

## Examining the implementation of intranet in the management of public hospitals in Abia State

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### Abstract

The study was focused on examining the implementation of intranet in the management of public hospitals in Abia State. A descriptive survey research design was used for the study. A census sampling technique was used to sample all the 17 public hospitals in Abia State since the population size was few enough to be handled. The instruments used for the study were checklist titled Availability of Intranet Services in Public Hospitals (AISPH) and Questionnaire titled Implementation of Intranet Services in Public Hospitals (IISPH). The two instruments yielded 0.78 and 0.81 coefficients respectively after a reliability test using Cronbach Alpha test statistic. Percentage was used to answer research question one, while mean was used to answer research question two. The results of the study showed that most of the intranet services under study were available and were implemented. It was recommended that there is still room for improvement so that the few intranet services not available could be made available, and all intranet services should be implemented on a very high extent so that staff and patients' relationship could be cordial and stress free.

## Examen de la mise en œuvre de l'intranet dans la gestion des hôpitaux publics de l'État d'Abia

### Résumé

L'étude portait sur l'examen de la mise en œuvre de l'intranet dans la gestion des hôpitaux publics de l'État d'Abia. Un plan de recherche descriptive par enquête a été utilisé pour cette étude. Une technique d'échantillonnage par recensement a été employée pour inclure les 17 hôpitaux publics de l'État d'Abia, la taille de la population étant suffisamment réduite pour être gérée. Les instruments utilisés pour l'étude comprenaient une liste de vérification intitulée Disponibilité des services intranet dans les hôpitaux publics (AISPH) et un questionnaire intitulé Mise en œuvre des services intranet dans les hôpitaux publics (IISPH). Les deux instruments ont respectivement donné des coefficients de 0,78 et 0,81 après un test de fiabilité utilisant la statistique du test Alpha de Cronbach. Le pourcentage a été utilisé pour répondre à la première question de recherche, tandis que la moyenne a été utilisée pour la deuxième. Les résultats de l'étude ont montré que la plupart des services intranet étudiés étaient disponibles et mis en œuvre. Il a été recommandé qu'il reste une marge d'amélioration afin que les quelques services intranet non disponibles puissent être rendus accessibles, et que tous les services intranet soient mis en œuvre à un niveau très élevé pour que la relation entre le personnel et les patients soit cordiale et sans stress.

٨. دراسة تنفيذ الشبكة الداخلية (الإنترنت) في إدارة المستشفيات العامة في ولاية أبيّا.

ركزت هذه الدراسة على فحص تنفيذ الشبكة الداخلية (الإنترنت) في إدارة المستشفيات العامة في ولاية أبيّا. وقد تم استخدام تصميم البحث الوصفي بأسلوب المسح لجمع البيانات. كما تم استخدام تقنية التعداد الشامل لأخذ عينة من جميع المستشفيات العامة البالغ عددها 17 مستشفى في ولاية أبيّا، نظرًا لصغر حجم المجتمع وسهولة التعامل معه.

استخدمت الدراسة أداتين هما: قائمة مراجعة بعنوان توفر خدمات الإنترنت في المستشفيات العامة (AISPH) ، واستبيان بعنوان تنفيذ خدمات الإنترنت في المستشفيات العامة (IISPH). وقد أسفرت أدوات الدراسة عن معاملات ثبات بلغت 0.78 و 0.81 على التوالي، بعد اختبار الثبات باستخدام اختبار كرونباخ ألفا. تم استخدام النسبة المئوية للإجابة على سؤال البحث الأول، بينما تم استخدام المتوسط الحسابي للإجابة على سؤال البحث الثاني.

أظهرت نتائج الدراسة أن معظم خدمات الإنترنت التي شملتها الدراسة كانت متوفرة وتم تنفيذها. وأوصت الدراسة بوجود مجال للتحسين، بحيث يمكن توفير خدمات الإنترنت القليلة غير المتوفرة حالياً، كما ينبغي تنفيذ جميع خدمات الإنترنت بدرجة عالية لضمان علاقة جيدة وخالية من التوتر بين الموظفين والمرضى.

