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Research Article

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Assessing the Strength of District Health Information Management System II (DHIMS2) as a Data Management Platform in Korley - Klotey Municipality

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Abstract

Background: *Timely, complete, and reliable health information is essential for effective planning and management of health services. Ghana's District Health Information Management System II (DHIMS2) was developed to improve health data access and use, but its real-world performance and usability remain underexplored.*

Methods: *A facility-based cross-sectional study was conducted among 181 DHIMS2 users in the Korle-Klottey Municipality. Data were collected through structured electronic questionnaires and analyzed using SPSS to assess the system's technical and functional performance, data quality, and influence on decision-making.*

Results: *DHIMS2 demonstrated a 27% high level of system resilience in data collection, entry, and reporting. Respondents reported ease of data access and interpretation at all levels. While 13.3% cited improved decision-making, 3.9% identified the need for enhanced error messaging, and 1.7% raised concerns about centralized training. Challenges included irregular system maintenance (22%), inadequate communication on updates (11%), and limited internet access (14.1%).*

Conclusion: *DHIMS2 shows strong potential as a health data management tool, supporting timely decision-making. However, improvements in user feedback systems, grassroots training, and system stability are necessary to optimize its impact on health information quality and service delivery.*

Keywords: District Health Information Management System (DHIMS2), Health Information Systems, Digital Public Health, Data Quality, Health Decision-Making, Routine Health Data, System Usability, Ghana Health Service

1. Introduction

1.1. The Role of ICT in Health Information Systems in Low-Resource Settings

In many low- and middle-income countries, the advancement of Information and Communication Technology (ICT) has significantly influenced the evolution of health information systems (HIS) [1-4]. Ghana, like many other countries in sub-Saharan Africa, has embraced ICT innovations in efforts to strengthen data-driven governance and improve healthcare delivery. However, early ICT investments were often fragmented and implemented in silos, lacking the organizational structure needed for scalability and long-term sustainability.

Over time, the health sector in Ghana began to integrate digital technologies to improve routine data reporting, disease surveillance, and decision-making. The increasing demand for high-quality, timely, and relevant data essential for caregivers, health managers, and policymakers has made the integration of ICT-based systems not just desirable but essential for effective health system strengthening. These systems are now under growing scrutiny to determine whether their expected benefits are being realized and whether their implementation is justified in terms of cost, utility, and long-term impact.

1.2. Improving Health Outcomes Through Data for Decision-Making

Health information systems serve a critical role in transforming raw data into actionable insights that guide public health interventions and policy decisions. In the context of Ghana's District Health Information Management System II (DHIMS2), the system aggregates key service data especially morbidity and mortality indicators into formats that support communication, planning, and the provision of care [5-7]. These functions are not limited to reporting alone but extend to follow-up actions, performance tracking, and feedback mechanisms that support continuous quality improvement.

Importantly, DHIMS2 enables Health Information Officers and managers to provide real-time responses based on the data collected, facilitating more prompt and evidence-based decision-making at all levels of the health system.

1.3. From DHIS1 to DHIS2: Advancing Public Health Data Infrastructure

The evolution from DHIS1 to DHIS2 marked a significant leap in the digital health landscape of Ghana as illustrated in Figure 1 below. While both versions allow data entry by service providers, DHIS2 introduced real-time access, customizable dashboards, GIS integration, data validation tools, and mobile compatibility making it substantially more flexible, scalable, and user-friendly than its predecessor [1,8-10].

A key distinction is DHIS2's ability to allow remote data entry and retrieval via laptops, tablets, or smartphones, with data stored directly on a central server. This centralization allows for immediate access to aggregated data across the health system and supports both online and offline functionality, making it particularly useful in settings with intermittent internet access.

