

## Research paper

# Health Systems Strengthening among Healthcare Workers at Kenyatta National Hospital, Kenya.

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The project aimed to call to mind the health systems strengthening among healthcare workers at Kenyatta National Hospital, Kenya. The investigation deployed a cross-sectional study. A sample total of 263 respondents was calculated using the Krejcie and Morgan formula for the quantitative study. A strict inclusion criterion was followed to select the respondents from all trained health personnel in Kenyatta National Hospital. The study utilized an interview schedule. Data were analyzed using SPSS version 21 while qualitative data was analyzed on themes developed. Data presentation was in the form of quantitative statistics such as frequency distribution, percentages and tables. Qualitative results were presented in verbatim form. A total of 263 respondents were engaged in the quantitative study. The study utilized a questionnaire and a key informant interview guide. Before processing quantitative data, data was cleaned, coded and keyed into MS Excel database computer and analyzed using SPSS version 21. Descriptive statistics were used to describe measures of central tendency and dispersion. Findings were presented using frequency distributions and summary tables. Associations between predictor and outcome variables were run through Correlational statistics. Of the 263 respondents, 184(69.2%) had a positive attitude, 29 (10.9%) were uncertain, and 53(19.9%) had a negative mindset that the ICT infrastructure was conducive to the growth and expansion of HMIS. KNH has a current and up-to-date ICT infrastructure that demonstrated a moderate positive correlation with HMIS has been fully implemented by the hospital ( $r = 0.41$ ,  $p < 0.01$ ), suggesting that advanced ICT infrastructures are significantly imperative towards HMIS implementation. The Kenyatta National Hospital management needs to ensure that there is a system thinking where every individual staff is motivated and feels part and parcel of the HIMS process. KNH needs to devise a HIMS specifically for their clientele

**Keywords:** Health System, Digital Transformation, Health Management Information System, Interoperability, Universal Health Coverage, Health Information

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## INTRODUCTION

The landscape of information systems is in a perpetual state of evolution, adapting to the needs of the times. This ensures they remain relevant and effective in providing valuable solutions for individuals and organizations. The WHO (2020) notes that interoperability of the health management Information is systems. For better interventions in tropical and infectious diseases, we need improved health information management systems. These systems play a critical role in healthcare, public health, administration, research, and education, despite limitations in healthcare and public health data, often this relates to the breadth of data collected, which is frequently determined by the expected HIMS (Salim *et al*, 2016).

The majority of the developed countries among them Canada, the United States of America and the United Kingdom have had to budget huge amounts of money for an impetus towards Health Management Information System (HMIS) adoption whereas developing countries are still lagging behind and struggling to make do with the old traditional healthcare setups. Good health is a fundamental value of all societies and the health system is one of the most important contributors to improved population health (Denecke & Baudoin, 2022). Amid unprecedented public and political calls for greater resilience in health systems, the world has undergone milestones and more advances are expected in technology change, especially with MDGs, SDGs and Vision 2030. While the benefits of ICT in health organizations and governments cannot be disputed, there are several concerns about its success as well as the strategies to be adopted in the implementation of IT systems in various countries. Health systems are the core foundations of how countries respond to new disease threats and improve the health of the people. The iterative nature of the process cannot be further overemphasized; any changes in mission, operations, functions, or information and data needs must be assessed to reveal their impact on analyses already completed since these changes could have a profound effect on the system to be acquired (Salim *et al*, 2016)..African policymakers are increasingly called on to use evidence-based research to inform development decisions. However, this requires the rigorous collection of data as well as a coordinated system to disseminate it. This is why the Kenya-based African Population Health Research Center is advocating for national policies to enable strong data systems. The International Body for Health Information suggests that what governments should do to improve HIM systems and HIM professional status to get recognition like any healthcare provider in India should be implementation of standardized practices throughout the country and enhance education and training programs (UHJ, 2019). The Kenya Health Policy (2014-2030) defines the Country's long-term intent in health through the strengthening of health information. The target of the policy is to attain a level and distribution of health at a level commensurate with that of a middle-income country, with specific impact targets of attaining a 16% improvement in life expectancy; a 50% reduction in annual mortality from all causes; and a 25% reduction in time spent in ill health (GoK, 2020).According to (Salim *et al*, 2016). embracing modern innovations in healthcare technology is one among very many ways of improving efficiency and reducing losses within healthcare organizations. The integration of information and health services envisaged benefits cannot be disputed, still, there are many challenges which affect and determine its effectual adoption. The majority of organizations have abandoned their newly acquired systems only to go back to their old manual systems. Health management information systems can be the impetus for managing complex healthcare challenges and addressing growing information needs. The implementation of HMIS is crucial for monitoring diseases, allocating resources, evaluating programs, conducting research, and enhancing healthcare systems to achieve optimal public health outcomes.