### Introduction

The efficient management of hospitals plays a crucial role in ensuring the delivery of quality healthcare services. Hospital management encompasses a wide range of activities, including but not limited to resource allocation, staff coordination, patient care coordination and administrative tasks. The successful execution of these tasks heavily relies on effective communication channels, timely information flow and well-informed decision-making processes. Brownley (2020) defined hospital management as the process where health care providers effectively and efficiently administer everything from patient registration to appointment scheduling, document management, consultation management, laboratory management, drug safety and so on. Furthermore, hospital management system is a computer driven system which helps to manage information related to healthcare (Shita, 2022). Traditional communication methods often face challenges such as delays, misinterpretation, and limited accessibility hindering overall management effectiveness.

In recent years, the implementation of intranet technology has emerged as a promising tool for enhancing communication, collaboration and information management within organizations. Anneli Du (2000) defined intranet as an internal organizational network that provides access to data across an enterprise. An intranet is a network found within an enterprise that is used to securely share company information and computing resources among employees (Lutkevich, 2024). From the foregoing, intranet can be

seen as a private network that is designed to be used exclusively within an organization. It is built using internet technologies such as, transmission control protocol/internet protocol (TCP/IP), web-browser and internet-based tools, but it is only accessible to authorized users within an organization. The main purpose of the intranet is to facilitate communication, collaboration and information sharing among employees or members of an organization. It serves as a centralized hub where employees can access company resources, documents, databases and other relevant information. According to Cohen (1998), the intranet has the potential of enabling organization to improve communication and collaboration among employees, hence increasing efficiency, productivity and giving significant savings in time and fund. Anneli Du (2000) believed, Organizations can use internet networking Standards and web-technology to create private network within the organization called intranet. While an intranet is mostly used within an organization, it may also have limited external connectivity for specific purposes like remote working or remote partner collaboration. Laudon (2000) stated that some firms are allowing people and organization outside the firm to have limited access to their internal network.

The primary purpose of an intranet is to serve the internal needs of the organization ensuring secure and controlled access to information and resources. An intranet often includes features such as email, file sharing, messaging, forums, calendar and project management. It can also host internal websites or web portals

for specific departments, teams or projects providing a consolidated platform of accessing information and application within a hospital system. All this helps to improve productivity and streamline internal communication within a hospital system for efficient service delivery. Effective communication lies at the heart of any successful organization and hospitals are no exception. The Implementation of an intranet system provides Hospitals with an integrated platform to connect their staff, departments and stakeholders. This Facilitates seamless communication allowing healthcare professionals to exchange information, share updates and collaborate on patient care more efficiently.

Furthermore, the intranet system simplifies the process of disseminating crucial information throughout the hospital, by digitizing important documents, policies and procedures. This ensures standardized practices and reduces errors and improves overall patient safety. Intranet also provides a platform for training materials and resources allowing healthcare professionals to enhance their skills and knowledge, ultimately leading to better patient care outcome.

Another significant aspect of intranet implementation in hospital management is its impact on decision making processes with availability of up-to-date information on an intranet platform, hospital administrators and management personnel can make informed decisions based on accurate data. The Centralized repository of information eliminates the need to search through the physical records or rely on outdated information, enabling quicker and more effective decision-making. These lead to improved resource allocation, better workflow management and ultimately enhance patient satisfaction.

In addition to communication and decision-making, the implementation of an intranet system can greatly improve the overall

operational efficiency of hospitals. By automating certain administrative tasks and providing a centralized platform for data management, hospitals can reduce paperwork, streamline processes, and eliminate bottlenecks. This allows healthcare professionals to focus more on patient care, resulting in enhanced efficiency and productivity.