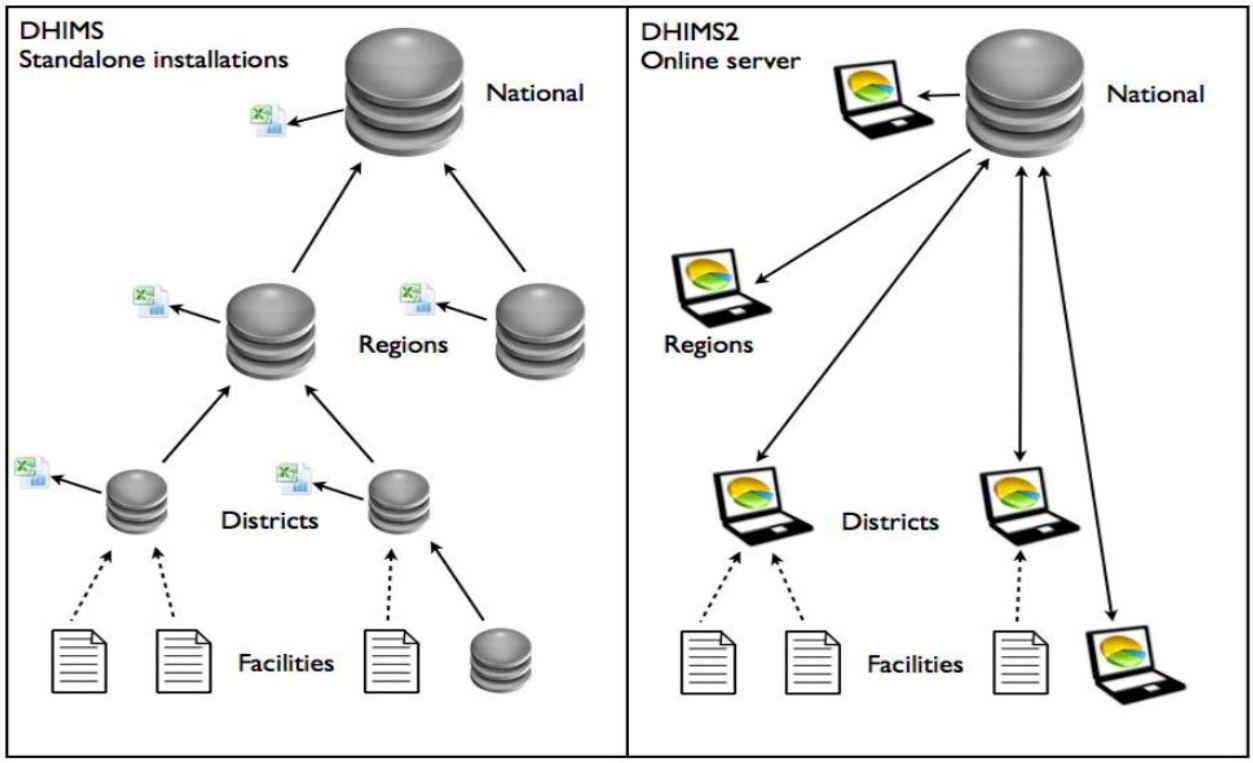

Figure 1: Illustration of DHIMS1 & DHIMS2 [8,10].

1.4. Overview of DHIMS2 as a Digital Health Information System

DHIMS2 is a comprehensive information system consisting of multiple components that function collaboratively to achieve key objectives: collecting, storing, processing, and sharing public health data. Developed by the Health Information Systems Programme (HISP), DHIMS2 provides a platform for feedback and learning, enabling users to monitor facility performance and compare service delivery metrics across regions [8,11,12].

Its user-centric design and emphasis on data visualization have contributed to improved data use among decision-makers, fostering a culture of evidence-based management and accountability in Ghana's health system.

2. Methods

2.1. Study Design and Setting

This study adopted a facility-based cross-sectional design to assess the performance and use of the District Health Information Management System II (DHIMS2) in a real-world public health setting. Situated in the Korle-Klottey Municipality of Ghana's Greater Accra Region, the study environment is reflective of a

busy urban district with a diverse range of health facilities engaged in routine data reporting. A quantitative approach was used to gather structured information from DHIMS2 users, with the aim of identifying key factors influencing how routine health information is generated, accessed, and utilized to inform decision-making processes at the facility, sub-municipal, and district levels.

2.2. Study Population and Sampling Approach

Participants in the study were frontline and administrative staff actively involved in the use of DHIMS2. A total of 257 respondents were recruited, all of whom had a minimum of one year of experience working in the health sector and demonstrated prior familiarity with DHIMS2 or similar routine data platforms. This selection ensured that participants possessed the contextual knowledge needed to evaluate the system's strengths and weaknesses from an informed user perspective. However, engagement with stakeholders, particularly the Korle-Klottey Municipal Health Management Team, was critical to the study's implementation. A series of initial meetings helped to ensure institutional buy-in and provided clarity on participant roles. The process of enrolling respondents was guided by principles of voluntary participation and relevance of roles in data entry, reporting, and use within the health information system.

