

Article

The Place of Health Data in Health Facility Management in Selected Local Government Areas of Enugu State, Nigeria

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Abstract: Health data constitute the one critical element of effective healthcare delivery and management. The availability of accurate, complete, timely, and reliable health information enables healthcare managers to make evidence-based decisions regarding planning, budgeting, resource allocation, disease surveillance, programme implementation, and service evaluation. Despite the establishment of the National Health Management Information System (NHMIS) in Nigeria, many health facilities continue to experience poor data quality due to incomplete documentation, delayed reporting, inadequate health information infrastructure, poor staff capacity, and weak utilization of health information for decision-making. This study examines the effects of inadequate health data on health facility management in selected Local Government Areas (LGAs) of Enugu State. It explores the concept of health data, the importance of health information systems, factors responsible for poor health data management, and the implications for healthcare delivery. This study argues that poor health data contribute to inefficient planning, poor budgeting, inadequate disease surveillance, ineffective monitoring and evaluation, and reduced quality of healthcare services. The study explored library and the use of thematic to explain the non availability of health data in selected local government. Based on the findings it recommends strengthening routine health information systems through capacity building, digitalization of health records, regular data quality assessments, supervision and increased government infrastructures.

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1. Introduction

A functional health system depends on the availability of reliable information to guide decision-making at every level. Health data provide the evidence required for planning, implementation, monitoring, evaluation, and continuous improvement of healthcare services. The World Health Organization identifies health information systems as one of the six essential building blocks of a strong health system because they generate information needed for effective governance, resource management, and improved health outcomes [1].

Health data include information relating to patients, diseases, healthcare personnel, health facilities, medicines, finances, births, deaths, immunization coverage, maternal health, child health, and other indicators used to monitor the performance of healthcare services. These data are collected routinely through patient registers, laboratory records, outpatient registers, admission registers, disease surveillance reports, and electronic health

information systems. When properly collected, analyzed, interpreted, and utilized, health data become an indispensable tool for evidence-based decision-making [2].

Quality health information is a key input for healthcare managers' decisions on staff deployment, drug procurement, budget, programme implementation, disease prevention and emergency preparedness. Reliable health information also helps governments identify priority health problems, allocate resources fairly, assess health interventions and track progress towards national and international health goals like Sustainable Development Goals (SDGs) [3].

The global burden of disease estimates indicates that countries have come to a shared understanding that high-quality health information is essential for effective health systems. The use of digital health technologies has led to substantial progress in the collection, storage, analysis and dissemination of health data in many developed countries. Improved accuracy, timeliness and access to data through Electronic Health Records (EHRs), District Health Information Software (DHIS2), electronic disease surveillance systems and digital reporting platforms have contributed to improving healthcare planning and management [3].

However, in many low- and middle-income countries, health information systems remain plagued with many issues. They are under-funding, lack training of information health workers, weak internet connectivity, lack of computer equipment, unreliable electricity supply, lack of supervision, and reliance on paper-based records. These restrictions include imperfect documentation, misreporting of health information, delayed reporting of health information and suboptimal use of health information in decision making [4].

Nigeria has been making good progress to improve its health information system with the implementation of the National Health Management Information System (NHMIS) and the use of the District Health Information Software version 2 (DHIS2). To enhance routine health data at every level of health care, these initiatives were introduced to make these data more useful, timely, complete and accurate. Despite these changes, some studies have indicated that data management continues to be challenging, especially in primary healthcare (PHC) facilities, where manual documentation is still commonplace, and data quality is low [5].

In the face of these issues, health data management is a key priority for governments and health institutions across the globe [6]. Health information systems can help to make better health decisions, hold governments accountable deliver better service and play a key role to achieve universal health coverage [7]. This study therefore examines the effects of inadequate health data on health facility management in selected Local Government Areas of Enugu State and proposes strategies for improving routine health information systems to enhance healthcare delivery.

