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Pepperdine University

Graduate School of Education and Psychology

ADOPTION OF THE HEALTH INFORMATION EXCHANGE (HIE) SYSTEM AND THE ROLE OF THE HEALTHCARE LEADERSHIP

A dissertation proposal submitted in partial satisfaction

of the requirements for the degree of

Doctor of Philosophy in Global Leadership and Change

by

Muhammad Faisal Ashfaque

July, 2020

June Schmieder-Ramirez, Ph.D. - Dissertation Chairperson

This dissertation, written by

Muhammad Faisal Ashfaque

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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DEDICATION

This dissertation is dedicated to knowledge seekers globally and for the betterment of humanity.

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VITA

Educational Background

Ph.D. Pepperdine University July 2020

MS+MBA+MPA CSULA March 2010

BS CIS+IT CSULA March 2008

Employment Background

Independent Healthcare Consulting **02/11 – Present**

Principal-Managing Partner

- Client Engagement, Business Expansion, Client Management, Executive Engagement
- Performed services as interim CEO, COO, and CIO, created, run and managed complete C-Level Suite- Provided Board Member Services to various clients
- Worked with multiple clients identifying their business needs
- Worked with Providers such as Hospitals, Acute Care facilities, Adult daycare facilities, Senior Citizen Care facilities to identify their business needs by Performing market analysis to pith is to sell business (services) such as Business Management, Project Management, and other related services to clients.
- Performed Market segmentation for clients by working on Strategic Business plan for their business needs, including performing a SWOT analysis of their business analysis.
- Opportunities included looking at new business expansion areas for the client. Threats analysis included looking over any competitors in the market.
- The above techniques have been applied to most of the healthcare clients from Provider and a particular payer company to perform GAP assessment, which meant where they are in their business needs and where they would optimally like to be as a target mark.

- Lead cross-functional teams in developing and implementing client services and lead client interviews, workshops, and industry research through secondary and primary resources
- Managed the development and presentation of final client deliverables
- Oversaw the quality of client engagements and the development of staff
- Successful Project management & implementation of numerous critical I.T. and Business-related projects and additional internal validation & compliance requirements.
- Worked on New Health Care Management System Design and Implementation.
- Working with L.A. County- with all Urgent Care and other health facilities (large scale projects).
- Senior Information Technology Project Manager for entire I.T. Infrastructure and I.T. people Management responsibilities.
- Managed, planned, organized, and directed the activities of complete projects
- Managed multiple complexes (different budgets) IT-related systems implementation projects, including I.S. Infrastructure Management
- Managed and ran projects in entire US., networked with different (I.T. and Non - I.T. related) clients and produce business with them

WOW, Global Corporation **11/09 – 02/11**

VP of Healthcare I.T.

- Started and ran the entire transaction from the beginning on the western coast of the United States
- Managed full business operations and logistics in the west coast region of the U.S.

- Networked with different (I.T. and Non- I.T. related) clients and produce business with them
- Managed entire office dynamics for the west coast office and led several people at the workplace. Worked on EMR system deployment. EHR Implementations were federally mandated, which fulfilled the meaningful use requirements and also increased the workflow of various healthcare organizations.
- Planning, analysis, education, and implementation of Cerner with ancillary HNA Millennium application
- Implementation of EMR / EHR system
- Perform (UAT's) and (SDLC) for implemented system/s for users

Planet Aid **01/10 - 11/10**

Director of I.S. Project Manager

- Design facilities drawings for expansions of local business – locally, Los Angeles region.
- Configured and managed Windows Server 2008 whole system.
- Managed user accounts via Active Directory Domain Server Setup.
- Maintained entire office local area network and several clients on the network
- Perform (UAT's) and (SDLC) for implemented system/s for users
- Maintained and managing e-mail accounts to every user via Outlook and Exchange Server
- Created and implemented different Information systems applications by using SDLC process

Rent-A-Ceo **08/08- 01/10**

Healthcare-IT Senior Project Manager

- Worked on New Health Care Management System Design and Implementation – EMR System
- Managed the data gathering requirements from hospital staff "individually and carefully" for their needs and requirements for the New EMR (Electronic Medical record) systems
- Interfaces included EpicCare®, IDX and SunQuest Laboratory, and Radiology, Cerner along with ancillary
- Directed the daily operations for Highmark-affiliated practice divisions and departments within 30+ physical locations, including three large multispecialty facilities (Monroeville, Greentree, and Robinson Primary Care Centers, Allergy/Immunology, Cardiology, Endocrinology, Gastroenterology, OB/GYN, Occupational Health, Oncology, Podiatry, Psychiatry, and Radiology, as well as Rural Health Clinics and Medical Information
- Worked closely with medical researchers in the areas of biotechnology and EMR technologies
- Involved in designing, development, testing, implementation, and standardization of the existing and newly selected healthcare system
- Managed various EMR / EHR deployment projects across various Acute care facilities and completed them successfully
- Managed three Project Managers under me for the complete EMR implementation
- Perform (UAT's) and (SDLC) for implemented system/s for users
- Direct involvement in proposed systems designs to ensure that the system is scalable in the future as needed and recommended/ mandated by the local and federal government (Department of Health and Human Services)

- Worked on and managed all RFP's, RFQ's, SOW's for IT-related complex projects from different vendors

RPM Talent Agency **08/08– 08/09**

Sr. IT PM and Executive Business Consultant

- Analyzed Business Information technology needs
- Provided Project Management support for the implementation of the ERP system for the entertainment industry
- Managed and supervised twelve people working towards the development and implementation of ERP
- Managed and provided customer service for ERP and analyzed, designed, tested, and implemented a new advanced system and perform a supervisory role in that area.
- Managed hardware configuration, the system architecture of software application and assessment of all assets as needed by the business(es)
- Comprehensive business ERP system remodeling and upgrading responsibilities
- Responsible for acquisition, development, implementation of complete Information system (Computer Systems) deployment, SAGE system deployment and other large to midsize system

Cedars Sinai Medical Center **04/04 – 08/08**

Imaging Dept Project Management Analyst

- Multi-user application aided customer service representatives and nurse advice agents in more effectively managing members' messages for laboratories, pharmacies, and physicians
- Provided customer service via face-to-face and phone to patients, staff, and medical providers

- System testing, integration and deployment responsibilities of PACS to EPIC integrated modules
- Learn and teach doctors of newly implemented Siemens imaging software and provided complete I.T. support to the radiology staff.
- Managed Siemens, Epic along with ancillary, QUADRIS and worked on mitigation planning

Computer Works, Inc **07/02 – 08/08**

Senior IT-Project Manager

- Supervised five Information Technology Technicians and several contract technical personnel.
- Process and analyzed large, midsize and small businesses information technology needs and services Evaluation
- Acquisition, development, implementation of large and midsize business process system across the clientele
- Administers and maintains the complex database, including backup, recovery and other capacity planning

ABSTRACT

The advancement in technology calls for improvement in service delivery in healthcare systems, especially in the present health pandemic of the COVID-19. At present, healthcare systems utilize several electronic health techniques. However, there is a need for the creation of interoperability that can assist healthcare organizations in exchanging data more effectively through the global adoption of healthcare information exchange (HIE). The current research examines the adoption of HIEs and healthcare leadership roles to realize a fully functional interoperable patient HIE. This study utilized the systematic document analysis method to review qualitative data on the different aspects of healthcare leadership, implementation of HIEs, professional development, and the benefits of Healthcare Information Exchange to the organizations that use HIEs. The study analyzed data using the NVIVO-12 software and identified four major themes, namely: *HIE Project Implementation, Healthcare Management, and Professional Development, HIE Systems are Beneficial for Operations with Technology being the Critical Factor,* representing all four research questions respectively. The analysis of these themes revealed that leadership plays a crucial role in the implementation of HIEs. Federal and state policies are significant elements that affect HIE implementation at the organizational level. The analysis revealed that healthcare professionals need opportunities to enhance their knowledge in core areas to their healthcare organization's success.