2.3. Data Collection Procedures

Data collection was conducted electronically through a structured questionnaire administered via Google Forms. This digital approach facilitated flexibility and convenience, enabling participants to respond at a time and place of their choosing an important consideration given the operational demands placed on healthcare staff.

The data collection instrument was adapted from previously validated tools used in health information systems research and aligned with performance domains relevant to DHIMS2. The questionnaire comprised two parts:

- Part A captured basic demographic information.
- Part B assessed respondents' perceptions across key system performance domains including system quality, data security, information quality, service delivery efficiency, reduction of data entry errors, alignment with clinical documentation needs, and the system's influence on health data use and decision-making.

These domains were informed by national data quality standards and implementation guidelines, including the Ghana Health Service's Standard Operating Procedures and the broader framework of digital health governance.

3. Results

3.1. Perceived System Strengths and Decision-Making Support

The findings highlight both the technical strengths and practical limitations of DHIMS2 as perceived by facility-level users in Korle-Klottey Municipality. A total of 27% of respondents affirmed the platform's overall resilience and utility. However, only 3.3% of these users explicitly reported that DHIMS2 supports real-time, multi-level decision-making. This suggests that while the system is structurally functional, its potential for informing routine health management decisions is not fully realized.

3.2. Technical Challenges and Data Quality Concerns

Operational inconsistencies were raised by several users. Notably, 3.9% cited issues with unannounced downtimes and unscheduled analytics functions, which disrupt data processing during peak periods. A similar proportion of respondents (3.9%) pointed to inconsistencies between pivot table outputs and dataset reports, which may lead to user confusion and undermine confidence in data integrity.

Furthermore, 3.3% of respondents reported that DHIMS2 allows reports to be submitted without full data entry, reflecting gaps in system validation protocols. Such weaknesses pose risks to complete data and compromise the utility of the information for health planning.

3.3. Usability and Software Update Issues

System usability concerns were also raised. About 5.0% of users indicated that recent upgrades had negatively impacted functionality, citing challenges in accessing previously available features such as dataset completeness summaries. These issues highlight the need for user-centered design and better support during system upgrades to ensure continuity in functionality.

3.4. User Perspectives on Training and Support

While 13.3% of respondents acknowledged that DHIMS2 improves health data outcomes, only 3.9% emphasized the need for clearer error messaging. In addition, 3.9% cited redundancy caused by parallel reporting systems concern that runs counter to the core goal of integrated digital reporting. Importantly, 1.7% expressed frustration with the centralization of training efforts at national and regional levels, often leaving district-level staff inadequately informed and unsupported during system changes.

3.5. Broader Systemic and Operational Constraints

Respondents also pointed to broader system-level issues, including the duplication of datasets, errors in indicator calculations, and redundant facility entries problems noted by 8.8% of users. Furthermore, 11.0% reported inadequate dissemination of system updates, while 22.0% flagged irregular system maintenance as a barrier to effective use. Finally, 14.1% indicated that poor internet connectivity hindered timely access to DHIMS2, ultimately affecting data completeness and timely reporting.

3.6. System Challenges and Infrastructure Limitations

In addition to specific technical issues, several broader system-level challenges were reported by DHIMS2 users. A key concern was the presence of duplicated datasets, which often appeared as both "old" and "new" entries, leading to confusion and data redundancy. Users also noted the existence of duplicate facility listings and errors in indicator calculations, which can distort routine health metrics and complicate data validation.

Respondents highlighted the problem of frequently changing

population denominators, which affect coverage calculations and trend analyses over time. Differences in the aggregation of data-by-data elements versus indicators were also cited as a source of discrepancy.

Moreover, poor dissemination of system updates and communication gaps between DHIMS2 administrators and frontline users were noted as persistent issues. These lapses reduce user readiness and may delay adoption of new system functionalities.

Infrastructure limitations were also prominent among the concerns. In particular, inadequate internet access was reported to impair the timeliness and completeness of data entry and submission, especially in lower-tier facilities. Compounding this problem, shortages of standardized reporting tools have forced some facilities to rely on improvised registers, undermining data consistency and traceability at the primary reporting level.

