Integrated Analysis Of The Government Policies Along With The Implementation Frameworks For Healthcare Information System

Abdulsalam Aljumah, PhD

Business Administration Department,
Majmaah University
Al Majmaah, Saudi Arabia
Email: aaljumah@mu.edu.sa
ORCID: 0000-0003-3855-1564

Abstract

HealthCare information Technology (HIT) refers to a broad assortment of electronic tools that make data organization and sharing more efficient in the healthcare industry. The utilization of HIT may establish a healthcare environment that is both integrated and seamless, through the use of Electronic Health Records and telemedicine platforms. The research aims to explore the relationship between policies and implementation frameworks in determining HIT usage.

We discuss HIT implementation frameworks like Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the Technology-Organization-Environment (TOE) to understand the processes and benchmarks used to deliver a successful project. These include understanding elements related to staff expectation, applications, efficiency, social influence, patient engagement, management support, training and other facilitating conditions. The analysis helped understand the too ls required for a successful implementation of HIT from a management perspective.

The major principles of implementation frameworks was further extended to analyze the mechanism/policies followed by the United Nations and governments of Ethiopia, Bhutan and Middle eastern countries. The

management of medical records has become subject to strict regulations such as the General Data Protection Regulation and the Health Insurance Portability and Accountability Act (HIPAA). These policies aimed at ensuring data security, patient privacy, compatibility, capacity building, etc.

A key factor in reducing resistance to adoption is the ease of use, both in actuality and perception. The UTAUT model goes beyond TAM by placing importance on additional factors, such as the influence of peers and enabling environmental factors. WHO Europe's efforts have enabled a more comprehensive view of HIS implementation. Priorities such as digitizing health data, fostering interoperability, and strengthening institutional capacities have been agreed upon by the global community.

INTRODUCTION

Health IT (HIT) is becoming an integral part of healthcare delivery systems everywhere. Patient care, administrative procedures, and healthcare as a whole stand to benefit greatly from the use of information technology in this age of digital transformation. To better understand the relevance, difficulties, and possible effects of Healthcare Information Systems (HIS), this comprehensive research digs into the many aspects of government policies and implementing frameworks around HIS. "Healthcare information technology" refers to a wide range of electronic resources that facilitate better data organization and sharing in the medical industry. Health information technology (HIT) can establish a seamless and integrated healthcare environment from Electronic Health Records (EHRs) through telemedicine platforms. In addition to helping doctors better coordinate and make decisions about patient care, this gives people more control over their health by giving them more access to their medical records (Moghaddasi et al., 2018). The term "eHealth" is often used to refer to the larger area of healthcare technology that includes HIT and other digital tools. Health informatics, the exchange of health data systems, and mobile health apps are all examples of such innovations in the field of medicine and healthcare. The convergence of these technologies is a crucial part of

contemporary healthcare since it allows for individualized treatment, remote monitoring, and data-driven decision-making.

Despite the advantages, broad implementation of eHealth technologies like HIT has been difficult. Integration with current healthcare systems has been hampered by issues such as high installation costs, data security worries, interoperability challenges, and opposition to change within healthcare organizations. The adoption of eHealth technology and the mitigation of these issues are both aided by government policies and frameworks. Communities and people alike may benefit greatly from using HIT. Through telemedicine and online consultations, it expands access to medical treatment for those living in rural or otherwise hard-to-reach places (AP et al., 2020). By having online access to their medical information, patients are able to make more educated choices regarding their health care. In addition, HIT may dramatically reduce administrative responsibilities, allowing medical professionals to devote more time to direct treatment to patients. It may also aid in the diagnosis of diseases at an early stage when treatment is most effective.

HIT has come a long way since its inception; nowadays, it makes extensive use of cutting-edge innovations like AI, ML, and Big Data analysis. These developments allow for automated diagnostics, the detection of health patterns, and predictive analytics for the treatment of illness. Chatbots and virtual assistants powered by artificial intelligence make it easier for patients to interact with healthcare professionals and get prompt answers to their questions. When it comes to the development of eHealth and HIT, government rules and laws are crucial. Data protection, security measures, payment structures, and telemedicine guidelines are all covered by these rules. To promote remote healthcare delivery and preserve the continuity of treatment while minimizing physical contact, numerous countries swiftly developed and implemented eHealth regulations in the aftermath of the COVID-19 pandemic. The pandemic of COVID-19 pushed the quick use of eHealth solutions. Due to lockdowns and social isolation measures, HIT was used to provide healthcare virtually via

telemedicine, remote monitoring, and other similar services. Governments across the globe have passed laws to make it easier to get paid for using telehealth, reduce red tape, and increase people's access to medical treatment (Rajamani et al., 2022). As a branch of eHealth, Healthcare IT has the potential to improve patient care dramatically. However, achieving its full potential calls for an in-depth examination of regulatory rules and implementation strategies. To better understand the effects on healthcare systems, the efficacy in fostering eHealth adoption, and the potential for using cutting-edge technology to enhance patient care and community health outcomes, an integrated study will be conducted.