Additionally, HIEs are beneficial across all levels, including national, organizational, and patient levels. The current research recommends a focus on leadership skills, enhanced careers, and collaboration between professions to improve the implementation of effective HIEs used across all healthcare organizations. The current study also calls for future research on the adoption of a standard health information exchange technology that can be used globally by all healthcare facilities and health providers to help manage the global health pandemic.

Chapter 1: Introduction

Health Information Exchange (HIE) involves making it possible for the information within the healthcare sector to be moved electronically from one organization to the other, and from one region, community, or healthcare facility to the other. In a broader application, HIE may also be used to refer to firms that help to ensure that the information is exchanged across the various platforms in need of such data (Kash et al., 2017). HIE offers the capability for the clinical information to be moved electronically among the different healthcare information systems (Hohmeier et al., 2017). The primary purpose of the adoption of the exchange of patient data is to enhance the access to such information by the attending doctors and to retrieve such information so that the clinicians can offer safe as well as a timely, equitable, understandable, efficient, and effective care for the patient (Janakiraman et al., 2017). Moreover, the HIE also helps the government agencies to analyze the health status of the citizens within their jurisdictions as it may also be exceedingly helpful to monitor the spread of the current global health pandemic such as COVID-19.

The exchange of patient information through the electronic health system facilitates the efforts that the clinicians, as well as the physicians, put in the treatment of the patients. As they try as much as they can to provide high-quality care that is both of high standard and continuously improving to help address the world health crises in different parts of the globe (Janakiraman et al., 2017). Moreover, as the healthcare professionals continue to use the electronic system to share the patient data, they also make efforts to provide a continuity of care, such that the patient can be attended to in every part of the world (Van de Wetering & Versendaal, 2018). On the other hand, the secondary users of the healthcare information also benefit from HIE (Martin, Clarke, et al., 2018), for example, due to the reduction in the expenses that could result from the lack of electronic information transfer (Walker et al., 2005). For

instance, such costs include those that result from manual printing, or scanning the documents and sending them through fax from one organization to the other, the expenses that result from the ink and paper, and the cost of maintenance of all the machinery used in such processes (Sadoughi et al., 2018). Moreover, the HIE has also reduced the expenses that result from the mailing of the patient records and charts, as well as phone calls made to verify the identity of the patient, referrals, and the giving of test results (Heyde, 2018). Furthermore, the system has helped to reduce the time wasted on all the processes that connect the patient data as provided in one healthcare facility and the other.

A study conducted at Sushoo Health Information Exchange reveals that the cost of patient data exchange is high and may improve due to the numerous cases of diseases (Manogaran et al., 2017). According to the study, at the time of research, the healthcare organizations spent $17,160 for inpatient information exchange per year per doctor or a physician (Targowski, 2011). However, currently, the healthcare organizations are continuously providing platforms as well as the improved function of HIE, at both independent and regional levels. In most cases, these healthcare firms are supported by the statewide HIE companies in conjunction with the Office of the National Coordinator for Health Information Technology (Vest, 2017). Such established firms were allowed by the national and international laws to be part of the HITECH provided in the American Recovery and Reinvestment Act of 2009 (Cappers & Scheer, 2018). The organizations that follow these large firms, known as Regional Health Information Organizations (RHIOs), are defined based on their locations and are developed and managed by contractual conventions as well as terms of operations meant to provide and maintain a high standard of Health Information Exchange (Vest et al., 2017).

In both the Federal and State formations within the United States of America, there are not yet conclusively defined Health Information Exchanges and Health Information Technologies

(HIT). The Federal guidelines, as well as the programs meant to provide incentives like the "Meaningful Use," are significantly enhancing the adoption of the HIE in most healthcare organizations (Reisman, 2017). In addition to the new changes that come from the Federal programs, the understanding and acceptance of the progressive implementation of State-sponsored HIEs similar to that found in some states like North Carolina state-sponsored HIE system in which state bears the financial burden of HIE implementation and the nature in which the healthcare regulations fluctuate based on the different levels of government of each state results in further enhance the refinement of the HIEs (Kharrazi et al., 2018). However, despite these fluctuations, the HIEs and RHIOs still strive to make it possible for self-sustainability, although most of the healthcare organizations are always linked with either the federal or the state government or are independently funding their operations.

Similarly, a useful HIE has well-defined data architecture (Seebregts et al., 2018). In particular, two main models exist (Lessard et al., 2017) in the architecture of data management concerning the HIE (Balsari et al., 2018). The original architecture is the federated, also known as the decentralized model (Braunstein, 2018), while the secondary architecture is the decentralized model (Kumar et al., 2018). However, some architecture models contain the elements of both the federated and the centralized models (Brisimi et al., 2018). The main feature of the centralized architecture is that it has a master database from which all the copies of the health records can be obtained for any particular patient enlisted within the HIE (Balgrosky & Thomas, 2019).

On the other hand, the federated architecture has no central database for the storage of such patient data; however, the respective hospital is charged with the responsibility for maintaining the health records of each of their patients (Esposito et al., 2018). As a result, the federated architecture facilitates the health providers with the patient information and mandates each firm

to share such information from their links whenever other healthcare providers require such information (Li, 2017). Therefore, in the decentralized model, the HIE records are electronically transferred among the care providers when they need such patient information (De Pietro & Francetic, 2018). However, in the centralized model, the patient is supposed to upload the data to a single database where the healthcare provider can download the full medical record of the patient.

All the HIEs in the USA have to operate only when the patient consent to share such information in conjunction with the Health Insurance Portability and Accountability Act (HIPAA) and other state and national legal provisions (Hazard, 2017). Two methods can be used to gain the consent of the patient (Kautsch et al., 2017). The first is the explicit consent where the patient is not necessarily or officially signed up into the HIE hence has to submit a written request to have access to the exchange platform (Abouelmehdi et al., 2018). The second method is implicit patient consent, also known as opt-out (Shenoy & Appel, 2017). In this type of consent, the patient provides implicit permission to get into the exchange platform at the point such a patient agrees to use the healthcare services of the provider sought at any particular time. The health provider then submits the data into the exchange and signs their notice of privacy principles (Sakshaug et al., 2016).

History

The essence of the healthcare patient information exchange (HIE) initiative is to enhance access to pertinent data, which can be used to make informed decisions. Before its adoption, healthcare professionals relied on the feedback offered by the patients (Krousel-Wood et al., 2018). In such a situation, the risk of medical errors was enhanced following the lack of sufficient understanding of a patient's medical history (Paterick et al., 2018). In awareness of this risk, there was a need for a system that augmented access to medical records across different

healthcare providers (Zizzo et al., 2017). Thus, the HIE initiative plays a critical and fundamental role in the modern healthcare environment.