Statement of the Problem

Effective health facility management depends heavily on accurate, timely, complete, and accessible health data. Health data provide managers with information needed for planning, budgeting, allocation of resources, monitoring of staff and services, disease surveillance, and evaluation of healthcare outcomes [8]. However, many health facilities, particularly in developing countries, continue to experience challenges such as incomplete records, inaccurate data entry, delayed reporting, inadequate data-management systems, poor staff capacity, and limited use of data for decision-making. These challenges can lead to poor planning, inefficient allocation of resources, weak monitoring of healthcare services, and reduced quality of patient care [9]. Therefore, there is a need to examine the place of health data in effective health facility management.

Objectives of the Study

The general objective of the study is to examine the role of health data in the effective management of health facilities. The specific objectives are:

1. To examine the importance of health data in health facility planning and decision-making.
2. To assess the extent to which health data influence resource allocation and utilization in health facilities.
3. To assess the relationship between effective health-data management and the performance of health facilities.

Research Questions

1. What is the importance of health data in health facility planning and decision-making?
2. To what extent do health data influence resource allocation and utilization in health facilities?
3. What role do health data play in monitoring and evaluating healthcare service delivery?
4. What challenges affect the collection, management, and utilization of health data in health facilities?
5. What relationship exists between effective health-data management and the performance of health facilities?

2. Materials and Methods

Concept of Health Data

Health data refer to facts, figures, and statistics relating to the health status of individuals and populations, as well as information on healthcare services, health facilities, healthcare personnel, disease patterns, mortality, morbidity, financing, and health outcomes. These data form the basis for planning, implementing, monitoring, and evaluating healthcare programs and policies. According to the World Health Organization, health data are indispensable for generating evidence that supports effective health system governance, quality improvement, and resource allocation.

Health data become meaningful when they are processed, analyzed, interpreted, and transformed into information that can guide decision-making. AbouZahr and Boerma noted that high-quality health information enables governments and healthcare organizations to identify health priorities, monitor disease trends, evaluate programme performance, and improve healthcare delivery. Consequently, the quality of decisions made by health managers largely depends on the quality of available health data.

The Federal Ministry of Health introduced the National Health Management Information System (NHMIS) to standardize the collection, reporting, analysis, and dissemination of routine health information across Nigeria. Through the NHMIS, health facilities are expected to collect information on outpatient attendance, maternal and child health services, immunization, communicable diseases, laboratory services, family planning, and other key health indicators. These data are subsequently entered into the District Health Information Software version 2 (DHIS2) for analysis and reporting.

For health data to be useful, they should possess several important characteristics. They should be accurate, complete, timely, consistent, relevant, reliable, and easily accessible. Lippeveld, Sauerborn, and Bodart state that substandard data can result in bad decisions, wasteful use of limited resources, as well as poor health results. As a result, healthcare organizations need to have processes in place to make sure their data quality is

continuously improved. managers track outlays, employee performance, maintenance of equipment, and the amount of medicine on hand.

Concept of Health Facility Management

Health facility management is the planning, organizing, coordinating, directing and controlling of health care resources to accomplish the health care organization's goals effectively and efficiently. It is the management of manpower, finances, equipment, medicines, infrastructure, health programmes and information systems to ensure quality health care delivery. The importance of evidence-based decision making in the management of health facilities, using health information, has been stated by Shortell and Kaluzny. Managers continuously rely on health data to determine staffing needs, monitor patient attendance, forecast medicine requirements, prepare budgets, and evaluate service quality.

Healthcare managers perform several critical functions, including strategic planning, financial management, human resource management, logistics management, quality assurance, monitoring and evaluation, and emergency preparedness. Each of these functions depends heavily on the availability of reliable health information. Evidence-based management has become increasingly important because healthcare resources are limited while demand for quality healthcare services continues to increase. Managers who utilize reliable health information are better positioned to allocate resources efficiently and improve patient outcomes.

There are few empirical researches that have looked at health information systems and health data quality in Nigeria and developing countries. AbouZahr and Boerma noted that many LMICs have weak health information systems that are characterized by incomplete reporting, poor quality data, and limited use of health information for policy making. The authors found that health information system strengthening is a key to enhance health outcomes.