FRAMEWORKS OF IMPLEMENTATION

A contemporary healthcare system can only function with healthcare information systems (HIS), and HIS success depends on well-developed implementation plans. The Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and the Technology-Organization-Environment (TOE) framework are just a few of the implementation models that will be discussed in this section. The essential components will be examined within the organizational domains of planning, management and leadership, realistic expectations, user ownership, collaboration and communication, and learning and evaluation, as well as the dimensions covered in these frameworks and their significance to HIS deployment.

TECHNOLOGY ACCEPTANCE MODEL (TAM)

In the realm of IT and tech adoption, the Technology Acceptance Model (TAM) is a classic framework. In the late 1980s, Fred Davis created an instrument called the Technology Acceptance Model (TAM) that has since become a standard tool for gauging and forecasting consumers' reactions to emerging technologies like Healthcare Information Systems (HIS) (Ghaleb et al., 2021). Let's go more into the relevance of TAM's two basic components in HIS's implementation:

Perceived Usefulness

The perceived utility of a Healthcare Information System refers to the extent to which its potential users anticipate that using the system would improve their efficiency and effectiveness. Perceived usefulness, as it pertains to healthcare workers, including physicians, nurses, and administrators, may be broken down into three important aspects:

Enhanced Efficiency: Quicker and easier job completion is a primary concern for healthcare workers who are considering using an HIS (Enaizan et al., 2023). They want tools that will let them spend less time on administrative tasks and more time caring for patients.

Enhanced Decision-Making: Improved judgement calls may be made with the help of the extensive patient records, clinical protocols, and decision aids that are often housed inside HIS systems. Whether or not the system will help healthcare professionals make more educated clinical judgements and better serve their patients is a major consideration.

Information Access: Patient data, test findings, and medical histories must be easily accessible. Access to relevant data in a timely manner that aids in diagnosis is crucial to the HIS's perceived value (Semwanga et al., 2021).

Engagement of Patient: In certain circumstances, medical practitioners may also think about how the HIS improves patient participation. Patients' access to health information, appointment scheduling, and telemedicine consultations might all be subject to evaluation (Afrizal et al., 2019). For HIS adoption to be effective, healthcare organizations need to address these factors of perceived usefulness to guarantee the system improves the performance of their workforce. One of the most important aspects of HIS adoption change management is convincing users of these advantages.

Perceived Ease of Use

Users' expectations that interacting with the technology would be uncomplicated and simple are at the heart of what we mean by "perceived ease of use." In healthcare, where experts are often pressed for time and dealing with stressful circumstances,

simplicity of use is of the utmost importance (Yusif et al., 2020). Here are users' impressions of the HIS's usability factor:

User-Friendly Interface: Experts in the medical field evaluate the HIS's ease of use to determine how well it caters to patients. They'd want to cut down on training time and complexity as much as possible.

Easy Access to Features and Modules: The system should provide quick access to features and modules. This implies that consumers should be able to navigate the system easily in order to locate what they're looking for.

Error Reduction: The perceived ease of using the HIS includes the expectation that users would experience little error and irritation (Kalayou et al., 2020). Users' faith in technology is threatened by any system that requires continual troubleshooting or workarounds.

Provide Adequate Resources for Training and Support: Ease of use is not just about the design of the system. When users need assistance, they should feel comfortable asking for it.

Overall, the two most important factors in actual HIS usage are how helpful people think it is and how simple it is to use. If healthcare workers see an improvement in their productivity and find the system intuitive, they are more likely to adopt it and utilize it efficiently (Berdik et al., 2021). Involving users in the design phase, offering extensive training, and regularly monitoring and upgrading the system are all important steps that organizations should take when planning HIS deployment to guarantee the system lives up to users' expectations.

UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT)

The Unified Theory of Acceptance and Use of Technology (UTAUT) expands on the TAM to provide a more complete theoretical foundation. It was created by van Gemert-Pijnen et al. (2012) to help us better comprehend the nuances of users' technological adoption and use. UTAUT includes the following four concepts that have been shown to affect users' willingness to adopt and use technology:

Expectancy of Performance

The TAM analogy for expected performance is perceived value. It determines how confident people are that using a certain piece of technology would help them do their jobs better. In essence, it responds to the issue of what advantages people expect to get from using the technology (Kassa & Grace, 2019). Users believe they will save time and effort by using this technology, leading to increased productivity. They anticipate enhanced performance due to the technology. Users hope that the technology will improve their ability to do their jobs, leading to more productivity in work and promotion. Users are more likely to be pleased and inspired to utilize the technology because they anticipate having a positive time doing so.

Expectancy of Effort

TAM's perceived ease of use is proportional to how much effort was anticipated. It gauges how simple or complex people think the technology will be to operate. It basically answers the issue of how simple people anticipate learning and using the technology to be. Users can pick up the technology is considered when rating its ease of use. A simple and basic UI helps people believe that understanding it will be easy. Users evaluate how simple it will be to work the technology into their existing workflows and habits. They have a high opinion of the effort required to use a device that doesn't disrupt their routine. Users choose technologies that need less in the way of mental processing power and mental stress to use successfully (Ismagilova et al., 2019). Users may be put off adopting and utilizing a technology because of its perceived difficulty.

Social Influence

As a measure of the effect of social variables on technological adoption, social influence is illustrative. It recognizes that one's peers, coworkers, superiors, and other social groupings may have an impact on one's own choice to utilize technology. Users are impacted by what they believe to be the social pressure or expectations of other users when it comes to how and when they should utilize the technology (Moullin et al., 2020) . People are more likely to start using it if they are encouraged to do so

by their coworkers or superiors. People are more likely to adopt a new technology after seeing how positively other people are utilizing it. Users are more likely to adopt a new technology after hearing positive feedback about it from prominent people in their social network.

Facilitating Conditions

The availability of resources, support, and infrastructure facilitates the use of the technology. It checks to see whether people have the means to make good use of the technology. In order to make good use of the technology, users require access to adequate hardware, software, learning, and technical assistance. The extent to which an organization backs its employees' adoption of new technologies via policy, training, and a welcoming work atmosphere is a major factor in whether or not such technologies are widely adopted. User perceptions about the adequacy of the underlying technological infrastructure for making optimal use of the technology (Menear et al., 2019). Facilitating circumstances are improved by a stable and effective technological setting.

A thorough understanding of the elements that impact users' adoption and usage of technology is provided by the UTAUT model, which incorporates these four essential constructs: performance expectation, effort expectancy, social influence, and enabling circumstances. By keeping these concepts in mind, businesses may devise winning plans to encourage the widespread use of technological solutions.

TECHNOLOGY-ORGANISATION-ENVIRONMENT FRAMEWORK (TOE)

The TOE framework is a theory that explains how three elements of a firm's context influence adoption decisions at the organizational level. The technological context, the organizational context, and the environmental context are the three elements established by Tornatzky and Fleischer's (Baker, 2011; Tornatzky et al., 1990). Multiple studies have employed these constructs with a considerable degree of reliability and predictability for the adoption of technology innovation.

With regards to HIS deployment:

Technology: Complexity, compatibility, and optimism of HIS technology are important considerations (Baker & Predicting Our Digital Society, 2012). The willingness of using a technology product or service is influenced by the level of technology readiness, where the presence of drivers such as optimism and innovativeness favorably influence the desire to use, while the presence of inhibitors such as discomfort and insecurity adversely influence the willingness to use. The study indicates that healthcare organizations are more likely to accept and implement in their work if they perceive that their adoption readiness for HIS is congruent with their current processes and standards (Ghaleb et al., 2021).

Organization: Ability to teach and assist employees, as well as the organization's overall preparation for and capability to implement change. Factors such as management support and organizational preparedness play an important role in the adoption of HIS by healthcare organizations. Financial support, data skills, data resources, and technical capacity are the four critical aspects that make up the ability dimension (Wang et al., 2018). For every process, funding is essential to provide the necessary human and material resources and to mitigate any potential hazards. Formal training for all staff is necessary to advance the healthcare organization (Vaishnavi et al., 2019).

Environment: Internal processes, market fluctuations, and external partnerships are described within this parameter. According to the TOE model, external factors such as competitive pressure, external support, and government laws play a role in the adoption of HIS. The impact is not always negative and it has been noted that government regulations can be advantageous for hospitals that are trying to introduce new information technology (Chang et al., 2007).