3.7. Strength of DHIMS2 according to the various Sections

In exploring the effect of DHIMS2 features in areas like (system quality, performance quality, safety quality, information quality, and service quality), concerning decision-making this approach use used. Principal Component Analysis was used to identify the underlying factors contributing to DHIMS2's effectiveness in different quality areas (e.g., system quality, safety quality, information quality, service delivery quality, performance quality, reduction of data entry error, redesigning clinical data needs and decision-making). Principal Component Analysis helps ensure that the variables included in the analysis accurately reflect the intended quality dimensions and allows us to prioritize areas for improvement. The underlining cause was to identify areas that needed attention hence, the final extractions with <0.50 are to be considered.

No.	Variables	Communality of System Quality	
		Initial	Extraction
1.	The system is easy and flexible to use.	1	0.664
2.	The system responds quickly enough for use.	1	0.601
3.	The system is always up and running for access.	1	0.463 **
4.	The system includes all the service datasets with elements provided and it is Programme based.	1	0.566
5.	All indicators are calculated based on Programme requirements.	1	0.587
6.	The system acquires Organizational units of reporting.	1	0.599
7.	The system prevents double data element existence of reporting.	1	0.381 **
8.	The system prevents double datasets existence of reporting.	1	0.407 **
9.	The system analyse morbidity and mortality data and improved the speed of access to the output. The system eases clinical data reporting at all levels.	1	0.591
10.	The System has improved my access to information from	1	0.534
11.	other facilities	1	0.498 **

** ***These are areas of considerable System Quality improvement***

Table 1: Strength of System Quality

In regard to system quality in Table 3.7.1 above, it is important to improve the system's uptime, thereby reducing the downtime entirely as recorded (0.463 from 1). Likewise, to improve data use and avoid doubt in data elements, datasets, and indicators, these should appear once as a data source when generating a report.

No.	Variables	Communality of Safety Quality	
		Initial	Extraction
1.	Clinical data in the (DHIMS2) are always complete and up-to-date.	1	0.703
2.	Clinical data in the (DHIMS2) are never late and missing.	1	0.450 **
3.	Clinical data in the (DHIMS2) are always accurate and complete.	1	0.633
4.	The system helps in protecting the confidentiality of the clinical data of the patient.	1	0.567

** ***These are areas of considerable System Quality improvement***

Table 2: Strength of Safety Quality

Safety quality of data could not be completed without timeliness of data when users of the system needs it. Availability and timely data is key to any given decision supported with data as recorded (0.450 from 1) in the Table 3.7.2 above.

No.	Variables	Communality of Information Quality	
		Initial	Extraction
1.	The system has improved prompt access to clinical data at all user levels	1	0.634
2.	Information output from (DHIMS2) is detailed enough for decision-making.	1	0.747
3.	Information in (DHIMS2) is current and up to date for decision-making.	1	0.664
4.	The output of Information from (DHIMS2) is suitable for use at higher levels.	1	0.663
5.	The DHIMS2 had improved the timeliness of access to clinical information.	1	0.765
6.	The DHIMS2 had made accessing morbidity and mortality data easier than before.	1	0.765
7.	The system had improved the speed of access to regional data than before.	1	0.763

** ***These are areas of considerable System Quality improvement***

Table 3: Strength of Information Quality

There is no considerable System Quality issue regarding the Strength of Information Quality to be addressed since all the extracted values were less than 0.5 as shown in Table 3.7.3 above.

No.	Variables	Communality of Service Delivery Quality	
		Initial	Extraction
1.	Support provided to users of (DHIMS2) has been sufficient.	1	0.610
2.	Training on the use of (DHIMS2) has been sufficient.	1	0.410 **
3.	There is always someone to turn to if I need prompt assistance.	1	0.547 **
4.	The system had helped in improving the quality of care at facility levels	1	0.648
5.	The system had improved the accuracy of clinical information and information sharing.	1	0.754
6.	The system had made GHS and Programme Based decision-making more based on information.	1	0.758

** ***These are areas of considerable System Quality improvement***

Table 4: Strength of Service Delivery Quality

In Table 3.7.4 above, regular training and help desk adaptations not only enhance the skill set of the staff but also foster a culture of resilience and innovation within the organization. By proactively addressing issues and embracing ongoing education, the service delivery process becomes more efficient and responsive to client needs. This invariably improves the confidence of the user of any given application or tool. Since DHIMS2 is not obsolete there should be regular training (0.41 from 1) on system updates and likewise a dedicated avenue (0.547 from 1) to seek for assistance during the use of the system by a user.