Aqil, et al., created the framework of Performance of Routine Information System Management (PRISM) and showed that organizational, behavioural and technical factors play a significant role in the performance of health information systems in their daily routine. They suggested ongoing monitoring, training of staff, and ongoing evaluation of data quality. Ekwueme et al conducted a study on the status of routine health information management in primary healthcare facilities in Ekwueme State and reported poor documentation, reporting and utilization of standard forms for data collection. The researchers suggested frequent training of health workers, supportive supervision and better monitoring systems. Likewise, Oleribe et al. found that weak health information systems continue to be one of the major challenges to fulfilling UHC in Nigeria since decision makers have access to incomplete and inconsistent health information.

These studies collectively indicate that inadequate health data continue to undermine healthcare planning, resource allocation, programme implementation, and overall health facility management in Nigeria. Strengthening routine health information systems therefore remains a critical priority for improving healthcare service delivery.

The World Health Organization (WHO) Health Information Systems (HIS) Framework is used as the basis for this study. The framework highlights that data collection, processing, analysis, dissemination and use is essential for success in health systems to leverage reliable information. The framework proposes that high-quality health information facilitates evidence-based policy development, strategic planning, programme implementation, monitoring and evaluation. On the other hand, poor quality data lead to poor decision making, inefficient resource allocation, lack of accountability, and poor health outcomes.

The Framework outlines technical components of an effective HIS such as data collection, data management, information analysis, dissemination and use of information

for decision-making. A failure in any of these components will decrease the effectiveness of healthcare management. The relevance of the framework to the study is that it relates to the direct impact of poor health data on the management of health facilities in the selected Local Government Areas of Enugu State. Poor documentation, late reporting, incomplete records and poor use of information on health weakens management decisions related to budgeting, procurement, staffing, disease surveillance and programme evaluation.

Situation and Availability of Health data

Health data come from multiple sources in health care. One is the routine health facility records. These include out-patient registers, in-patient registers, antenatal care registers, immunization records, delivery registers, laboratory registers, pharmacy records, mortality records and disease surveillance forms. These are regular records that can be used for planning health and healthcare services as well as trends of diseases.

Other major sources are population surveys like the Multiple Indicator Cluster Survey (MICS) and the Nigeria Demographic and Health Survey (NDHS). The surveys yield nationally representative data on maternal health, child health, nutrition, fertility, immunization rates and other key health indicators. The information obtained from these surveys sometimes supplements regular health facility data. Disease surveillance systems also provide valuable health information. Priority diseases like cholera, tuberculosis, measles, malaria, meningitis, HIV/AIDS, yellow fever and other epidemic-prone diseases are under surveillance. Surveillance relies on effective reporting from the health care facilities and timely transmission of information to public health officials. Vital registration systems also offer valuable health data on births, deaths, marriages and mortality causes. However, there are still civil registration system shortcomings in many developing countries, including Nigeria, that are hampering the availability of reliable mortality statistics. Other administrative documents such as staffing, budgets, procurement, logistics and infrastructure documents are also important for managing health facilities.

Important and Effects of Lack of Proper Health Data on Health Facility Management

Health data are indispensable for the effective management of health facilities because they provide the evidence required for planning, decision-making, monitoring, evaluation, and policy implementation. The absence of accurate, complete, timely, and reliable health data negatively affects almost every aspect of healthcare administration. In selected Local Government Areas (LGAs) of Enugu State, poor health data management has continued to undermine the efficiency of primary healthcare facilities, resulting in poor planning, ineffective service delivery, and inefficient utilization of scarce healthcare resources. According to the World Health Organization, quality health information is fundamental to strengthening health systems and improving population health outcomes.

3. Results

Poor Planning and Decision-Making

One of the most significant effects of inadequate health data is poor planning and decision-making. Effective healthcare planning depends on accurate information regarding disease prevalence, patient attendance, staffing requirements, medicine consumption, maternal and child health indicators, and immunization coverage. These data are used by health facility managers to plan for the annual operations, to determine resource needs and prioritize interventions. Incomplete and/or inaccurate health records place managers in the position of having to make assumptions instead of basing decisions on evidence. This frequently leads to faulty resource allocation, programme implementation and infrastructure development decisions. AbouZahr and Boerma pointed out that weak health information systems hinder the ability of governments to make effective health policies, as planning relies on evidence.