Implementing HIS in its entirety requires attending to these factors inside the TOE framework. Success in adopting a new technology depends on more than simply the technology itself, as this article demonstrates (Hasselgren et al., 2020).

HIS IMPLEMENTATION ACROSS ORGANIZATIONAL DOMAINS

All of the models mentioned above take into account the value of organizational considerations. The strategy for implementation of HIS depends on if the hospital is a greenfield (newer) or brownfield (older) project (Salleh, 2015). Organizations need to think about the following areas for HIS to be successfully implemented:

Planning

Assessment of Needs: The determination of healthcare issues to address with the HIS, and strategic alignment to ensure that HIS objectives are in line with those of the entire organization (He et al., 2021). A hospital that currently utilizes computer modules may consider upgrading to a fully computerized Health Information System (HIS); alternatively, a new hospital may opt to identify the most optimal HIS through the benchmarking process. The initial crucial step is to create policies and procedures that will maximize the efficiency of a computerized system, which is referred to as Business Process Re-engineering.(Salleh, 2015)

Allocating of resources: Putting forward sufficient financial, human, and technological means. The hospitals generally outsource the project implementation to a solutions provider who may further higher experts from various domains to execute the project. However, it is important to employ experts in fields related to Digitalized Analysis and Process, Medical Data sharing, Regulation and Operations to overlook the preparatory, implementation and execution phases of the HIS project. (Lu et al., 2021)

Management and Leadership

Leadership Commitment: Manifesting top-down backing for the adoption of HIS. The allocation of initial planning, oversight, and facilitation duties could be given to an individual or a limited group of individuals. However, a more effective approach would be to establish a Project Steering Committee. The involvement of high-level executives, including the Chief Executive Officer, Chief Information Officer, and Head of Clinical Governance, is crucial to the success of the HIS project.(Salleh, 2015)

Management of Change:. Preparing strategies to cope with inevitable workplace changes in HIS. To begin a successful transformation, it's crucial to communicate the significance of change. The automated clinical process differs from the manual workflow and an optimizing workflow may improve HIS application effectiveness. To enhance the automated workflow and manage changes, BPR should be implemented prior to HIS and continuously applied even after HIS implementation. To successfully implement BPR, it is crucial to comprehend and incorporate factors such as organizational personnel, culture, motivation, leadership, and past performance into the vision and execution.(Khodambashi, 2013)

Realistic Expectations

Realistic Goals Setting:. HIS implementation requires realistic objectives and timetable. The staff is constantly burdened with the weight of HIS expectations, leading to frustration, burnout, and high turnover rates. The worst possible outcome for HIM is the depletion of patient care resources and time, leading to negative patient outcomes and low satisfaction levels. The optimal situation would involve dedicating additional time and resources towards meeting expectations. (Ayatollahi et al., 2016)

Communication Expectation: Making sure everyone is on the same page with these objectives and plans. To maintain effective communication with the contractor/solution provider, the facility assigns a coordinator with experience in project implementation. Inefficient workflows are caused by inadequate communication among staff, resulting in unclear roles and objectives.(Salleh, 2015)

User Ownership

Engagement of User: Participation of actual users in design, evaluation, and decision-making is known as "user engagement.". During the initial implementation period, there was more emphasis on installing the system rather than engaging users and optimizing use. The research by Cresswell et al (2016), suggests the necessity of a long-term model of user engagement that takes into account the potential concerns of

different user groups and utilizes various strategies to address them over time.(Cresswell et al.)

Training and Support: Adequate user training and consistent assistance are provided. Studies have indicated that training enhances system utilization, fosters user comfort with its usage, and consequently promotes its acceptance. Empirical evidence demonstrates that training is highly correlated with various factors, including (a) system usage and improved decision-making, (b) increased efficiency and effectiveness of users, (c) heightened satisfaction of users, (d) positive attitude of users, and (e) success of information system.(Ajami, 2012)

Communication and Teamwork

Interdisciplinary Communication: Collaborating across healthcare disciplines, or "interdisciplinary," is encouraged.

Communication Channels: Making sure there are direct lines of communication and feedback is crucial.

Evaluation and Learning

Consistent Learning: Promoting an environment where people are always trying to develop and learn more.