Organizations should focus on the iterative nature of the process and carefully assess the impact of any changes they make. On this pedal, the collaboration will ensure universal access to quality healthcare (G-20 Osaka, 2019). As reported by (Denecke & Baudoin, 2022) public health leaders need to embrace the role of Chief Health Strategist for their line of work especially working with all relevant partners so that they can drive initiatives including those that explicitly address "upstream" social determinants of health. Specialized Public Health training should be available for the public health workforce and public health students. A people-centred approach means that data is meant to empower people or help their effort to actively participate in the development of a health management information system, from the design phase all the way to the implementation of the system.

According to (Omambia, 2024), leveraging technology can help provide accessible, efficient, and equitable healthcare services for everyone. The digital transformation should usher in a new era in healthcare that empowers patients and communities by providing better access to care and information, reducing waiting lists and costs, and enabling health services to reach the most vulnerable populations. It also supports collaborative inter professional practice and facilitates access to health and community resources in general. Governments can improve access to quality health services by implementing secure and interoperable digital solutions and strengthening health information systems. Digital transformation enhances self-care, promotes health, improves collaboration, and addresses healthcare access inequities. A comprehensive digital transformation has the potential to improve health outcomes for all, allowing for a healthier population and a more sustainable future

## METHODS

The study was conducted at Kenyatta National Hospital in Nairobi County, Kenya. KNH is a National referral facility at the apex of the healthcare sector in Kenya both as a facility and a training center. As per the time of the study the facility had 50 wards, 22 outpatient clinics, 24 theatres (16 specialized) and an Accident and Emergency department it has a bed capacity of 1800 beds out of which 209 beds are for the private wing. The Hospital was built to fulfill the role of being a National Referral and Teaching Hospital, as well as to provide medical research environment. The study utilized

a Cross-sectional research design. Cross-sectional studies portray an accurate profile of persons, events, or situations at that particular time. It allows the collection of large amounts of data from a sizable population in a highly economical way. As per the healthcare tiers in Kenya, KNH is at the apex of which is the National Teaching and Referral Hospital and thus was purposefully selected. These allowed the study to collect data which was analyzed quantitatively and qualitatively using descriptive and inferential statistics. These details corroborated the Cross-sectional survey as deemed the best strategy to fulfill the objectives of the study. The research design explored a case study of KNH. There were 4,490 accredited healthcare service delivery officers at Kenyatta National Hospital who would have in one way or another been involved in implementing the HMIS. The study was conducted among the 4,490 accredited healthcare service delivery officers in the three levels of management; top/managerial, middle/ and operational levels at Kenyatta National Hospital who would have in one way or another been involved in implementing the HMIS. All other persons not involved in the HMIS implementation were excluded. KNH has 46 departments in total. From the organogram respondents were sampled based on their relevance and phases of HMIS implementation, thus there were three cadres of respondents. Since a sample was selected from the KNH located in Nairobi, it was expected that selecting one healthcare worker/respondent was the same as selecting the other. In the determination of the target population to be surveyed, a qualitative and quantitative sample size was determined consequently, according to the Krejcie and Morgan formula, three factors served as the basis for appropriate determination of the sample size (Kosomo, 2007). These factors were the projected frequency of the preferred respondent characteristic (p) from which an approximated 87.5% of the health professional officers surveyed were expected to persuade that the research was viable. The other factors used were the preferred level of confidence (t) which was set at 95% (gives a standard value of 1.96) and the acceptable margin of error (m) set at 4% (which gives a standard value of 0.04). Given the three factors, the sample size was thus calculated using the formula:

$$\begin{aligned} \text{Total number of health workers} &= 4,490 \\ 19 \text{ departments are directly involved with HMIS} \\ N &= \{t^2 \times p(1-p) \times 1\} / m^2 \\ &= 1.96^2 \times 0.875(1-0.875) / 0.04^2 \\ &= 0.420175 / 0.0016 = 262.609375 \end{aligned}$$

and thus, 263 respondents at the operational level and thus 14 respondents in each stratum/department. A questionnaire and key informant interview schedule were used as data collection tools. The data collection method was through the use of questioning and interviewing. The data collection technique involved structured and unstructured questions combined with a key informant interview. Before processing the quantitative data collected from the field, it was cleaned, edited, coded then entered into a computer software and analyzed using SPSS version 21. Qualitative data which cannot be represented by a numerical statistic, was done through qualitative content analysis. The study proposal was submitted to the Kenyatta National Hospital/University of Nairobi ethical review committee for ethical approval. Subsequent approval was vindicated upon meeting the warranted KNH/UoN ERC threshold.