No.	Variables	Communality of Performance Quality	
		Initial	Extraction
1.	The system influence or change my productivity levels.	1	0.70
2.	The DHIMS2 helped in reducing the consumption of material resources, time, and cost in getting accurate data.	1	0.684
3.	The DHIMS2 had improved the job performance of users regarding information needs.	1	0.558
4.	The system helps in clarifying employees' responsibilities as users.	1	0.555
5.	Clinical data information systems like (DHIMS2) help in increasing the effectiveness of dealing with the user.	1	0.562

** ***These are areas of considerable System Quality improvement***

Table 5: Strength of Performance Quality

There is no considerable System Quality issue regarding the Strength of Performance Quality to be addressed since all the extracted values were less than 0.5 as shown in Table 3.7.5 above.

No.	Variables	Communality of Reduction of Data Entry Error	
		Initial	Extraction
1.	DHIMS2 help to reduce errors through reminders and alerts when entering data.	1	0.80
2.	The error messages/alerts inform me of the error severity and suggest the cause of the problem.	1	0.778
3.	DHIMS2 help to overcome errors.	1	0.628
4.	DHIMS2 help to decrease clinical report errors.	1	0.777
5.	The DHIMS2 makes it possible for users to reduce data and information errors	1	0.764

** ***These are areas of considerable System Quality improvement***

Table 6: Strength of Reduction of Data Entry Errors

There is no considerable System Quality issue regarding the Strength of Reduction of Data Entry Errors to be addressed since all the extracted values were less than 0.5 as shown in Table 3.7.6 above.

No.	Variables	Communality of Redesigning Clinical Data Needs	
		Initial	Extraction
1.	DHIMS2 facilitates a clinical data journey in the system; from data entry to data transmission for use.	1	0.615
2.	DHIMS2 allows reviewing clinical data validation reports.	1	0.720
3.	DHIMS helps in simplifying supporting processes, such as graphs, charts, and tables, and makes it easier than before.	1	0.732
4.	DHIMS2 helps to decrease data/information access time to complete managerial requirements.	1	0.698
5.	DHIMS2 facilitates documentation reviews of clinical data for data management activities.	1	0.672

** ***These are areas of considerable System Quality improvement***

Table 7: Strength of Redesigning Clinical Data Needs

There is no considerable System Quality issue regarding the Strength of Redesigning Clinical Data Needs to be addressed since all the extracted values were less than 0.5 as shown in Table 3.7.7 above.

No.	Variables	Communality of Decision-Making	
		Initial	Extraction
1.	The system allows having a comprehensive picture of an Indicator or data element that helps in problem-solving.	1	0.687
2.	The implementation of DHIMS2 helps in addressing Health Service Policy issues at the earliest.	1	0.592
3.	DHIMS2 allows generating of all related information to a Programme in one place (e.g. NMCP, NACP, CHPS, EPI, MCHNP, etc.) that helps in making therapeutic and timely response decisions.	1	0.717
4.	DHIMS2 allows access and view of clinical data easily and quickly.	1	0.727
5.	DHIMS2 has the option to send reminders to healthcare providers to provide accurate but timely reports.	1	0.174 **

** ***These are areas of considerable System Quality improvement***

Table 8: Strength of Health Data Outcomes for better Decision-Making

The notification section of the DHIMS2 though present should be enhanced to send or notify data managers on inconsistent data entry and deadlines notifications to enhance the quality of data for quality decision-making processes. This enhancement would not only streamline the data management process but also empower data managers to address discrepancies promptly. By implementing these notifications, the system can significantly improve the accuracy and reliability of the data, ultimately leading to better-informed decisions in healthcare planning and resource allocation as indicated in the Table 3.7.8 above.