Measures of Success: Establishing metrics to measure HIS's effectiveness. The evaluation of successful HIT implementation typically involves measures such as HIT adoption, technology acceptance, and clinical quality. The primary metric, HIT adoption, evaluates the frequency at which healthcare systems have opted to allocate resources toward EHR implementation. The adoption rate is commonly used to indicate the percentage of healthcare organizations that have incorporated EHR functionalities or capabilities that are relevant to patient care. Patient mortality, adverse drug events, or readmission rates are all part of the third metric of Clinical Quality Measure.(Yen et al., 2017)

Understanding TAM, UTAUT, and TOE, as well as the related dimensions, is required for effective deployment of Healthcare Information Systems. Planning, management and leadership, reasonable expectations, user ownership, collaboration and communication, learning and assessment, and usage of HIS

effectively are all aspects that need to be carefully addressed by organizations. Both healthcare providers and patients may benefit greatly from HIS adoption with the help of the guidelines provided by these models.

THE UNITED NATIONS POLICY AND GOVERNMENT STRATEGIES

The context of Healthcare Information System (HIS) adoption is heavily influenced by government regulations and international efforts. The iterative-incremental management strategy, privacy laws, World Health Organisation (WHO) Europe initiatives and plans, and the strategies of specific countries like Ethiopia, Bhutan, and Fiji, and broader regions like Africa and the Middle East are all discussed in this section along with their impact on HIS implementation.

The Iterative and Incremental Approach of Management

Governments are showing a dedication to flexibility, adaptability, and responsiveness in the healthcare sector by adopting the iterative-incremental management strategy in Healthcare Information Systems (HIS) initiatives. In order to successfully adapt to changing healthcare requirements, HIS must be developed and deployed in a manner that facilitates continuous iteration (Bhaskar et al., 2020). Let's dissect the iterative-incremental methodology used in HIS projects, including its advantages and disadvantages and how the government has adopted it.

Adoption of Government

Governments that choose the iterative-incremental strategy show that they understand the ever-changing nature of healthcare through their dedication to agility and responsiveness. They concede that the needs for healthcare are always evolving; thus, the tried-and-true methods of project management may need to be revised. By taking this approach, governments show they are serious about coordinating HIS growth with the changing demands of clinicians, managers, and, most crucially, patients. This implies that HIS solutions are adaptable to new medical procedures, shifting regulations, and rising standards of care.

Advantages

One of the major benefits of the iterative-incremental strategy is that it facilitates ongoing user input throughout the project. Users are allowed to contribute comments, recommendations, and concerns at different stages as HIS solutions are created in smaller, manageable increments. By incorporating input from many sources, the system may be fine-tuned to meet the requirements of the healthcare industry. The iterative-incremental strategy mitigates risk by dividing the project into manageable chunks and checking in on progress at regular intervals. Early detection and correction of problems reduce the likelihood that they may grow into serious concerns that interrupt healthcare services or put patients at risk (Sharma et al., 2020) . The HIS solutions that are built using this method are flexible and will continue to be used for years to come. Rather than starting from scratch, the system may be tweaked and expanded to meet the evolving needs of the healthcare industry. This flexibility means that the HIS can develop in tandem with the healthcare industry, which is crucial for ensuring the HIS's long-term viability.

Challenges

It takes time and energy to keep up with constant changes and revisions. Both monetary and human resources are needed since a specialized group with the ability to create and test quickly is needed. For this strategy to be successful over the long term, government agencies must be willing to commit sufficient resources to it. The appropriate balance between adaptability and stability might take a lot of work to achieve. The iterative-incremental method has the advantage of flexibility, but it may also bring uncertainty if not handled correctly (Bruns et al., 2019). While making room for required adjustments, governments must keep key operations and data security rock solid. Constant updates may be a headache for healthcare organizations' change management departments. Regular adjustments to the HIS may be necessary for healthcare workers. Transitions may go more smoothly with the help of effective change management tactics, including training and communication.

Flexibility, ongoing user input, reduced risk, and lasting relevance are just a few of the benefits of an iterative-incremental strategy in HIS initiatives. However, it also raises issues with how to manage change best, allocate resources, and strike a balance between adaptability and stability. Governments must design and manage their HIS programs meticulously to get the most advantages while minimizing any negatives.

Privacy Laws and Regulations

When it comes to HIS implementation, privacy laws and regulations are crucial in protecting the privacy and security of patients' medical records. The General Data Protection Regulation (GDPR) in Europe is one example of a regulation that reflects worldwide norms while yet being specific to a single country.

Compliance with regulations: Governments must implement and enforce stringent privacy regulations to safeguard individuals' health information (Kaplan, 2020). Implementing HIS successfully and retaining public confidence need strict adherence to these regulations.

Data Security: Compliance with privacy rules necessitates that HIS implementations include data encryption, access restrictions, and auditing measures.