Aside from this, the HIE is also endeavored at achieving patient empowerment in the contemporary healthcare setting. According to Wan et al. (2018), the competitiveness of healthcare providers hinges on their ability to satisfy patients in the course of care provision. Taking this into account, it has become necessary to implement strategies to achieve this objective. In essence, the HIE initiative is geared towards including patients in the decision-making process (Menon et al., 2020). Consequently, healthcare providers can achieve stakeholder collaboration. Ideally, the objective is to include various care providers and patients when determining the most potentially practical treatment approach.

Fundamentally, HIE can improve the overall quality of the patient care service provision, albeit when effectively adopted. According to Akhlaq et al. (2017), effective information sharing is correlated with reduced risk of medication and medical errors. Additionally, the design of the HIE systems avails an avenue for educating consumers on their care needs, especially about potential alternatives (Kooij et al., 2018). Thus, the association between this initiative and the efficiency of care provision is evident. Principally, HIE is an integral component of a strategy aimed at improving healthcare standards. Taking this into account, the value of collaboration amongst various healthcare organizations is apparent.

Background

Healthcare Information Exchange (HIE)

Healthcare information exchange networks allow health practitioners to retrieve and share patients' medical information securely. The implementation of HIE is a fundamental process that revamps the quality of patient care and patient safety (Aldosari, 2017). This interoperability of data in an automated fashion has been the goal of the Health Information

Technology for Economic and Clinical Health Act (HITECH) for over two decades to achieve a healthier population that is subjected to fewer to nil medical errors (Pletcher et al., 2018). The potential of HIE in improving the healthcare system cannot be ignored.

The objectives of HIE include but are not limited to; incorporating Electronic Health Records (EHR) in laboratory results (Sittig et al., 2018), ePrescribing, surveillance and monitoring of clinical data (Keasberry et al., 2018), and processing information on clinical care summaries (Kasemsap, 2017). Although advancements in medical technology have been instigated, healthcare providers have lagged in adopting the practices to process patient information. EHR is an electronic document containing details of the patients, such as demographics, medical history, diagnoses and progress, immunizations, and laboratory results (O'Donnell et al., 2018). Kelly et al. (2018) date the electronic health records from the 1960s, where computer-based medical records were introduced. The introduction was meant to provide patients with quality nursing care on an ongoing basis. Although EHR systems have proven predominant inefficiency and easier retrieval of data, the system requires routine maintenance, troubleshooting, and perform regular updates to the EHR system (Dubovitskaya et al., 2017). Healthcare providers interact more with patients and are, therefore, considered reliable in maintaining the safety of the patients' data and information (Schaepe & Ewers, 2017). Transparency, during information exchange with patients, will ensure that they apprehend their health information comprehensively since individuals will be able to make sound decisions (Sahi et al., 2017). Help care providers, through learning their patients' behaviors, perceptions, and preferences can provide them with automated options that will improve their resilience (Weaver et al., 2016).

There has been an extensive backlash and skepticism on healthcare information exchange in terms of the evolving technology (Kulynych & Greely, 2017). Experts have argued that the

system requires integration across various technologies that are being unearthed every day. The sophistication of the HIE technology and its components need its users to keep abreast of emerging trends. In essence, it means that soon, the radical approach in medical technology concerning patient information exchange will involve the synergetic cooperation of systems and technologies for better and safer quality services.

Health Information Exchange Models

On a continuum, the leadership and governance in healthcare organizations have developed models that ensure the needs of the involved stakeholders are met, consequently influencing their inclination to share information.

Centralized Model. In this architecture model, standard data formats and standardization processes are integrated into a centralized data clinical data repository system (Loukides et al., 2015). Data are aggregated from numerous sources and integrated into a central hub. The clinical data respiratory (CDR) is managed by the HIE authority or the respective stakeholders (Esmaeilzadeh & Mirzaei, 2018). An example of this is when individual providers or member hospitals in the same region utilize a centralized architecture in the same location. The hospitals, therefore, share and transmit patient information to the CDR, where any member hospital quickly retrieves it upon the request of the patient (Braunstein, 2018). The data are consistently updated to ensure the health information system in all member hospitals is upgraded as per the patients' medical needs.

This model is preferred because it is simple and easy to retrieve data processes since community networks all have access to the central authority. The uniformity of data ensures that the HIE responds to data at high speed since information is not searched from external locations (Moscoso-Zea et al., 2018). The consolidation process in the centralized model is made conducive since the technique of updating, reporting, and research is elementary.

Notwithstanding the denumerable pros, such as having access to data at a central and easily accessible location, the model has various cons. Data stored in the CDR is susceptible to security infringements and attacks from unauthorized users (McAlpine et al., 2019; Thomas, 2019). Since the data are from multiple locations, centralized authority is considered a high-value target. Setting up the system and maintaining it is exorbitant. Setting up the servers require multiplex channels that are expensive to implement and support.

Federated Model. In this type of model, healthcare providers prefer to have control over the patient's data. Once the query is made to the master point index, the record locator service searches the information which is stored and managed locally in the available CDRs (Loukides et al., 2015). The lack of a central data standardization process means that data are only moved within the EHRs available regionally through secured networks and VPN connection while ensuring security in cloud computing (Al-Sharhan et al., 2019). The data are only shared among the participants of HIE using the Master Patient Index, which is a system that contains unique patient identifiers such as name and social security number. It has all the information of registered patients and uses algorithms to respond to queries from the provider (Zhang et al., 2018).

The benefits are unveiled from the function of the federated model. The institution has complete control over its data reducing risks of sabotage and security breaches (Wilding, 2017). In case of an infringement, it is attributable to a particular provider or institution. HIT administrators prefer this model over the monolithic model since institutional data are assembled in real-time; hence, accuracy is warranted (Kruk et al., 2018). The model encumbers various challenges related to interoperability as it requires sophisticated technology to set up remote locations that contain clinical data. The complexity in the retrieval of the data requested may be

caused by the lag time between requests and receipt of data (Liang et al., 2017). Lag time affects the accuracy of data as the data may arrive in bits of information at different times.

Hybrid Model. The hybrid patients' information exchange model combines centralized and federated architecture models in their HIE implementation. The data are stored in a central data respiratory but for an infinite amount of time. The hybrid model is the future of health information exchange as it provides a spectrum of services that involve local and regional HIEs (Adjerid et al., 2018). In one variant, regional CDRs are created under a centralized model, and then supra-regional or national patient registry is created from these CDRs (Kim et al., 2017). The exchange that occurs ensures that information is vividly shared among enterprises, institutions, and providers accurately and efficiently (Califf, 2018). In the hybrid model, there is the maintenance of the master patient index and the record locator service; hence, policies are required to facilitate the data exchange.

The core advantage of this custom model is that a CDR can be segregated from the rest once a participant decides to leave the system; therefore, it does not comprehend the remaining patients' privacy. The participating members have ownership of their data and particularize how it can be utilized in the exchange. The model is flexible and meets participants' needs by offering a wide range of references in terms of techniques with which they want to exchange data. The constraints arise when the obligation to maintain, manage and update the necessary information surface.