## RESULTS

Out of 263 respondents, 133(50.6%) were males and 130(49.4%) were females. With regard to age category, 161 (60.5%) of the respondents were aged between 36-45 years while 102 (38.8%) were aged between 26-35 years. The study findings indicated that 34 (12.8%) of the participants had < 1 year of work experience at KNH, 66 (24.8%) had between 1-3 years of experience, 59 (22.2%) had between 4-7 years of work experience, while 74 (27.8%) had 13 years and above of work experience within the facility. Results indicated that out of the 263 respondents, 13 (4.9%) were in top-level management, 139 (52.3%) were in middle-level management while 114 (42.9%) were in operational-level management (Table 1)

**Table 1:** Frequency analysis of the Social demographic characteristics of respondents

Variables	Category	Frequency	Percentage
<b>Sex</b>	Males	133	50.6
	Females	129	49.4
<b>Age in years</b>	26-35	6	2.3
	36-45	161	60.5
	46-55	99	37.2
<b>Level of education</b>	Diploma	126	47.4
	Degree	138	51.8
	Masters	2	0.8
<b>Duration of work experience in KNH in years</b>	<1	34	12.8
	1-3	66	24.8
	4-7	59	22.2
	8-12	33	12.4
<b>Level of management</b>	13 and above	74	27.8
	Top	13	4.9
	Middle	139	52.2
	Operational	114	42.9

Out of the 263 respondents 184(69.2%) had a positive attitude, while 29 (10.9%) were uncertain and 50(19.9%) had a negative attitude that the ICT infrastructure is conducive for the growth and expansion of HMIS in KNH. On whether the cost of ICT equipment and tools affected the application and implementation of HMIS the analysis showed that 184 (69.2%) were optimistic on the concept and 48 (18%) were uncertain, 24 (12.8%) were pessimistic. With the foregoing, 85(31.9%) had a negative perception, 92 (34.6%) of the participants were uncertain and 89 (33.5%) had a positive perception that the department had an adequate pool of highly HMIS-trained skilled labour. (Table 2).

**Table 2:** Respondent's views on technical factors influencing the implementation of HMIS at Kenyatta National Hospital

Factors	Negative Attitude n (%)	Neutral	Positive Attitude
<b>Cost of ICT influence</b>	34 (12.8)	48 (18.0)	184(69.2)
<b>Conducive ICT infrastructure</b>	50 (19.9)	29 (10.9)	184(69.2)
<b>Expertise</b>	85 (31.9)	92 (34.6)	89 (33.5)
<b>Lack of training</b>	35 (13.2)	16 (6.0)	215(80.9)
<b>Availability of computers</b>	260 (98.9)	3 (1.1)	0 (0.0)
<b>Updated ICT infrastructure</b>	93 (35.0)	70 (26.3)	103(38.7)

Various variables were subjected to the chi square test to determine their associations and the implementation of HMIS

### Association between organizational factors and the implementation of HMIS

These items were determined based on the following hypothesis:

H<sub>0</sub>: There is no association between the HMIS implementation and the use of HMIS delivering healthcare services.

H<sub>a</sub>: There is an association between the HMIS implementation and the use of HMIS delivering healthcare services.

A chi-square test of association was conducted to examine the relationship between organizational factors and the implementation of HMIS. For the variable "HMIS has been fully implemented by the hospital," a significant association

was found with the variable "KNH uses HMIS in its day-to-day activities/roles in delivering healthcare services,"  $\chi^2 (16) = 50.207$ ,  $p < 0.001$ . Based on these results, the extent to which the hospital had fully implemented HMIS was related to how extensively HMIS was utilized in the day-to-day activities and roles related to healthcare services at KNH. In other words, the full implementation of HMIS at KNH resulted to an extensive day-to-day use of HMIS in service delivery at the hospital (Table 3).