Model	Variables	Risk Factors	
		R Square	P-value
	System Quality		
1.	The system prevents double datasets existence of reporting.	0.054	0.002
2.	The system prevents double datasets existence of reporting..., The system is easy and flexible to use.	0.085	0.000
3.	The system prevents double datasets existence of reporting..., The system is easy and flexible to use..., and The system responds quickly enough for use.	0.085	0.000
	Performance Quality		
1.	Overall Performance Quality; with (DHIMS2), I believe I can work more efficiently.	0.055	0.001
	Reduction of Data Entry		

1.	DHIMS2 help to decrease clinical report errors.	0.025	0.032
	Clinical Data Needs		
1.	DHIMS helps in simplifying supporting processes, such as graphs, charts, and tables, and makes it easier than before.	0.053	0.002
2.	DHIMS helps in simplifying supporting processes, such as graphs, charts, and tables, make it easier than before.., DHIMS2 facilitates documentation reviews of clinical data for service delivery activities.	0.087	0.000

Table 9: Risk Factors for consideration of the DHIMS2 Data Management Platform

The implementation and utilization of the District Health Information Management System 2 (DHIMS2) in Ghana, while transformative for health data management, is not without associated risks. The following key risk factors should be considered to ensure system effectiveness, data integrity, and sustainability.

In this, the sections were used as a Dependent Variable to identify sections that needed to be considered for further enhancement as shown in Table 3.7.9 above. Table 3.7.9 above represents the Risk Factors of both R-squared values and their corresponding P-values, indicating the strength of the system variables assessed. However, the P-values in Table 3.7.9 above ranged from 0.001 to 0.032, with their corresponding R2s ranging from 0.025 to 0.087, indicating that the findings are likely reliable and not attributable to random chance. However, the user dependability of the variables tested while utilizing DHIMS2 for data management reasons. As a result, greater training should be focused on system adaptability, limiting data element and dataset duplication. Mini-user guides on data extraction, cleaning, chart construction, and interpretation should be easily accessible to non-technical system users. Under the Reduction of Data Entry; DHIMS2 should support the reduction of data entry errors by helping to decrease clinical report inaccuracies from the data generation level through system enhancement prompts.

4. Discussion

4.1. Overview of Study Purpose and Key Insights

The purpose of this study was to explore the perspectives of DHIMS2 users on the system's effectiveness in enhancing health data outcomes and decision-making. The findings show that while DHIMS2 supports health information management and contributes to evidence-based decision-making several operational and structural challenges continue to affect its full utility [2,5,13]. This section discusses the system's perceived advantages, technical strengths, and implications for improving digital public health infrastructure.

4.2. Advantages of DHIMS2 in Health Information Management

DHIMS2 plays a central role in managing health data by enabling the collection, transmission, and transformation of patient information into meaningful insights for decision-making. This includes clinical data related to morbidity, mortality, and service utilization. The platform facilitates timely access to data and supports programmatic reporting using systems such as eTracker. These features enhance efficiency and promote a data-driven culture among both technical and non-technical health staff.

The broader shift toward electronic information systems globally have redefined information systems (ISs) from mere data repositories into robust decision-support systems. This evolution is not only evident in the health sector but also across digitally competitive economies (1) where timely and actionable information is increasingly seen as a strategic asset for responsive systems.

4.3. Technical Strengths and Functional Contributions

One of the system's recognized strengths is its potential to reduce data entry errors. While inactive data validation rules exist, they are currently underutilized. Users also rely heavily on their technical skills to detect errors, as DHIMS2 lacks real-time prompts or alerts beyond blocked and required fields. However, guided data entry principles help reduce the risk of double entries, which enhances overall data quality.

The platform also contributes to redesigning clinical data flows by enforcing standardized documentation from prescribers to data managers. It supports filing of returns and data backups at both district and sub-district levels. These features improve the consistency of health data and promote its availability for timely analysis.

4.4. DHIMS2 and Improved Decision-Making

The system's design supports routine monitoring and validation of data, which contributes to improved decision-making. Features such as dashboards and program-specific reporting modules allow managers to view, compare, and act on real-time information. Data cleaning through validation tools and regular use of data quality

checks has helped strengthen the reliability of facility-reported data, as noted by previous studies [2,5].

4.5. Strengths and Limitations of the Study

While the study offers valuable insight into the practical use of DHIMS2 at the facility level, it is limited by its geographic scope. The data were drawn solely from DHIMS2 users within the Korle-Klottey Municipality, making it inappropriate to generalize the findings to the entire Greater Accra Region. Nonetheless, the experiences and lessons documented here are highly relevant for broader national strategies to optimize DHIMS2 implementation, training, and user engagement.