However, it is important to acknowledge that the successful implementation of an intranet system in hospital management is not without challenges. These challenges may include resistance to change, technical difficulties, and the need for comprehensive staff training. Therefore, it is crucial for hospital administrators to carefully plan and execute the implementation process, addressing potential barriers and ensuring the successful adoption of the intranet system.

In Nigeria, the National Hospital Management Portal has a central database at its national hospital which could be updated/accessed within the hospital. With this, doctors can have access to patients' medical records more easily, get immediate access to test results from laboratories, deliver prescriptions directly to pharmacy and so on (Adetiba *et al*, 2010). If Healthcare Management System is fully developed in Nigeria, it will open ways for new possibilities which includes process and activity analysis, price calculations, hospital costs, improved quality and efficiency of healthcare (Adetokumbo, 2018). This implies that Health Care Management System in Nigerian Hospitals is not fully developed.

In Abia State public hospitals, staff and patients are often seen carrying files and other documents from one part of the hospital to the other. Patients also wait on long queues to be attended to. All these can be controlled if intranet is implemented in the management of public hospitals in Abia State by ensuring real-time communication, centralized information, and streamlined processes. This

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research therefore aims at finding out the availability of intranet and its extent of implementation in the management of public hospitals in Abia State.

Specifically, the study sought to:

1. Find out the available intranet services in Abia State Public Hospitals
2. Examine the extent of implementation of intranet services in the management of Public Hospitals in Abia State.

### Research Method

The design adopted for the study was a descriptive survey research design. The population for the study was 17 public hospitals in Abia State. All the 17 public hospitals were used as the sample through census sampling technique since the entire population size is few enough to be handled. The 17 public hospitals in Abia State were General Hospital Aba, Arochukwu General Hospital, Ikwuano General Hospital, Okpuala Ngwa General Hospital, Isuikwuato General Hospital, Ohafia General Hospital, Cottage Hospital Nkporo, General Hospital Abiriba, Abia State University Teaching Hospital (ABSUTH), Osisioma Cottage Hospital, Okeikpe General Hospital, Cottage Hospital Owaza, Abia Specialist Hospital Umuahia, Amachara General Hospital, General Hospital Isuochi, Federal Medical Centre, Umuahia and University Health Services, Michael Okpara University of Agriculture, Umudike.

The instruments used to collect data for the study were check list titled Availability of Intranet Services in Public Hospitals (AISPH) and Questionnaire titled Implementation of Intranet Services in Public Hospitals (IISPH). The AISPH consists of eleven response items, while the IISPH has ten response items. The AISPH items have two response options of Yes or No whether the services are available.

### Results

**Table 1: Percentage Score on the Availability of Intranet Services in Abia State Public Hospitals**

S/N	Intranet Service	Yes (%)	No (%)	Decision
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The following questions were raised to guide the study.

1. What are the available intranet services in Abia State Public Hospitals?
2. What is the extent of implementation of intranet services in the management of Public Hospitals in Abia State.

The IISPH on the other hand, has modified four Likert scale options of Very High Extent (VHE) with four points, High Extent (HE) with three points, Low Extent (LE) with two points, and Very Low Extent (VLE) with one point. The instruments were validated by two experts in the Department of Computer Science, and one expert in Measurement and Evaluation, all in Michael Okpara University of Agriculture, Umudike, Abia State. The instruments, AISPH and IISPH were subjected to a reliability test using Cronbach Alpha test statistic which yielded 0.78 and 0.81 reliability indices respectively. The information and Communication Technology unit in each hospital responded to the instruments delivered and retrieved by the researchers. Percentage was used to answer research question one, which is on availability of intranet services in public hospitals in Abia State. An intranet service with a percentage score of 50 and above for Yes option, was considered available in the State, while an intranet service with a percentage score of 50 and above for No option was considered not available. Mean was used to answer research question two. An intranet service with mean score below 2.0 meant a low extent of implementation, while any service with mean score of 2.0 and above implied high extent of implementation in Abia State public hospitals.