The planning, coordinating, organizing and controlling of activities was very critical. Admission of patients, ordering of drugs and charging of services, involvement of in charges of all departments helped gain support from the staff they work with, and training of staff through workshops and seminars, informing clients of the changes and investing in the HMIS. The system implementation was critical since it defined how the implementation would be done ensuring that the information system was operational ensuring quality assurance. The development of a patient's database and conducting a needs assessment. The involvement of the stakeholders since they were the ones to make the process successful. All the activities were critical, but mostly the implementation. Training of users to have skills and knowledge on how to use the system and to avoid resistance and good software, preparation of guidelines since they literally explain everything related to the system. The implementation phase was important as this determined how well the process will roll out, and self-assessment. The PDCA cycle was effective and it brought about emphasis on continuous feedback that identifies major errors on the ongoing process. The needs analysis helped KNH management to identify the needs for implementing HMIS. Development of data capturing system using computers during patient's registration. The pilot studies were important as it involved various departments. The involvement of other stakeholders. However, some respondents were uncertain of what they thought was critical.

**Table 3: Association between HMIS implementation and day-to-day activities**

N (%)	KNH uses HMIS in its day-to-day activities/roles in delivering healthcare services					$\chi^2$ (df)	p-value	
	Strongly disagree (n)	Disagree (n)	Uncertain (n)	Agree (n)	Strongly agree (n)			
<b>HMIS has been fully implemented by the hospital</b>	<b>Strongly disagree (n)</b>	4 (0.8)	3 (0.8)	3 (2.3)	8 (12.6)	2 (3.5)	50.207 (16)	<0.001
	<b>Disagree(n)</b>	5 (3.6)	5 (3.3)	11 (9.9)	59 (55.6)	8 (15.5)		
	<b>Uncertain(n)</b>	1 (2.1)	0 (1.9)	10 (5.6)	30 (31.6)	9 (8.8)		
	<b>Agree(n)</b>	1 (3.6)	3 (2.3)	5 (9.1)	61 (55.6)	19 (15.5)		
	<b>Strongly agree(n)</b>	0 (0.8)	0 (0.8)	1 (2.3)	10 (12.6)	9 (3.5)		

### Association between management supports training and HMIS implementation

For the variable "HMIS has been fully implemented by the hospital", a significant association was found with the variable "KNH management supports training in HMIS",  $\chi^2 (16) = 57.658$ ,  $p < 0.001$ . The significant association between these variables suggested that the full implementation of HMIS in the hospital resulted to supportive management training (Table 4).

There were two components of registration and finance–revenue collection. The registration component greatly helped in the identification of patients. A key informant believed;

"Data is well captured, processed, stored, and retrieved, though much should be done to make it effective. HMIS users are well trained on the use of the software. The hardware and software are available to the users, and are used to produce and store data, the HMIS is a process that helps improve data management. The system provides a lot of data sharing, the network is properly installed and there is a software called funsoft, the data processing component is well equipped. The HMIS component has changed the organization to some extent though some are not functional. On integration, at first there was resistance but this changed after training of the users. Data is stored in a database, retrieved and used any time. The hardware and software run on an operating system, java....."

However, others reckoned that users were not fully trained and others were new, hence the customer service was slow, and the network was not very reliable, software was unreliable and it left out major revenue items. This was echoed by one participant stating that;

"The hardware is few, the software is very unstable. The system is not up to date, most of the computers are hanging and even losing data, and that is costly. The users should be trained in order to comfortably adopt the system..."

**Table 4:** Association between management supports trainings and HMIS implementation

		<b>KNH management supports trainings in HMIS</b>					$\chi^2$ (df)	p-value
<b>N (%)</b>		<b>Strongly disagree (n)</b>	<b>Disagree (n)</b>	<b>Uncertain (n)</b>	<b>Agree (n)</b>	<b>Strongly agree (n)</b>		
<b>HMIS has been fully implemented by the hospital</b>	<b>Strongly disagree(n)</b>	3 (0.5)	5 (2.0)	8 (4.6)	4 (11.7)	0 (1.3)	57.658 (16)	<0.001
	<b>Disagree(n)</b>	1 (2.0)	15 (8.9)	23 (20.2)	43 (51.3)	6 (5.6)		
	<b>Uncertain(n)</b>	1 (1.1)	3 (5.1)	15 (11.5)	29 (29.1)	2 (3.2)		
	<b>Agree(n)</b>	1 (2.0)	3 (8.9)	15 (20.2)	64 (51.3)	5 (5.6)		
	<b>Strongly agree(n)</b>	0 (0.5)	1 (2.0)	0 (4.6)	15 (11.7)	4 (1.3)		