International Collaboration: In order to ensure that domestic privacy legislation is in line with international norms and best practices, governments may work with international groups like the United Nations and the World Health Organization (Ramirez-Rubio et al., 2019).

WHO's Initiatives and Plans for Europe

HIS actions and strategies in Europe have been mostly driven by the World Health Organization's Regional Office for Europe (WHO Europe). These efforts have a common goal: to enhance healthcare via improved data gathering, analysis, and application.

Health Data Digitalization: WHO Europe advocates for the widespread use of electronic health records (EHRs) and health

information systems among its member nations (Park et al., 2020).

Compatibility: Efforts are being made to guarantee HIS system compatibility, which will allow for more fluid cross-border data sharing and interchange.

Building Capacity: Through training and technical assistance, WHO Europe helps member states improve their HIS capacities as part of its capacity-building activities (Busse et al., 2019).

Strategies at the National and Regional Levels

Ethiopia: The country's national eHealth strategy details its plans for HIS rollout. Interoperability, infrastructural growth, and the utilization of telemedicine to treat underprivileged populations are all focal points of the plan. Ethiopia's national eHealth strategy describes the country's plan to enhance healthcare delivery with the use of digital tools. The plan's emphasis on interoperability means that diverse healthcare systems and technology will be able to communicate with one another without any hitches. Ethiopia plans to improve its healthcare infrastructure by, among other things, expanding the number and quality of its healthcare institutions, as well as increasing access to related technology and equipment. The approach places a premium on telemedicine as a means of providing healthcare to underprivileged communities, especially those living in rural regions (Clayton et al., 2019). Through the use of modern communications technology, telemedicine has made it possible for doctors to examine and treat patients via telecommunication.

Bhutan: The goal of Bhutan's eHealth Master Plan is to expand access to healthcare in underserved regions by digitizing health records, facilitating the use of telemedicine, and setting up a national Health Information Exchange (HIE). The purpose of Bhutan's eHealth Master Plan is to improve access to healthcare in neglected areas. The plan's stated goal is to digitize health records, making it simpler for doctors and nurses to access patient data and provide timely treatment, even in more out-of-the-way locations (Kebede et al., 2020). Bhutan plans to use telemedicine to improve healthcare access for

people living in rural areas by connecting them with medical experts via video calls. A nationwide Health Information Exchange (HIE) will improve patient care by allowing various healthcare providers to share patient information safely.

Fiji: Strengthening HIS infrastructure, improving data quality, and fostering knowledge about digital health among healthcare professionals and the public are all priorities in Fiji's Health Sector Strategic Plan. The Health Information System (HIS) in Fiji is a primary target of the country's Health Sector Strategic Plan. Fiji is working to improve the foundation upon which its Health Information System rests in order to facilitate more effective data management and exchange. To facilitate evidence-based decision-making in healthcare, it is essential to enhance the quality of health data (Doubova et al., 2021). Awareness and comprehension of healthcare technology may be fostered via the plan's emphasis on educating healthcare professionals and the general public about digital health.

Africa: The African Health Strategy has been implemented by several African nations, and it places a premium on HIS development as a tool to expand access to quality healthcare for everyone and increase disease monitoring (Cornelius, 2022). Multiple African countries are implementing the African Health Strategy, which emphasizes HIS development as a critical instrument for improving healthcare. The plan's goal is to ensure that all Africans, including those living in remote or underdeveloped regions, have access to high-quality medical care. The approach emphasizes using HIS to improve disease monitoring and surveillance, which in turn enables quicker responses to health risks and pandemics.

Middle East: The Middle East is home to some of the world's most forward-thinking eHealth initiatives, with nations like Saudi Arabia leading the charge to digitize healthcare data, advance telemedicine services, and guarantee effective healthcare administration. When it comes to eHealth efforts, the Middle East is well out in front, due to large part to countries like Saudi Arabia. To better manage patient records and safeguard sensitive information, healthcare data is increasingly being digitized, with the Middle East at the

forefront of this movement. Developments in telemedicine are increasing the availability of medical treatment for those living in rural or disadvantaged locations (Kesse-Tachi et al., 2019). Healthcare systems in the Middle East are becoming more responsive and efficient as a result of efforts to centralize and digitize administrative operations.

Finally, UN efforts and national regulations play critical roles in determining how healthcare IT is implemented. Iterative and gradual management approaches, privacy legislation, WHO Europe programmes and goals, and regional and national policies all play a role in expanding the reach and use of HIS. Improving healthcare outcomes on a global scale will need more HIS adoption, which in turn requires collaboration between governments, international organizations, and healthcare stakeholders.