Patient registers are seldom complete in most primary healthcare centres in Enugu State, monthly reports are not submitted and documents are not always well kept, thus limiting the availability of credible information for planning purposes. This means that healthcare managers could therefore overestimate or underestimate the real healthcare needs of the community they cater to [10].

Inefficient Resource Allocation

Health data is a crucial component in providing equitable distribution of finite health resources. The accurate information allows managers to allocate medicines, equipment, financial resources and healthcare personnel to facilities with increased requirements for services. Where reliable data is not available, however, resources might be allocated unevenly. In some facilities supplies are in excess and in others they are in short supply. These imbalances lead to the waste of limited public funds and to inadequacies in health service delivery. An ineffective resource allocation is one of the biggest consequences of weak routine health information systems in developing countries [11].

Lack of Effective Budget Preparation and Financial Management

Health statistics play a crucial role in budget preparation in healthcare institutions. Estimating financial requirements is based on information on patient attendance, disease burden, medicine use, laboratory services, programme implementation and so on. In the absence of adequate and reliable health information, budgets do not adequately reflect the needs of health facilities. This can lead to inadequate coverage of services, or to wasteful spending on activities that are not aligned with community health needs. The Federal Ministry of Health states that the health sector in Nigeria needs routine health information for evidence-based budgeting and efficient financial management. Lack of financial planning also leads to lack of accountability as managers are unable to evidence the use of public money to enhance healthcare services.

Poor drug Stock-Outs and Logistics Management

Consumption data is essential for managers of health facilities to make forecasts of medicine needs and plan procurement activities. Accurate pharmaceutical records allow managers to make informed predictions about future needs for crucial medicines, vaccines, laboratory reagents and medical consumables. If health information is flawed, forecasting is not reliable. This can lead to stock out of essential medicines or overstocking drugs that expire before being used, affecting health facilities. This can result in frequent stock-out of essential medicines at health facilities or in the overstocking of drugs that expire before use. These are situations that affect patient care and escalate the cost of health care. The Nigerian studies indicate that poor logistics information system plays a significant role in the scarcity of medicines in the primary healthcare institutions especially in the rural areas [12].

Weak Disease Surveillance and Outbreak Response

Early reporting and real-time collection of disease information from healthcare facilities are essential for the success of disease surveillance systems. To identify diseases that can cause outbreaks early, continuous monitoring of like cholera, measles, meningitis, malaria, tuberculosis, yellow fever, and Lassa fever is necessary. Bad health information slows down the notification of diseases and hinders public health officials from reacting quickly when disease outbreaks occur. Late reporting increases the chances of wide spread disease and preventable deaths. The World Health Organization explained that one of the most important roles of an effective health information system is timely disease surveillance. The inadequate documentation and reporting in some primary health care facilities in Enugu State has sometimes led to delays in reporting of disease cases, which has had a negative impact on outbreak responses.

Lower Quality of Patient Care

Patient records need to be accurate for continuity and quality of health services. Patients' medical history, laboratory tests, medication lists, allergies, and past diagnoses are all important data healthcare providers rely on to make their decisions about patient care. Lack of or missing information or data can lead to medical mistakes, unnecessary lab studies, incorrect drug prescriptions, and inadequate follow-up treatment. Misdiagnosis is possible due to lack of historical information about the patient. Shortell and Kaluzny state that high-quality clinical information can contribute to patient safety, continuity of care and better treatment outcomes.

Failure to Conduct Appropriate Human Resource Planning

Health facilities' HRM is also reliant on health information. Managers need accurate information regarding patients' attendance, workload distribution, disease burden and service utilization, before deciding on staffing needs. When health information is inadequate, health workers can be used in an inefficient way. While some facilities may be understaffed as patient numbers grow, others could have more staff than needed. These imbalances can result in decreased staff efficiency, employee burnout, and impacts on patient satisfaction. Without reliable health information, it is therefore not possible to build a reliable workforce plan.