Healthcare Leadership

For several years, leaders in the healthcare sector have notable shifts towards becoming more consumer-centered in their service delivery (Edmunds, 2019). In modern-day care delivery, such efforts may not be sufficient to meet the healthcare demands of the increasing population that face diverse challenges of health-related problems. In a time of industrial disruption as well

as the continued innovation, it appears that the healthcare sector did not quite conceive innovations. There must be significant changes in the strategy employed by healthcare leaders in the way in which they run the industry so that the healthcare offered can meet both the quality and relevance of healthcare that meets the patients' expectations (Ginter et al., 2018). The future leadership in healthcare involves the creation of consumer-centered healthcare firms and critical thinking that focus on the three main areas that lead to the transformation of an organization both at present and in the future. These include transparency in terms of the price of the services and the quality of data, the technology used with the patient management and engagement, and personalized delivery of care services (O'Brien & Mattison, 2016).

Culture and practice are some of the critical aspects that are salient in healthcare. Barr and Dowdling (2019) describe the importance of recognizing the ethnic, gender, and ability diversity in staff and patients since it is useful in exchange for information. Recognition of these differences in leadership matters because communication styles are an essential element of getting messages through to people (Tsai & Men, 2017). Leadership in healthcare is reflected by the leaders 'dispositions and temperaments that make them visionary, role models, anticipatory and accountable, proactive, and enhancing effective communication throughout the institution (Gopee & Galloway, 2017).

More often than not, leadership is mistaken for management, but in a real sense, they are two separate entities within the organization (Adner, 2017). On the one hand, leadership influence and articulate direction in visions, missions, and tasks to achieve a specified goal; while on the other hand management determines the goals that need to be performed while ensuring tasks are allocated effectively (Borkowski et al., 2016). In healthcare, for instance, leaders are supposed to provide for ways through which the sector can respond to the emerging issues and how these issues can be met in a useful and timely manner (Vosper et al., 2018). In

the wake of increasing technology and drastically growing populations, it becomes quite a challenge to handle the patients and address their needs more effectively. Moreover, the increase in the number and diverse nature of diseases leads to more complex healthcare management. Leaders have to come up with the best solutions that handle all these problems.

Leadership in Healthcare may also work through collaboration with other leaders in different departments, in conjunction with the federal, state, county or local governments health departments to achieve long-term healthcare goals, and in particular, to address the problems that arise from emerging diseases such as cancer and other tropical diseases, which result from several combined issues (Henderson et al., 2017). While it is also true that leaders often strive to solve the problems, it is also critical to realize that such efforts made by the leaders may have to be supplemented by other state and federal health departments to ensure lasting healthcare outcomes.

Global Healthcare Leadership

Any officers leading a multinational organization in healthcare are supposed to be open-minded in their operations of the organizations since diverse and complicated environments often characterize such organizations (Hajro et al., 2017). As a result of the adoption and the expansion of healthcare firms in different countries around the world, the need for leaders has increased for the last two decades (Achtenhagen et al., 2017). However, due to the numerous challenges experienced as a result of globalization has necessitated the shift in various processes and conducts of global leadership. Leaders in charge of multinational healthcare organizations need a different repertoire of characters to help them overcome the numerous difficulties that arise from their leadership positions, mainly, the advancement of technologies, labor market dynamics, and cultural differences and the immigration that have made multiple parts of the world composed of almost every member culture (Saldana, 2017). The modern-day firms have complex and

ambiguous operational circumstances as a result of global pressures. Therefore, leaders who led multinational healthcare facilities have to improve their skills, abilities, as well as their knowledge of the various activities that are necessary for the running of the organizations; they lead for them to meet the needs of all the healthcare stakeholders.

Global Leadership has been understood as a form of classical leadership that deals with global aspects of leadership since the first concept emerged in the early twentieth century. Although the term has gained new understandings in various academic fields, still, global Leadership has not been fully understood (Reiche et al., 2017), hence making it quite debatable when approached from multiple empirical analyses since up to the current moment, there is no sufficient research conducted on global leadership to establish its academic stance. Therefore, studies need to be undertaken in this area to help in understanding the concept, particularly the processes involved with global leadership. Because of insufficient research in global leadership, it becomes quite challenging to find a specific definition for such a term that is still controversial, notably among scholars in different fields (Whitaker & Greenleaf, 2017). However, based on the roles that global leaders play in their daily operations, it is possible to reframe a definition that may suit such functions and describe the concept. For instance, the roles of global leaders, such as bringing different changes in the operations of the multinational organizations, handling complicated interpersonal relationships due to the multicultural environments they operate in, and their handling of new technologies to address the vast diversities in the organizations across the globe beyond their domestic environment, hence they are operating in a global market.

Effective Global Healthcare Leadership

Based on the definition of global leadership, and effective global leader would be one whose operations lead to the realization of the organizational needs in the multinational aspect (Heath, Martin, Shahisaman et al., 2017). Such leaders meet all the assessment criteria for

abilities to lead and operate an organization in different countries. Therefore, these leaders can efficiently work with diverse people, irrespective of their cultural backgrounds (Ramsey, Rutti, et al., 2017).

Healthcare global leaders should possess the superior qualities that compare with other successful global leaders in other sectors. One of the main characteristics of global leaders is that they have project credibility (Coleman & MacNicol, 2016). Once they possess project credibility, global leaders have to demonstrate authority in the magnitude of senior executives while at the same time giving priority to the emotional intelligence with all the stakeholders in the health sector. In essence, a global leader should be able to balance both the vertical leadership pivot as well as the horizontal leadership pivot (Karthikeyan, 2017). Leaders who possess a perfect horizontal pivot, in which trust is built by establishing a bilateral trust (by trusting others and giving opportunities to be trusted), earn both the trust and the respect from those they work are likely to succeed in their global venture. However, the leaders who pivot well vertically; that is, those who have convinced their superiors and juniors of their capabilities to advance the organization are more likely to do well in global healthcare leadership.

Secondly, global leaders possess a quality of inclusiveness. According to Van et al. (2019), universal healthcare leaders must change the methods of work from a command-and-control approach to an inclusive one. Doing this will ensure that their process of unleashing ideas and spurring the collective efforts of team members, and the ultimate solution of the problem that occurs within a particular firm, and across other firms or branches of a healthcare organization in other regions. Global leaders can do this through inquiring and listening to the workers at different levels and provide feedback that calls for action, thus facilitating a constructive argument that leads to the collection of advice and implementation of the feedback (Mendenhall et al., 2017). Moreover, to further advance the attainment of the goals, global leaders must

maintain regular contact with the members of the team and share the credit for the success of the teams (Allen et al., 2019). Such global leaders are risk-takers and possess disruptive thinking (Christensen et al., 2015).

Effective communication forms one of the main ways through which global healthcare leaders can work successfully in their leadership (Laureani & Antony, 2017). Such leaders know the best ways through which they can communicate with each of the stakeholders at every level of the organization. Moreover, global leaders are also effective in communicating across all the markets and industries (Thompson & Miller, 2018). This quality of the leaders can help to meet the organizational need for a useful HIE, where such an exchange platform can be quickly adopted across the different regions (Warrick, 2017). Although the approach can differ from one leader to the other, the main goals for the communication comprise the leader to either state their conclusions or make their teams follow or guide their followers and team members to their intended outcomes.