DISCUSSION

The incorporation of information technology has become essential in the rapidly changing healthcare system in order to increase the quality of care provided to patients, decrease the time spent on administrative tasks, and boost the overall effectiveness of medical services. Government policies and implementation mechanisms must be properly integrated to realize these goals (Ebener et al., 2018). Government policies and various implementation frameworks are discussed in this article; these frameworks include the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), the iterative-incremental management approach, privacy laws, and initiatives from the World Health Organization (WHO) in Europe. Government policies establish the legal and regulatory framework for HIS deployment. They provide the groundwork for tackling issues of data privacy, security, compatibility, and standardization, all of which are crucial to the widespread use of HIS.

The legal framework in which the policies of the government define HIS functions. They define standards for information gathering, archiving, dissemination, and access. These rules are critical to preventing any misuse or disclosure of sensitive patient information. HIS handles important patient health

information, which must be protected against unauthorized access (Organization, 2021). In order to ensure the privacy of its citizens, governments have enacted regulations like the Health Care Portability and Accountability Act (HIPAA) in the United States and the General Data Protection Regulation (GDPR) in Europe. Trust between patients and healthcare professionals can only be established with the help of these rules and laws.

The usage of standardized medical record formats, medical language, and data-sharing protocols is typically required by law or regulation. Interoperability across HIS systems relies on standardization, which makes it possible for healthcare professionals to share and collaborate with one another's data without any hitches (Ouedraogo et al., 2019). User-focused models like TAM and UTAUT (Unified Theory of Acceptance and Use of Technology) investigate the mental processes involved in adapting to new technologies. They try to figure out how people will react to and utilize HIS.

Perceived value and perceived ease of use are the two main components of the Total Appreciation Model (TAM). The perceived utility of a technology measures how its users feel it will improve their productivity and efficiency. Users' expectations for how simple and trouble-free the technology will be to use are measured by its "perceived ease of use." These ideas are crucial to the success of HIS implementation. Healthcare workers need to believe that HIS will help them do their jobs better, such as by facilitating better patient care collaboration and decision-making (Hailu et al., 2023). The system should also be straightforward to use to reduce user pushback.

Performance expectation, effort expectancy, social influence, and enabling conditions are the four new elements that UTAUT introduces in comparison to TAM. Evaluating how simple or complicated it seems to use a piece of technology is what effort expectancy does. The concept of social influence recognizes the importance of colleagues' and superiors' thoughts on the topic of technology adoption. In contrast, the concept of conducive conditions evaluates the accessibility of resources and assistance.

Professionals in the medical field have high hopes that HIS will help them make better decisions, expedite their procedures, and provide better results for their patients. Developing an HIS that is both easy to use and effective is crucial, and the concept of effort expectation highlights this point. The concept of social influence highlights the importance of coworkers and superiors in promoting HIS adoption (Mekebo et al., 2022). In contrast, the importance of conducive environments is highlighted by the necessity for sufficient resources and support. Because healthcare requirements are always evolving, iterative-incremental management is used. This method divides large HIS initiatives into more manageable chunks, facilitating ongoing adjustments to meet the needs of a changing healthcare system.

Flexibility is essential in the ever-changing field of medicine. Because of this iterative and gradual method, HIS can adapt to meet the ever-evolving needs of the healthcare system. Healthcare providers don't have to stick to a single blueprint but may instead adapt their methods to suit the requirements of their patients better as they arise. One of the main advantages of this method is its efficiency. The potential for expensive mistakes and service interruptions in healthcare is mitigated by rolling out upgrades in smaller, incremental chunks. System performance and relevance may be continuously improved by iterative fine-tuning in response to user input. The iterative and gradual strategy, although flexible, might require a lot of time and effort. Financial, human, and technical resources from governments are required to provide regular upgrades and revisions (van Gemert-Pijnen et al., 2012). Maintaining a healthy equilibrium between adaptability and stability is crucial. While flexibility is an asset, it can't come at the expense of keeping vital features and sensitive information safe.

Given the sensitive nature of patient health information, compliance with privacy rules is essential in HIS deployment. Safeguarding sensitive patient information requires stringent data security procedures, as mandated by privacy legislation. Compliance with privacy requirements requires a number of measures, including encryption, access

restrictions, and auditing tools. Data breach reporting methods and data protection officers are two examples of legislative requirements that healthcare organizations must implement in order to remain in compliance with government rules. There is a wider view of HIS implementation due to the actions of WHO's Regional Office for Europe (WHO Europe). The digitization, interoperability, and capacity development of health data are emphasized. Efficient data collection and use are made possible by the widespread use of electronic health records (EHRs) and health information technology (IT), which WHO Europe actively promotes among its member states (World Health Organization, 2021). Data sharing and transfer across international boundaries is made possible via interoperability. To guarantee that HIS systems can work together efficiently, WHO Europe encourages interoperability standards.