A significant association was observed between the variable "HMIS has been fully implemented by the hospital" and the variable "Change has brought about better, more effective and efficient healthcare services delivery",  $\chi^2$  (12) = 105.049,  $p < 0.001$ . The result indicated that the full implementation of HMIS in the hospital resulted in a noticeable impact on the quality and efficiency of healthcare services. In simpler terms, when the hospital effectively used an advanced information system like HMIS, it led to positive changes in how healthcare services were provided (Table 5).

From respondents, the Information system development and implementation activities that were conducted in anticipation from manual to electronic included; Planning, designing, training of system users, revision of indicators, preparation of guidelines, staff training, benchmarking, self-assessment of the organization, evaluation of manual systems, conducting group discussions, integration of data collection process, disease surveillance, patient identification, deployment of trained staff, procurement of computers, installation and commissioning.

The components considered to be key elements were; Hardware, software, users, data collection, storage and its management, integration, then use of funsoft software, patient bio-data, the networks and internet, the processes and basically everyone working in the system. Some of the respondents were uncertain since their interaction with HMIS was limited.

A group/committee was formed to pilot the program, and went ahead in teaching and guiding. Training of the users and making of the staff to be aware of the HMIS and hence reducing resistance to change. Establishment of ICT department and employment of trained ICT personnel. Following a variety of steps depending on the model in use, and using a well-planned approach such as; stakeholders' involvement, training of the users on the appropriate changes, recognizing the need for change in the operations and developing necessary adjustments to meet organizational needs. IT in charge;

"Am not aware. However, we are moving away from ERP and by December we are expected to go live using SAP4HANA which interfaces the whole hospital. Right now, our benchmark is Germany Charite Teaching and Referral Hospital (one of the biggest hospitals in the world)"

**Table 5:** HMIS implementation and efficient healthcare services delivery in KNH

		<b>Change has brought about better, more effective and efficient healthcare services delivery in KNH</b>					$\chi^2$ (df)	p-value
<b>N (%)</b>		<b>Disagree (n)</b>	<b>Uncertain (n)</b>	<b>Agree (n)</b>	<b>Strongly agree (n)</b>			
<b>HMIS has been fully implemented by the hospital</b>	<b>Strongly disagree(n)</b>	11 (2.0)	5 (3.0)	4 (13.0)	0 (2.0)	105.049 (12)	<0.001	
	<b>Disagree(n)</b>	9 (8.9)	13 (13.2)	64 (57.2)	2 (8.6)			
	<b>Uncertain(n)</b>	1 (5.1)	9 (7.5)	39 (32.5)	1 (4.9)			
	<b>Agree(n)</b>	6 (8.9)	13 (13.2)	56 (57.2)	13(8.2)			
	<b>Strongly agree(n)</b>	0 (2.0)	0 (3.0)	10 (13.0)	10 (2.0)			

The majority of those interviewed were of the opinion that HMIS had improved services by effecting efficiency in services delivery especially in accident and emergency department, in the wards and reception areas, generally efficiency in

information handling, it had helped to identify patients in the system, and there was reduction in costs. One respondent observed;

“For sure the HMIS had reduced the patient waiting time during registration, increased effectiveness in communication, charging of services, ordering of drugs online, discharging of patient, ease of records retrieval, reduced errors....”

However, a few respondents were of the view that, HMIS had not improved efficiency to a larger extent since a lot of things were still done manually, no proper training, the system is not fully implemented

The stakeholders involved included; users, the ICT personnel, the HODs, Finance personnel, procurement, Health records personnel, other users of HMIS in KNH including some clinicians, pharmacists, nurses, physiotherapists, nutritionists, counselors, Funsoft system developers, Insurance firms- NHIF, Madson, AAR Health, Ministry of health, suppliers, ICT board and the hospital management. However, few individuals at the hospital were involved and many were not aware of the process. Two respondents opined;

“The involvement of some stakeholders was done at the tail end of the process or implementation stage and were given no option of giving their input, hence too much confusion at work stations.”