Finally, global leaders have to win sponsorship. For example, the adoption of a worldwide Health Information Exchange may not be easy for most firms, partly because of laxity or cost of both purchase and maintenance. Therefore, global leaders should be strategically placed to ensure that they can solicit for funds that can help drive the goal of adopting global HIE (Chakravarthy & Yau, 2017). Moreover, they should also be able to convince the international leaders to accept and stimulate the debate on the adoption of the patient information exchange based on the intended outcome (Tremblay, 2017). It is also important to note that it is complex to navigate various global structures, particularly among upcoming global leaders. However, for them to attract sponsors, such global leaders have to be sponsors of some of the projects so that they can call others to ongoing processes. Moreover, they must select top performers to lead the development of the organization and secure a good future for the leaders

in the company beyond the borders of their control by seeding high-potential talents (Lee., 2018). With these strategies, global leaders can be better placed in a position in which they can be both mentors and influence others to take to leadership roles.

Setting

The foundational objective of the study is to determine the role of healthcare leaders in enhancing the success of HIE initiatives. Thus far, the inability to exploit the associated benefits of the systems compels a need for problem identification. In this way, it has become possible to propose effective recommendations. Primarily, the data should also offer an understanding of the interplay between workplace policies and the effectiveness of the HIE systems. It is essential to determine the current situation pertaining to the HIE systems to identify enabling and delimiting factors.

Additionally, the data needs also to yield an understanding of the unexploited potential for enhanced HIE effectiveness. Thus, the focus is on collecting data on how the adoption of this initiative improves the functionality and operational efficiency of a healthcare organization. Therefore, a systematic, logical, and strategic collection of relevant healthcare technology-related case studies based on a set criterion offers an avenue for collecting relevant data, thereby ensuring the overall validity and reliability of the findings.

Statement of the Problem

When adopted in a perfectly balanced and optimal setting, that is, modeled on or aiming for a state in which everything is fully functional, the HIE system can immediately improve the quality of care provided to patients. The enhanced access to information will enable care professionals to make informed decisions. Additionally, the patients will be empowered to influence the choice of treatment approach. However, barriers inherent to the organizational and the healthcare environment impede the realization of these objectives.

Governance issues and technological barriers hamper the ability to achieve the goals associated with HIE implementation. Consistent with the findings of Williams et al. (2017), organizational policies adopted by different healthcare providers impede collaboration. For example, the focus on competitive advantage creates barriers to collaboration because of the potential risk to the bottom line. To some degree, healthcare firms may view patient data as a source of security for future business (Golden et al., 2017). While the rationale supporting this viewpoint is understandable, there is a need to change this perception as it impedes the success of HIE. Aside from governance issues, there is a need for proposed solutions to technological barriers. Primarily, healthcare providers use different HIE systems developed using unique platforms. In such a situation, the sharing of patient data becomes challenging.

The adopted HIE platform also poses a potential challenge towards the successful collaboration between the pertinent healthcare stakeholders. Currently, there is a variety of community, enterprise, and vendor HIE systems (Vest, & Kash, 2016). Each of these is based on different fundamental designs. While community HIE is open to all stakeholders, enterprise HIE encompasses critical partners to ignore the need to include the competition (Wager et al., 2017). On the other hand, the vendor HIE offers support services to customers only. In essence, the integration of these three different system designs creates a challenge for healthcare leaders. Thus, there is a need to determine the potential avenues that stakeholders can employ to enhance collaboration across the different HIE platforms.

Purpose Statement

The purpose of the current study is to identify the role of leaders in enhancing the success potential of HIE, especially in building collaboration amongst the pertinent stakeholders. Specifically, the intention is to determine how governance theories can be used to create an environment of cooperation between partner organizations. On the technical aspect, it is

necessary to determine how organizations using different HIE platforms can be integrated to establish data-sharing connections. In this way, it can become possible to offer solutions to both governance and technical issues.

The study is necessary for awareness of the various challenges impeding the success of HIE in the modern healthcare setting. Despite being in existence for some time, both patients and healthcare professionals have been unable to achieve enhanced collaboration (Akhlaq et al., 2017). The perpetuation of this trend will mitigate the role of HIE in the modern environment; therefore, taking this into account, it is essential to conduct a study that identifies enabling and delimiting factors.

In addition to this, the study has investigated how leaders can sustain the competitive advantage of their organizations despite establishing partnerships with other firms and pertinent stakeholders. In essence, the underlying challenge of HIE is the fact that healthcare organizations perceive an association between patient data and competitive advantage. Additionally, the enterprise and vendor HIE platforms are pegged on competition, thereby complicating the ability to achieve collaboration. Therefore, an effective solution is one that identifies this challenge and offers a potential solution addressing the needs of each pertinent stakeholder.

Research Questions

The adopted research questions focused on identifying the enabling and delimiting factors as well as the opportunities for HIE in the modern business environment. Ideally, the findings of the study need to offer valid and valuable recommendations for addressing the challenges faced by business leaders of healthcare organizations. Fundamentally, the conclusions should satisfy the needs of the patients, the associated healthcare organizations, and the vendors; hence, taking this into account, the following research questions have been adopted in the study

and their answers have been addressed by analyzing various documents as part of case studies, based on qualitative research approach.

Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?

Question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?

Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?

Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?

Significance of the Study

This study endeavors to offer recommendations to business leaders on how they can enhance the success of HIE by enabling collaboration amongst stakeholders. Currently, healthcare organizations work in silos, which hampers the sharing of patient data. Taking this into account, the findings of the study should empower leaders to make informed decisions to address the factors impeding the success of HIE initiatives in the modern setting. Primarily, the objective is to offer recommendations on how healthcare business leaders can address the governance issues plaguing the progress of information sharing and patient empowerment.

Aside from this, there is also a technical issue that needs to be addressed to enhance cross-platform collaboration of service providers. Currently, information sharing amongst the three HIE platforms is quite limited, which limits the benefits that the pertinent stakeholders can

gain (Osei-Frimpong et al., 2018). In awareness of this challenge, the study endeavors to identify potential solutions to this challenge. Specifically, the aim is to offer a solution to the issue while enabling healthcare organizations and vendors to sustain or gain new sources of competitive advantage. In essence, the solution to the technical issue should not impede the sustainability of the adopted business models. Moreover, this study should add depth to various professional literature that exists in the field of health information exchange by adding a unique angle of healthcare technology and healthcare leadership collaboration. Finally, as healthcare technology and overall health information exchange is expanding, it is imperative to have comprehensive research conducted at this time to focus on the above stated technical and leadership challenges in the healthcare industry at large.

Limitations, Delimitations, and Assumptions

Limitations

One of the core limitations of this study is the use of a single case study organization, which limits the degree of generalization of the findings. Ideally, the recommendation should empower leaders of healthcare organizations to enhance the success of the HIE systems. However, the current study can only achieve this objective up to a certain extent. Fundamentally, the resource limitations impede the ability to feature healthcare organizations operating in different jurisdictions. For instance, future studies should feature healthcare organizations that have a global presence. In this way, the degree of generalization of the study findings can be enhanced by a significant margin.