Weak Monitoring and Evaluation

Through monitoring and evaluation, healthcare organizations can identify if programmes are successful in meeting their goals. Routine health information is used to produce performance indicators which programme managers use to evaluate service quality, determine implementation difficulties and make recommendations for improvements. Valid programme evaluations are based on quality data, with reported achievements not being a reflection of service delivery. As a result, governments and donor agencies can make wrong decisions about the continuation, modification or funding of a programme. Aqil et al made the case that one of the most significant factors for good monitoring and evaluation in routine health information systems is data quality.

Poor Policy Formulation

Health policies are developed by governments, based on the evidence of disease burden, demographic change, utilization of services, maternal mortality, child mortality, and other health indicators. If health data are incomplete or of poor quality, policies can miss the actual health needs of the population. Resources can then be targeted at less important health problems and more urgent public health issues not adequately dealt with. Health information systems are essential for reliable production of health information, which is necessary for evidence-based policymaking, and should be continuously available.

Reduced Donor Confidence

There is a growing need for reliable health information before health programmes can be implemented in practice by development partners, such as by international organizations and non-governmental organizations, for financial or technical support. Poor-quality health data reduce confidence in programme performance because donors cannot verify reported achievements or assess the impact of funded interventions. Consequently, opportunities for external funding may be reduced, limiting the implementation of essential health programmes.

Increased Healthcare Costs

Poor health data contribute to increased healthcare costs through duplication of services, wastage of medicines, inefficient procurement, repeated laboratory investigations, and poor planning. Resources that could have been used to improve healthcare services are instead consumed by correcting errors arising from poor documentation and inaccurate reporting. Healthcare organizations that maintain high-

quality health information systems generally achieve greater operational efficiency and better financial performance than those relying on weak information systems [13].

Challenges Responsible for Poor Health Data in Selected LGAs of Enugu State

Several factors contribute to poor health data management in selected Local Government Areas of Enugu State. These include inadequate training of health workers on data collection and reporting procedures, shortage of qualified health information officers, dependence on paper-based record systems, inadequate computer equipment, poor internet connectivity, unstable electricity supply, weak supportive supervision, insufficient funding, and low utilization of routine health information for local decision-making. In addition, heavy workloads among healthcare workers often result in incomplete documentation, while inadequate feedback from higher levels of the health system discourages staff from maintaining high standards of data quality. Addressing these challenges requires sustained investment in health information systems, continuous staff capacity building, and stronger institutional commitment to evidence-based healthcare management.

Remedies for Improving Health Data Management

The strategies for improvement of health data management in selected local government areas of Enugu state involves the following; the strategies for improvement of health data management in selected local government areas of Enugu state includes; Health data management improvement is crucial to bolster healthcare delivery and health facility management. Access to reliable health information helps health managers to base their decision on evidence for the planning, budgeting, disease surveillance, human resource management, procurement of medicines and monitoring of health programmes. Several practical strategies should be adopted in order to tackle the problems encountered in the poor health data management in selected local government areas (LGAs) of Enugu State.

Improving the Health Management Information System (HMIS)

The ability to deliver quality information from routine health activities is essential and is essential to having a well-functioning Health Management Information System (HMIS). World Health Organization puts forward an important point that an effective HMIS should guarantee that health data is collected, processed, analyzed, disseminated and used for decision making at all levels of the health system. Enugu State Ministry of Health needs to intensify the application of the National Health Management Information System (NHMIS) by standardizing all the public health facilities to consistently use standardized data collection tools. Data will be improved, more comparable and consistent through uniform reporting formats, across health facilities [14].

Capacity Building and Training of Health Workers

Insufficient data management knowledge is one of the leading reasons data isn't of good quality in healthcare. Frontline health workers are trained only in aspects of data collection, analysis, reporting and use. In-service training, workshops, mentoring programmes and supportive supervision, therefore, should be implemented regularly to enhance the skills of health workers involved in health information management. Aqil et al found that ongoing staff capacity building definitely enhances data quality and facilitates the proper utilization of routine health information.