## DISCUSSION

The study findings indicated that organizations need to target resource mobilization, research and development, and access to essential medicines and vaccines, health workforce, international health regulations and statistical capacity-building, further WHO stated that a qualified and available health workforce, equitably distributed and accessible by the population is essential for a well-functioning health system(WHO,2019). This report agreed with the study findings, whereby out of the 263 respondents, a small number of the participants 30 (11.3%) were uncertain if KNH uses HMIS in its day-to-day activities in delivering healthcare services while 168 (63.2%) of the participants agreed and 47 (17.6%) strongly agreed that KNH uses HMIS in its day-to-day activities in delivering healthcare services. From this analysis the study therefore concluded that KNH used HMIS in its day-to-day activities in delivering healthcare services. A significant association was found with the variable “KNH uses HMIS in its day-to-day activities/roles in delivering healthcare services”,  $\chi^2 (16) = 50.207$ ,  $p < 0.001$ .

Similarly, a significant association was found between the variable "HMIS has been fully implemented by the hospital" and the variable "KNH management supports training in HMIS",  $\chi^2 (16) = 57.658$ ,  $p < 0.001$ . Furthermore, a significant association was observed between the variable "HMIS has been fully implemented by the hospital" and the variable "Change has brought about better, more effective and efficient healthcare services delivery,"  $\chi^2 (12) = 105.049$ ,  $p < 0.001$ . Additionally, there was a significant association between the variable "HMIS has been implemented by the hospital" and the variable "There is an effective and fair distribution of computers in the hospital,"  $\chi^2 (16) = 110.705$ ,  $p < 0.001$ . Moreover, a highly significant association was found between the variable “KNH management supports trainings in HMIS” and “HMIS has been fully implemented by the hospital” is unlikely to have occurred due to random chance,  $\chi^2 (8) = 49.753$ ,  $p < 0.001$ . These integrations of HIMS had a positive influence on the day-to-day affairs of KNH. The respondents reflected that adequate staff training and sufficient time spent by different experts in the field helped to ensure the appropriate design of the new system which will in return bear crucial fruits for evidence-based policymaking. It was safe to say that the study highlighted that KNH's leadership and governance had developed changes in its structure into a more integrated process of management, especially when it comes to how products and services are adopted and implemented in the hospital. Making sure there is an all-inclusive consultative process across all cadres (Jarbas, 2024). The Information system development and implementation activities that were conducted in anticipation from manual to electronic at KNH include; Planning, designing, training of system users, revision of indicators, preparation of guidelines, staff training, benchmarking, self-assessment of the organization, evaluation of manual systems, conducting group discussions, integration of data collection process, disease surveillance, patient identification, deployment of trained staff, procurement of computers, installation and commissioning. The key informant's interview also pointed out to training of users to have skills and knowledge on how to use the system, user-friendly software and preparation of guidelines since they explain everything related to the system and to contain change resistance. The implementation phase was important as it determined how well the process rolled out, and self-assessment(Salim *et al*, 2016). The PDCA cycle was effective and it brought about an emphasis on continuous feedback that identifies major errors on the ongoing process. The needs analysis helped KNH management to identify the needs for implementing HMIS. Development of data capturing system using computers during patient's registration.

The pre-implementation was important as they involved various departments and the involvement of other stakeholders. However, some respondents were uncertain of what they thought was critical during the adoption and implementation of HIMS at KNHS. According to (G-20 Osaka, 2019), a people-centred approach means that, data should empower people or help their effort to actively participate in the development of a health management information system, from the design phase to the implementation of the system. The (WHO, 2017) indicates that governance and leadership of countries is vital on how the health systems perform. Even where health systems are well developed and resourced, there is clear evidence that quality remains a serious concern, with expected outcomes not predictably achieved and with wide variations in standards of healthcare delivery within and between health-care systems. This is in tandem with the study results that indicated there is a need to strengthen the health system through enhancing and in-syncing systems and human systems in order for the implementation and evaluation of health programs and appropriate use of resources.

## CONCLUSIONS

Health systems are crucial for patient care, research, and public health. KNH's fragmented approach to HIMS results in inefficiency and gaps. Improving HIMS has the potential to reshape healthcare globally. The SDGs highlight the need for robust health systems. HIMS should be viewed as investments that recoup their costs. HIMS should be viewed as investments and not expenses. Organizations have unique cultures and areas for growth. While there was no portent of health human resource amber attestation, there is a need for KNH to protect and strategize against labor hemorrhage and individual sclerosis that could plunge the facility into healthcare crises. Despite limited resources, they can adapt and improve through a shift in organizational culture for sustained success and better healthcare delivery.

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