Delimitations

The current study has specific delimitations that enable the research to concentrate on the most critical sections of the study to ensure that the outcome closes in on the issue under investigation. This study is mainly designed to unravel healthcare leadership roles in the

successful adoption of the HIE system in the local and the global context. Because of the sensitivity of this issue, the research has taken a more in-depth approach to every section of the entire study. The research questions are limited to only four and address specific areas that are relevant in HIE. These questions form the basis for the research in such a way that the review of literature has been conducted around these particular areas.

Moreover, each research question has led to the definition of specific research objectives, thereby ensuring that at the end of the study, the study can result in a valid outcome that can be used by the various stakeholders in the healthcare sector as well as in healthcare information technology. Moreover, the study has used a specific research design and approaches that are only meant to satisfy the objectives of the research.

Assumptions

The assumption is that all of the pertinent stakeholders are ready and willing to improve the functionality and efficiency of the HIE systems. One of the challenges addressed by this study is the integration of three different HIE platforms. In finding a solution, it is essential to have the support of the three platforms. In essence, the absence of this support system can impede the effectiveness of the proposals the study has offered. Therefore, the relevance of the findings pegs on this critical assumption. Additionally, another assumption is that the leaders of healthcare organizations are also ready and willing to collaborate with their partners.

Definition of Terms

CMS: Centers for Medicare & Medicaid Services

HIE: Healthcare patient information exchange

Governance: The combination of pertinent workplace policies

HIE platforms: Environments around which the communities, enterprises, and vendors operate.

Health Information Technology for Economic and Clinical Health Act (HITECH): it is a guideline formulated to promote both the adoption and meaningful use of Health Information Technology within the USA (Adler-Milstein & Jha, 2017).

Interoperability: It refers to how various information systems, as well as software applications, communicate and transfer data from one place to another (Tran, 2017).

Integrity: refers to the ability of healthcare data to remain in its original structure, possess its initial characters, or remain in storage or rest. The system adopted must be able to protect the data from modification or corruption from malware or intentional changes from the individuals who access such data (Marin & Goga, 2018).

Health Information Management (HIM): it refers to an allied profession in healthcare, which is responsible for clinical data availability, accuracy, and protection. The management systems are needed to ensure that the leaders make decisions that are appropriate to the healthcare setting (Wager et al., 2017).

Electronic Health Record (EHR): it a system of storage of patient information in such a manner that it conforms to the national provisions, thus enabling interoperability standards application. As such, it can be created and managed by professionals and clinicians for the purpose of data storage and retrieval when needed (Vuokko et al., 2017).

Patient Health Information (PHI): The demographic data, medical records, test and laboratory outcomes, conditions of mental health, insurance data, and other information collected by healthcare professionals for patient identification.

WHO: World Health Organization.

Leadership: it is an act of guiding a group of people or an organization

Organization of the Study

The insight obtained from the review of literature is necessary to determine the course of data collection. The intention is to identify gaps in the current research as well as determine the future trends of HIE. In this way, the analysis has been designed to add to the existing body of knowledge while offering recommendations aligned to the current leadership and HIE trends. Aside from this, the data collection approach focuses on the current role of leaders in the healthcare setting while simultaneously establishing the ideal HIE situation. Thus, the recommendations offer a means of how leaders of healthcare organizations can bridge the gap between the current and the envisioned situation.

The dissertation is organized in five chapters as follows;

Chapter 1; constitutes the introduction and background of the research, as well as the research objectives.

Chapter 2; is the literature review, where previous studies on the research topic have been critically analyzed. The second chapter of this study is the review of literature that discusses past research that has investigated the association between leaders of healthcare organizations and the HIE systems. In essence, the aim is to establish gaps in the literature, which confirm the essence of the study.

Chapter 3; is the methodology chapter, where the researcher details the data collection strategy and the methods, as well as a justification of these methods. The third chapter, the methodology, highlights the approach to data collection and analysis. Additionally, the strategy used to ensure that research ethics has also been emphasized.

Chapter 4; is the results and analysis chapter, where the collected data are analyzed. The fourth chapter features the results section, that depicts an analysis of the collected data. All of the featured results correlate with the adopted research questions.

Chapter 5; is the discussion chapter, where the results and discussed and triangulated with the results obtained in the literature. The fifth chapter discusses the findings of the study concerning the insights gained from the review literature as well as the adopted research questions.

The final section is the conclusion, and this is the section that offers a synthesis of the findings gained from the analysis of data. Additionally, it also provides recommendations to the leaders of healthcare organizations.

Chapter Summary

Health information exchange entails moving information within the healthcare sector electronically from one organization or healthcare facility to the other. HIE is also used to refer to firms that help to ensure that the information is exchanged in various platforms in need of such data (Kash et al., 2017). The primary purpose of the adoption of the exchange of patient data is to access and retrieve such information by the attending doctors so that the clinicians can offer efficient and effective care for the patient (Janakiraman et al., 2017). The secondary users of the healthcare information also benefit from HIE (Walker et al., 2005) due to a reduction in expenses that could result from a lack of electronic information transfer (Martin, Clarke, et al., 2018). These expenses come with manual printing, scanning documents, and sending them through fax (Sadoughi et al., 2018).

A study conducted at Sushoo Health Information exchange reveals that the cost of patient data is increasingly high (Manogaran et al. 2017). The healthcare firms are supported by the HIE companies in conjunction with the Office of the National Coordinator for Health Information Technology (Vest, 2017). In particular, two main models exist in the architecture of data management concerning the HIE (Balsari et al., 2018; Lessard et al., 2017).

The essence of the healthcare patient information exchange (HIE) initiative is to enhance access to pertinent data, which can be used to make informed decisions. Prior to its adoption, healthcare professionals relied on the feedback offered by the patients (Krousel-Wood et al., 2018). Taking this into account, it has become necessary to implement strategies to achieve this objective.

Healthcare information exchange networks allow health practitioners to retrieve and share patients' medical information securely. Healthcare providers interact more with patients and are, therefore, considered reliable in maintaining the safety of the patients' data and information (Schaepe & Ewers, 2017).

Health information exchange models include the centralized model, federated model, and hybrid model. When adopted in a perfect setting, that is, modeled on or aiming for a state in which everything is complete, the HIE can immediately improve the quality of care provided to patients.

Governance and technological barriers hamper the ability to achieve the goals associated with HIE implementation. The adopted HIE platform also poses a potential challenge towards the successful collaboration towards the pertinent healthcare stakeholders. There is a need to determine the possible avenues that stakeholders can employ to enhance cooperation across the different HIE platforms.

The study is necessary for awareness of the various challenges impeding the success of HIE in the modern healthcare setting. The main purpose of the current study is to identify the role of leaders in enhancing the success potential of HIE, especially in building collaboration amongst the pertinent stakeholders.

The adopted research questions focus on how the healthcare organizations implement HIE systems, What role healthcare leaders play in enhancing collaboration amongst the various

stakeholders, What competitive advantages from the use of HIE systems for healthcare organizations, How management influence different professionals in the HIE adoption and finally how leaders create a better collaboration strategy with the vendors and other stakeholders on the adoption of the best HIE systems that comply with various policies.

