (ANOVA)

Hypothesis

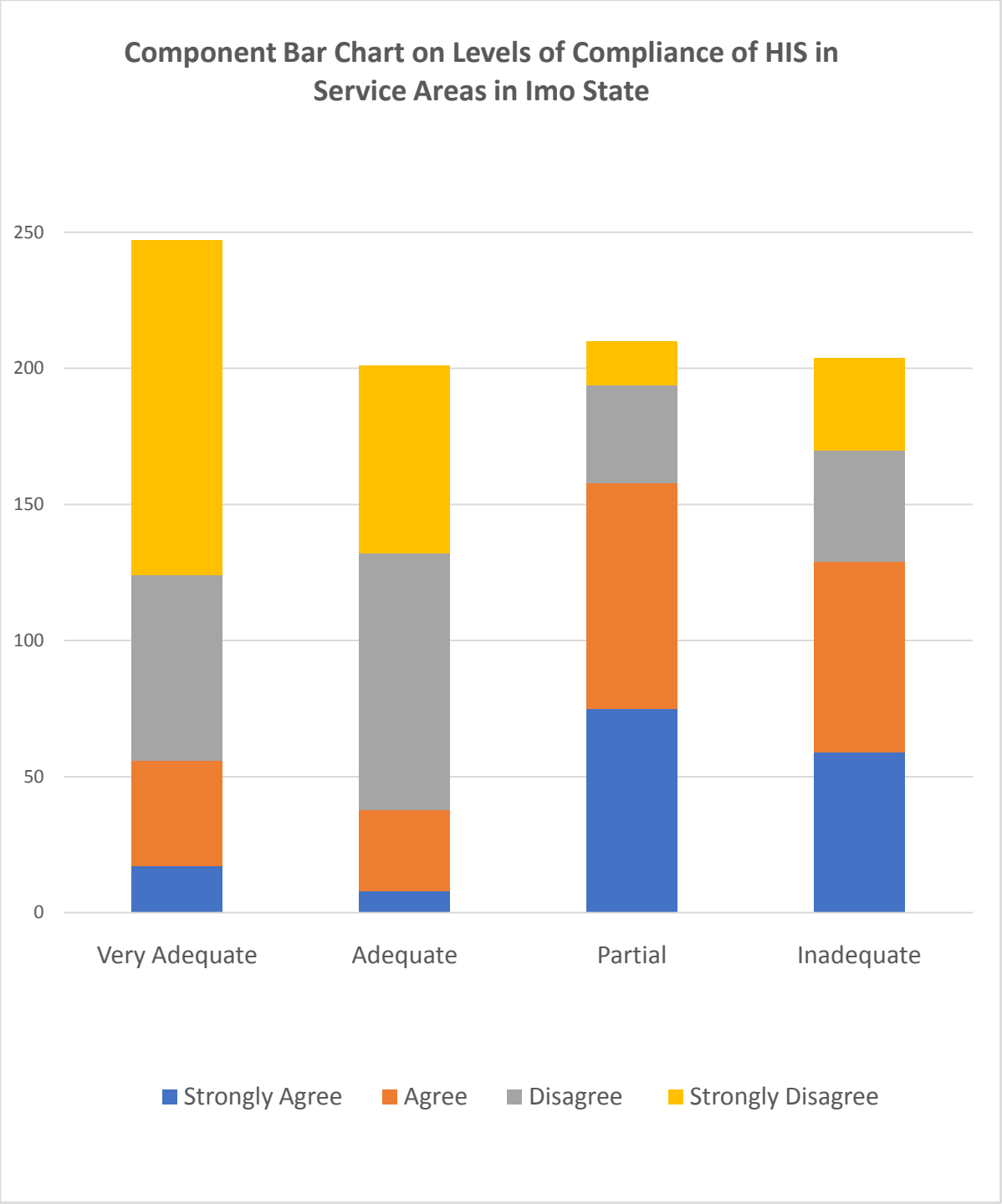
H_0: There is no significant difference in the level of compliance withthe Health Information System's current trends in service areas in Imo State.

H_1: There is a significant difference in the level of compliance withthe Health Information System's current trends in service areas in Imo State.

Decision Rule: We shall reject the null hypothesis if the p-value is less than the alpha, otherwise, we will not. Alpha = 0.05.

Conclusion

Since the p-value (0.000) is less than the alpha (0.05), we reject the null hypothesis and conclude that there is a significant difference in the level of compliance of Health Information System current trends in service areas in Imo State.



5. Conclusion

Compliance with the contemporaries in a health information system is yet to be adequately achieved in state-owned hospitals, this has endangered health services, and even reduce the image of healthcare. If adequately complied, it has many advantages, such asreduced waiting time, human labor, and accuracy, and encourages sharing of health information with other specialists in medical and health industries for continuity of care, better treatment research, and sharing of ideas that will improve the health of all.CMS, (2016) explained an electronic health record system as digital health-related information of an individual patient that can be consulted by clinicians and staff to provide healthcare.

6. Recommendation

Every healthcare institutionshould be;
Adequately funded by government, agencies, groups, and individuals.
Periodic training for workers in other to meet the standard of the hospitals
Availability and installation of modern technologies
Periodic monitoring and evaluations.

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