The training programme should include: Timely update of HMIS registers and reporting forms; Data validation and quality assurance techniques; Analysis and interpretation of data; Entry of information electronically via DHIS2; Ethical handling and confidentiality of patient information; Evidence-based decision making using health information.

Digitalization of Health Records

One of the best ways to enhance health data quality is to switch from paper-based records to Electronic Health Records (EHRs). Electronic systems help to eliminate transcription errors, reduce duplication of records, enhance data security and enable quick retrieval of patient information.

To enhance routine health information management, the Federal Ministry of Health has been promoting the use of digital health technologies such as the District Health Information Software version 2 (DHIS2).

Enugu State Government should invest in: Tablets and computers for health centres, Reliable internet connectivity, Create back-up data storage systems, EMR Software, Sustained medical assistance to health practitioners.

Digital health systems will enhance timely, complete and accurate health reporting.

Data Quality Assessment – Routine

The routine Data Quality Assessment (RDQA) is a strategy that has now been widely recognized as a means to enhance routine health information systems. Assessment is regular to identify: Missing records, Incomplete documentation, Duplicate entries, Mathematical errors, Discrepancy between registers and monthly report.

WHO suggests regular checks on health information to ensure its accuracy and reliability. Enugu state health officials should create a system of quarterly data quality checks in all primary healthcare centres.

Strengthening Supportive Supervision

High-quality data is achieved through supportive supervision. Supervisors to visit health facilities often to check registers, confirm reports, correct documentations, coach on-site, and give feedback. Regular supervision has been found to increase staff motivation and compliance with HMIS guidelines [15]. It should focus on learning and ongoing enhancement and not fault finding.

Improving ICT Infrastructure

Lack of a good internet connection, unreliable power supply and insufficient computer hardware continue to pose problems for health facility health information management in many health facilities in Nigeria. Government should focus on investing in: Solar-powered electricity systems, Internet connectivity, Computer laboratories, Data server, Health information software.

Enhanced infrastructure will improve the time for electronic reporting and minimise delays for manual data transfer.

Adopting Data Use for Decision Making

Data, if not used in decision making to manage the system, reduces the value of health information systems. Managers of health facilities need to systematically review routine health information in their management meetings to detect gaps in service delivery and track service performance.

The effectiveness of health information systems, according to AbouZahr and Boerma, is realized when collected information is converted into action by evidence-based decision making. Health data should be used regularly at health facilities for: Annual planning, Budget preparation, Drug forecasting, Disease surveillance, Staff deployment, To be able to track KPIs, Community Participation.

There is also value in community members helping to enhance health data quality. CHC, WDC and traditional leaders can promote early reporting of births, deaths, communicable diseases, and other health related events. Routine health information is more complete when communities participate and it enhances grassroots disease surveillance.

4. Discussion

Based on the evidence reviewed in this study it is evident that poor health data continues to pose a serious problem in the management of health facilities in the selected LGA in Enugu State. This has been recorded in other parts of Nigeria, where insufficient documentation, delayed reporting, inadequate training and capacity building of personnel, and inadequate utilization of routine health information continue to have a negative effect on health service delivery. The results corroborate what AbouZahr and Boerma have expressed: "Poor health information systems hinder governments and health care providers from making decisions based on evidence. At present, healthcare managers lack accurate data on diseases to inform disease trend identification, medicine needs planning, programme performance measurement or resource allocation.

The study is also consistent with Aqil et al. who found that the performance of routine health information systems is explained by the interaction of behavioral, organizational and technical factors. Poor staff capacity, inadequate supervision, limited ICT infrastructure, lack of funding and limited capacity continue to negatively affect the quality of health information in many health facilities in Enugu State. The other significant implication of the poor health data is that it directly affects budgeting processes, disease surveillance, medicine shortages, and patient care. This is in line with WHO that highlights that trustworthy health information is essential to create Universal Health Coverage and bolster national health systems.