The study endeavors to offer recommendations to business leaders on how they can enhance the success of HIE by enabling collaboration amongst the pertinent stakeholders. One of the core limitations of this study pegs on the focus on the use of a single case study organization, which limits the degree of generalization of the findings. For instance, future studies should feature healthcare organizations that have a global presence. In this way, the degree of generalization of the study findings can be enhanced by a significant margin.

The assumption is that all of the pertinent stakeholders are ready and willing to improve the functionality and efficiency of the HIE systems. Another assumption is that the leaders of healthcare organizations are also available and willing to collaborate with their partners.

Chapter 2: Literature Review

Introduction

This chapter is a review of various studies that have been conducted in the past based on global leadership in the adoption and expansion of healthcare information exchange. In this chapter, the literature focuses on the research conducted by different scholars in the role of leadership in the development of an area of knowledge, a business, or a concept. The study also focuses on the analysis of the research conducted in healthcare administration in the local context, on how the local leadership practices expand to cover the entire global market. The literature review is essential for the current research as it gives it the background upon which the study answers the research questions. For instance, the healthcare leadership section helps to understand leadership principles that help with the implementation of HIE systems. Secondly, understanding the roles of various healthcare professionals, in particular, the role of healthcare information technology professionals, is essential since it enables the current study to determine how each health worker collaborates in the strategies meant to expand patient healthcare information exchange.

This study is guided by four research questions that address leadership in general, healthcare leadership, information technology leadership, and the global healthcare information technology governance, which seeks to answer the advantage that results from the use of HIE.

Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?

Question 2: How does healthcare management influence doctors, nurses, health IT professionals and other key workers to adopt HIE?

Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?

Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?

Moreover, the review is also necessary as it exposes the different areas that the past research did not address, hence help with clearly defining gaps that this study attempted to bridge.

Leadership

Leadership is one of the areas that have called for the attention of most scholars as it is essential in the success of every business carried out in any specific area or niche. Scholars, such as Gill and Benatar (2016), show that leadership is a critical factor in addressing global health factors. Leadership plays a conspicuous place in the realization of the various goals of the business in any organization (Grint et al., 2016; Klenke, 2016). All the multiple stakeholders are kept under check based on the type, and the nature of leadership practiced within the organization. Furthermore, organizations also differ in their methods of leadership, depending on the industry.

In healthcare, leadership is critical as it leads to the realization of the various healthcare objectives. In both global and local healthcare leadership practices, the focus is mainly put on the improving of the quality of health as well as on the coming up with new strategies that can help solve the complex variables in the business setup (Gopee & Galloway, 2017; Warren et al., 2016). Various governments of different nations put their primary focus on the need to work on the critical areas with the help of all the stakeholders in healthcare within each of these territories

(Braithwaite et al., 2017; Kostkova et al., 2016). On the other hand, international bodies such as the World Health Organization (WHO) puts a keen interest in the manner in which the countries contribute to global healthcare (WHO, 2016). The organization focuses on pulling together all the leaders in the various capacities in the global context to ensure that their departments are often at the forefront in providing that the international health goals are obtained.

Historical Overview of HIE

Various strategies can be used to ensure that any particular health goal is achieved. One of the primary strategies involves the use of health information from other areas. Mostly, this system consists of the exchange of patient information within different health centers as well as within different countries (Peterson et al., 2016). The Health Information Exchange system is one of the most effective ways towards advancing the healthcare outcomes for the individuals living in any given region or in any particular setting where such patient information is exchanged (Yuehong et al., 2016). However, although the information regarding the patients is exchanged between different systems and hospitals, the data of the patient remains under safe security, hence upholding the safety standards. In turn, the system helps to protect the identity of the patient, but at the same time helps to improve the quality of healthcare.

Although some healthcare information exchange systems cause problems in the handling of the patient information, the international healthcare information exchange system dictates that such information should be exchanged through an electronic means so that the data can rely on the intended person in the proposed healthcare organization or research center (Eden et al., 2016). Moreover, the system should also be in a position of delivering the expected patient information to all the users in different parts of the world, as long as these users require such information.

Most healthcare systems in the United States, Canada, the United Kingdom, China, and Japan, among other developed countries, have healthcare systems that are quite structured and organized. However, in all these countries, the success of the healthcare information exchange does not depend upon the structure or the stability of their system; instead, it relies on the leadership of the healthcare organizations, as well as the healthcare systems, hence the sharing of the patient information among the users in the most secure and at the same time, one that ensures ultimate confidentiality (Bryant, 2019; De Souza et al., 2016). As a result, the healthcare system is secure by protecting the patient's health records from the possible attacks from hackers.

The healthcare industry comprises of working professionals who are from various skilled backgrounds, and it becomes vital for the patient information to be readily and securely available in a secure healthcare patient records exchange platform/system. A fully interconnected and advanced exchange platform puts the different healthcare professionals into developing new and sophisticated technologies that help with addressing the new kinds of diseases or disorders that may be new to a particular environment (Coccia, 2017). For example, a patient in one country may experience health problems that have never occurred in another country, hence making the other country to find ways to prepare for such emergencies. For example, most of the health issues originate from the African countries where the technologies are still low. However, when their health information is shared with other healthcare professionals in developed countries, they can quickly develop systems that can handle such new forms of diseases (Kaper et al., 2018). As a result, the exchange in the patient information helps the healthcare sector to be prepared to face the impending infections of disorders.

The cooperation among the different healthcare professionals is essential to ensure that the patient information exchange can be of more significant help to the health sector. By cooperating, healthcare professionals develop the best practices in every situation (Cogin et al.,

2016). Moreover, effective leadership also plays a crucial role in creating a sustainable patient information exchange system that can provide quality services, one that shows compassion to the suffering patients, and one that is safe and hence can handle the problem without causing much harm to the patient, to the staff, and other stockholders within the healthcare system, as well as the public. However, these all rely on the culture of the hospital, which can only be changed for the good under effective leadership (Elliott, 2017). Therefore, leadership provides the roadmap used by other staff members who align themselves with the goals or the objectives set by the leadership.