1	E – Forum Service	47.1	52.9	Not Available
2	E – Laboratory Management	52.9	47.1	Available
3	E – File Management	58.8	41.2	Available
4	Central Cloud/Data Base Management System	64.7	35.3	Available
5	Paper Free	23.5	76.5	Not Available
6	ICT Help Desk	64.7	35.3	Available
7	E – Staff Management	58.8	41.2	Available
8	E – Billing	52.9	47.1	Available
9	E – Health Care Processing	41.2	58.8	Not Available
10	E – Record Keeping	52.9	47.1	Available
11	Centralized Organizational E – Mail	52.9	47.1	Available

The data in Table 1 show that E – Laboratory Management, E – File Management, Central Cloud/Data Base Management System, ICT Help Desk, E – Staff Management, E – Billing, E – Record Keeping, and Centralized Organizational E – Mail are available because their percentage score for Yes option is above 50, while that of No option is below 50. E – Forum Service, Paper Free, and E – Health Care Processing are not available because their percentage score for Yes option is below 50, while that of No option is above 50

**Table 2: Mean Score on Implementation of Intranet Services in Abia State Public Hospitals**

S/N	Implementation of Intranet Services	Mean	Decision
1	The intranet in the hospital has good User Interface (UI) and User Experience (UE)	2.5	High Extent
2	The intranet in the hospital is relevant to my work	2.8	High Extent
3	Staff in charge of the intranet are available to help users	2.8	High Extent
4	The help desk is efficient	2.7	High Extent
5	The intranet site of the hospital management allows staff to work better in group	2.6	High Extent
6	The intranet allows better coordination between the hospital administrators and health care providers within the hospital management	2.6	High Extent
7	The intranet in the hospital improves the overall efficiency of the services offered by the hospital	2.8	High Extent
8	The intranet contributes generally to the improvement of the organizational performance of the hospital	2.9	High Extent
9	In case of failure of the intranet, the interventions are fast	2.0	Low Extent
10	The quality of service associated with the intranet is good in general	2.8	High Extent

The data in Table 2 showed that nine out of ten intranet services under study have high extent of implementation in Abia State with mean score of between 2.1 and 2.9. They include; the intranet in the hospital has good User Interface (UI) and User Experience (UE), the intranet in the hospital is relevant to the

present work, staff in charge of the intranet are available to help users, the help desk is efficient, the intranet site of the hospital management allows staff to work better in group, the intranet allows better coordination between the hospital administrators and health care providers within the hospital

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management, the intranet in the hospital improves the overall efficiency of the services offered by the hospital, the intranet contributes generally to the improvement of the organizational performance of the hospital,

### Discussion

Research question one sought to find out the available intranet services in Abia State public hospitals. Eight out of eleven intranet services under study are available. This is in line with the findings of Adetiba *et al* (2010) who stated that the National Hospital Management Portal has a central database at its national hospital which could be updated/accessed within the hospital. This could be as a result of the improvement in Information and Communication Technology in the country. On the other hand, research question two sought to find out the extent of intranet .

### Conclusion

This study aimed at finding out the availability of intranet and its extent of implementation in the management of public hospitals in Abia State. It was found out that majority of the intranet services under investigation are available. It was also

and the quality of service associated with the intranet is good in general. However, the result also shows that in case of failure of the intranet, the interventions are not fast.

implementation in the management of public hospitals in Abia State. Nine out of ten intranet services under study have high extent of implementation, while only one has low extent of implementation. None of the services has very high extent or very low extent of implementation. This finding is in agreement with the findings of Adetokumbo (2018) who found out that Health Care Management System in Nigerian Hospitals is not fully developed. This could be due to technical difficulties and resistance to change on the part of the staff in the hospital

discovered that most of the services are implemented in Abia State on a high extent. Therefore, it is expected that hospital staff can have stress free operations in patients. On the other hand, patients do not have to pass through rigorous processes in order to access their files, pay bills, see the doctor and so

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