The literature overall suggests that the quality of health data can be improved through a coordinated approach by the government, healthcare workers, development partners, educational institutions and the local community. The investments in digital health technologies, continuous training of staff, supportive supervision, and regular data quality checks will likely enhance the management of health facilities and the provision of healthcare services in Enugu State.

5. Conclusion

This study investigated the impact of inadequate health data on health facility management in some selected Local Government Areas (LGAs) of Enugu State. The review has identified that health information is essential for the effective operation of health systems as it serves as proof for planning, implementing, monitoring, evaluation and policy making. Managers of the health system rely on accurate information to guide their decision-making on issues such as budget planning, staffing, and procurement of medicines, disease surveillance, programme implementation and quality improvement.

The study also found that many health facilities, especially at the primary healthcare level, still have weak health data management, with a lack of tools and resources in place for documentation, reporting, infrastructure, trained health information workers, supervision, and the use of digital health technologies. These barriers affect the quality of routine health information produced by health facilities and the usefulness of this information for decision making.

Previous research shows that the poor quality of health data can have adverse consequences on healthcare planning due to challenges in identifying priority health needs and efficiently allocating resources. The difficulties in accessing accurate and complete information can result in managers of health facilities making unrealistic budgets, running the health clinic with the wrong stock, and setting up programmes which do not respond to the real health needs of the communities served.

The study also found that the performance of the health information systems is weak, which diminishes disease surveillance and outbreak response. The failure to report and timely notification of disease is a failure to respond to outbreaks in a timely manner and hinders the efforts of public health agencies. In this context, there is an increased risk of

disease transmission, preventable illness and avoidable deaths, particularly in rural areas where primary healthcare (PHC) is the first point of contact in the health system.

In addition, poor health information deteriorates monitoring and evaluation efforts. Programme managers need to have accurate performance indicators to measure progress, understand what has not been done well and to make appropriate recommendations for corrective action. Bad data undermine the quality of programme evaluations and constrain evidence-based policy-making.

The results also show how poor health information can lead to poor financial management, inefficient use of limited healthcare resources, lack of accountability and lack of trust among development partners. Lack of accurate information by governments, on donor organizations which end up struggling to gauge program effectiveness and to measure the impact of their health investments.

The overall conclusion of the study is that the health information systems need to be strengthened so that management of health facilities is improved in selected LGA of Enugu state. Investment in digital health technologies, regular staff training, supervision and support to staff, regular periodical data quality checks and the use of evidence to inform decision-making will greatly enhance the delivery of healthcare services and help bring about Universal Health Coverage. The following recommendations are suggested based on the results of this study:

Strengthen the Health Management Information System (HMIS): All public health facilities should be using standardized HMIS tools regularly, and the Enugu State Ministry of Health should ensure that this happens.

Capacity Building for Health Workers: Regular training and retraining programmes for healthcare workers, health information officers, and facility managers on data collection, analysis, reporting and utilization. Continuous professional development will lead to better data quality and support evidence-based management.

Paper-based Record Systems to be replaced with Electronic Health Records (EHRs): Government to progressively move towards digitalization of paper-based record systems and improve the utilization of the District Health Information Software (DHIS2) version 2. Digital systems enhance the accuracy, availability, security and timeliness of data.

Institutionalization of routine health information verification exercise, supportive supervision and periodic audits should be routine.

Enhance ICT Infrastructure: Ensure health facilities have adequate computers, internet access, stable power supply and relevant software to ensure efficient data management.

Grow Investment in Health Information Systems: Investment in health information systems, in terms of financial resources, should be increased at the federal, state and local levels, with and also encourage the use of data for decision-making: It is important that health facility staff routinely access health data for decision making in management meetings, planning, budgeting, logistics planning and programme evaluation.

Improve Disease Surveillance: Regular surveillance, supportive supervision and continued training of surveillance officers should be encouraged to report priority diseases timely. **Improve Partnership with Development Partners:** Government should leverage on the technical assistance, funding and knowledge sharing from development partners, international agencies and professional organizations to enhance health information systems, hence encourage Health Research: Universities, research institutions, and health facilities should conduct regular operational research on health information systems to identify emerging challenges and provide evidence for continuous improvement

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