5. Conclusion

This study highlights the capacity of DHIMS2 to serve as a robust digital health information platform for data collection, analysis, and feedback within Ghana's health system. The system demonstrates strong technological potential in facilitating real-time reporting, data visualization, and decision-making at multiple levels of care.

However, the findings also reveal key areas for improvement. System usability could be enhanced by incorporating user notifications and alerts to guide data entry, minimizing errors, and prompt timely validation. In line with recommendations by Hayajneh et al. (2006), certain system upgrades should be manually managed and adapted to the local context, allowing for greater customization and relevance to the Ghanaian health environment [14].

Ultimately, the evidence presented here offers practical insights for policymakers, implementers, and developers aiming to strengthen DHIMS2 functionality. The experiences documented in the Korle-Klottey Municipality can serve as a model for optimizing digital health systems across other districts, contributing to a more responsive, data-driven health system nationwide.

Data Analysis

Quantitative data were analyzed using SPSS version 20.0. The dataset was first cleaned to address inconsistencies in variable coding and to ensure internal validity. Descriptive statistics, such as means and proportions, were employed to summarize respondent characteristics and system performance indicators.

To explore relationships between system performance variables and user experiences, stepwise regression analysis was performed. This approach allowed for the identification of key predictors while minimizing multi-collinearity. The significance of observed associations was tested at a 95% confidence interval, in line with standard statistical practices for public health research.

Ethical Considerations

This study involved the collection of anonymous survey data from health professionals and did not include any patient data or clinical interventions. As such, it posed minimal risk to participants. Ethical clearance was obtained from the Ghana Health Service Ethics Review Committee.

Ethics Approval Declaration

The Approval Committee for the study was Ghana Health Service Ethics Review Committee with GHS-ERC:049/10/21 number was granted after the review and has given the approval for the implementation of the Study Protocol. This was in line with an approval from the Regional Health Directorate and Korle-Klottey Municipal Health Directorate (GHS/GARHD/001/22) and the University of Ghana, Legon, Department of Biostatistics of the School of Public Health. An informed consent was obtained from all respondents prior to data collection.

Voluntary Consent/Withdrawal

Participation in the study was entirely voluntary. Participants were at liberty to withdraw from the study at any time. A participant who chose to continue or not to participate in the study did not affect any data reported. The data was not also linked to participant's name, study report and publication as the total number of participant's who declined to participate.

Consent Form

STUDY TITLE: ASSESSING THE STRENGTH OF DISTRICT HEALTH INFORMATION MANAGEMENT SYSTEM II (DHIMS2) AS A DATA MANAGEMENT PLATFORM IN KORLEY-KLOTEY MUNICIPALITY.

PARTICIPANTS' STATEMENT

I acknowledge that I have read or have had the purpose and contents of the Participants' Information Sheet read and all questions satisfactorily explained to me in a language I understand (English Language). I fully understand the contents and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name of Participant ……
…….....

Participants' Signature ……..…
OR Thumb Print……
Date…….

Human Ethics Declaration

Not applicable.

Consent for Publication

All Authors and Co-authors together with every participant of this study agreed and consented for the publication of this Manuscript through the signing of their Consent Forms before commencing data collection.

Declaration of Conflicting/Competing Interests

The authors declare that there are no known conflicts of interest associated with this study.

Funding

This study was self-funded. The principal investigator served as the lead researcher and was responsible for all aspects of the project, including fieldwork, data entry, data analysis, and manuscript preparation.

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Clinical Trial

• Clinical trial number: Not applicable.

Availability of data and Materials

All data and materials used during the data collection do not contain any human part or element but subject to the success of the study. The findings and recommendations will therefore be made available for use to improve the DHIMS2 platform for decision-making.

Notes

i. Additional information about the District Health Information Management System II (DHIMS2) is available at: https://dhims.chimgh.org/dhims/dhis

ii. For more details on DHIS2 Academy resources, visit: https://www.dhis2.org/academy

Author Contributions

All authors read and approved the final version of the manuscript for submission.

1. KB (Kingsley Baah) conceptualized the study, conducted the fieldwork, performed the data analysis, and drafted the initial manuscript.

2. SM (Smauel Mayeden) contributed to the review and editing of the manuscript.

3. K A-W (Koku Awoonor-Williams) provided critical revisions, supported interpretation of findings, and contributed to contextualizing the study within Ghana's national health information system.

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