WHO Europe provides technical support and training to member states as part of its commitment to capacity development. Capacity-building helps medical staff make better use of HIS technology. Healthcare Information Systems can only be widely used if government policies and execution frameworks are coordinated. Privacy, security, and uniformity in data handling are guaranteed by a legal and regulatory framework laid forth by the government (Moullin et al., 2015). HIS is user-centric, flexible, and efficient because of implementation frameworks, including TAM, UTAUT, and the iterative-incremental method. Data security and trust are ensured by privacy regulations and a worldwide perspective on best practices is provided through WHO Europe's efforts. Advancing HIS adoption and bettering healthcare outcomes on a global scale requires the joint efforts of governments, international organizations, and healthcare stakeholders.

CONCLUSION

Healthcare is becoming more data-driven, making it critical that HIS be implemented effectively. This research has set out to investigate in depth the interplay between official policies and implementation frameworks, both of which are crucial in determining how widespread the use of HIS will be. To sum up,

achieving harmony between these factors is crucial if healthcare is to enter a new age of effectiveness, high standards, and individual attention. HIS relies heavily on governmental policies as its foundation. Privacy, security, and uniformity in the healthcare industry's use of data are all safeguarded by the legal and regulatory framework they offer. Instilling faith in patients and healthcare professionals that their data is secured and utilized for the improvement of healthcare, these rules are more than just recommendations; they are the foundation of trust and confidence in HIS. Regulations like the General Data Protection Regulation and the Health Insurance Portability and Accountability Act (HIPAA) have imposed rigorous rules on how medical records must be managed. Following these rules is not merely the right thing to do; it's also a moral imperative to protect the confidentiality of patient's medical records. Through their policies, governments have recognized the need to protect sensitive information against intrusion and breach.

Both government policy and implementation frameworks guide HIS adoption. When it comes to figuring out and foreseeing how people will accept and utilize technology, two models—the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Utilization of Technology (UTAUT)—stand out as guides. By emphasizing the needs of the user, these frameworks have shown the way towards widespread usage of HIS. TAM and UTAUT serve as a reminder that the conviction of healthcare professionals that HIS improves their performance and streamlines their workflows is crucial to the success of HIS. Ease of use, both actual and perceived, is a major component in reducing adoption resistance. UTAUT goes beyond TAM by highlighting the significance of other factors, including the impact of peers and enabling environmental factors. The adoption and use of HIS are influenced by a number of factors, each of which plays a distinct function.

The iterative-incremental management strategy has become a shining example of flexibility and efficacy in the dynamic field of healthcare. With this method, HIS may adapt to meet the ever-evolving requirements of the healthcare system. There is no denying that healthcare systems would benefit from

constant user input, reduced risks, better resource allocation, and fewer service interruptions. This method has its challenges, however, since it requires careful management of resources and a fine balance between adaptability and stability. There is a more global view on HIS implementation due to the efforts of WHO's European Regional Office (WHO Europe). The global community agrees with their priorities of digitizing health data, fostering interoperability, and strengthening institutional capacities. Through these efforts, we are reminded of the necessity to standardize health records, guarantee smooth data sharing, and provide healthcare workers with the knowledge and skills to navigate the rapidly evolving digital healthcare world efficiently.

Integrating government policy and implementation frameworks effectively is not an intellectual exercise but rather a revolutionary process that may radically alter the healthcare system. To build a healthcare ecosystem that is effective, secure, and patient-centered, governments and healthcare organizations must work together, taking insight from these policies and frameworks. Protecting patients' personal information is a top priority for any policy. To promote HIS acceptance, implementation frameworks should have an emphasis on user-centric design and simplicity of use. HIS may adapt to meet the ever-evolving demands of the healthcare system with the use of an iterative, incremental methodology. Last but not least, efforts like WHO Europe's that include international cooperation may provide a global view of best practices. The future opportunities where healthcare professionals use data to improve patient care, people feel secure in sharing their information, and healthcare systems are flexible and adaptable. In a new age, healthcare delivery is marked by HIS as a paragon of hope, innovation, and quality by synthesizing government policies and frameworks for its implementation.

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