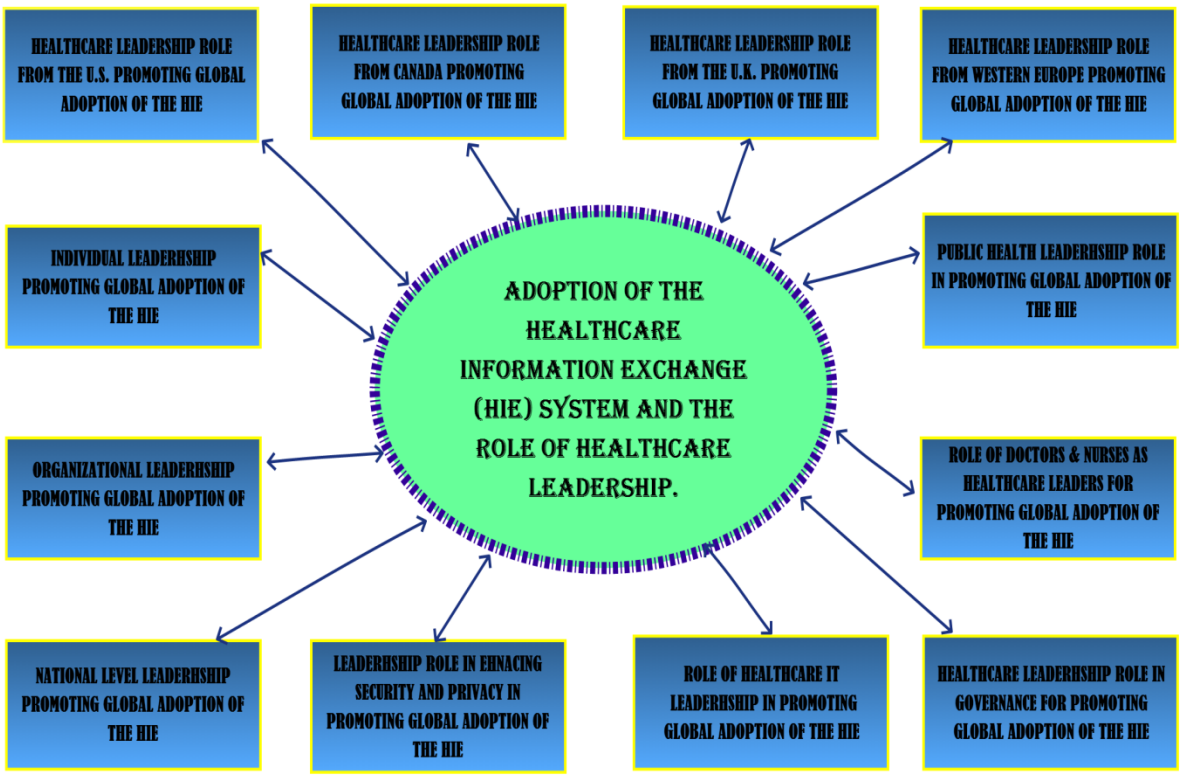
By setting the goals of a healthcare facility or system, the leadership helps in the enhancement of the commitment of the members and, at the same time, helps them align their individual goals with the mission and the visions of the health facility (WHO, 2017). When the work strategy aligns the individual goals with the organizational goals, it helps to develop the integration as well as the coordination of the different tasks conducted by the healthcare professionals (Nelson et al., 2017). This may call for the need for team members whose personal goals may be similar and who may find it easy to work with each other, hence help in building their individual goals, but at the same time, fulfilling the goals of the healthcare system. Each member may be tasked with a particular responsibility, whereby it is their mandate to deliver the required healthcare feedback (Cogin et al., 2016). Therefore, the leadership depends upon the level of operation, whether it is a personal healthcare firm or a private healthcare goal; hence, the one responsible has to align his or her own goals with the objectives of the healthcare system. It can be in team control, or organizational control, but may also extend to national leadership. Moreover, it may also involve the worldwide leadership, as for the case of the WHO.

Theoretical Framework of the Study

In the development plan of any system, the theories form the primary ideological approach upon which a working system can be formulated (Hargett et al., 2017). In the case of the roles of healthcare leadership in the global adoption challenges of the health information exchange, the theoretical framework is based on the various factors that lead to the realization of such characters that aid in the understanding of such roles. In the figure below, the theoretical framework for the roles of leadership in HIE is formulated with each factor contributing to the realization of the functions. For example, the following figure graphically displays connections of 12 leadership roles that have been considered in explaining the elements of the adoption of the HIE system. Moreover, healthcare leadership roles are directly connected to drive the adoption of HIE systems; For example from healthcare leadership role from the US promoting HIE adoption, healthcare leadership role from Canada, healthcare leadership role from the UK, healthcare leadership role from Western Europe are some of the roles that have been based on leadership theories, therefore, influence the adoption of HIE system. Finally, from the roles of the leadership, it becomes easy for this study and the subsequent studies to understand the place of leadership in the realization of the global leadership operation of the patient information exchange systems.

Figure 1

Theoretical Framework Diagram for Adoption of HIE



In the above theoretical framework, each rectangle boxes are the representation of sub-categories that provide direction the feeds to various roles played by each focal point in the worldwide adoption challenges of the Patient (HIE). All the categories are aligned with the main topic of the research, which is to unravel healthcare leadership roles in global adoption challenges of the patient (HIE).

Healthcare Leadership

Team Leadership

In the study of leadership, one of the main characteristics of successful leaders is those who lead through teams. Patient health information (PHI) is one of the critical information that should not be shared with any external personnel, as such information may put the patients at

risk (Hassidim et al., 2017). Therefore, it calls upon the various healthcare safety leaders to work collaboratively. For instance, a team of experts has to be set apart to ensure that the quality of care provided to the patients, as well as their safety, is given the main priority. In most cases, such leaders are taken from the Health Care Organizations (HCOs) senior team leaders and are responsible for the measures to adequate patient safety and the underlying metrics (Chapman et al., 2014). Such leaders can meet such responsibilities by developing the indicators of patient safety as well as quality that are obtained from the various databases and monitored before and upon realizing the initiatives intended by the leadership (Murray, 2017).

Leading through teams helps in the global realization of the collective goals. Team leaders possess various characteristics that distinguish them from individual leaders (Dong et al., 2017). For instance, team leaders have a strategic perspective in which they possess a clear view of the future of the healthcare facility and the healthcare sector. Their deep experience in work and their cultural knowledge enable them to understand the various factors that may change the operations of the healthcare sector both in the economic aspect as well as in the technological and health outcomes (Wang et al., 2018). As a result, these leaders engage their teams to the formulation of a long-term view of healthcare, hence formulating a broad strategy and translating it into a concept that has realistic and achievable goals. Secondly, team leadership has a particular concern for patients (Jangland et al., 2017; Makic & Wald, 2017). They focus on the patients and understand their main concerns and model the patient information exchange systems in the best ways in which such a system can address the patients' needs and the need of the health sector to improve the health outcomes in a given area of concern (Carman & Workman, 2017). The leadership approach considers itself as partners in assisting the patients and, in turn, has the patients' full trust in the healthcare system. Moreover, team leadership has the highest capacity to spot trends and connect the existing dots to effect a change that acts in the best

interest of the health sector (Charles Jr et al., 2017). For instance, when such a healthcare leadership system looks at the same data that others have, they identify particular issues that others easily ignore as not very relevant.

One of the best ways through which team leadership results in the success of the organization is through reflection (Alizadeh et al., 2018). In most cases, the team members have to take some time off from their regular duties to reflect upon the systems. The primary purpose of the reflection is to come up with the best possible information exchange systems that can improve the way the organization operates or the way the patients perceive the platform (Thomas et al., 2017). Furthermore, when the team members take some time out, the time for reflection instills in them the positivity required in the performance of the work which in turn helps in their optimism, efficacy, and mutual support in their quest to realize quality healthcare (Fulop et al., 2019; Trinchero et al., 2019). Since the primary focus of any healthcare system is supposed to enhance health outcomes in the whole world, the exchange of data helps in coming up with the best strategies for the management of some particular diseases. A team leader, however, forms the most conspicuous position in the leadership structure as he or she ensures that all the team leadership members work within the confines of the goals and objectives of the health sector or a specific healthcare facility.

Each member of the team of leaders plays a vital role in the overall goal of the leadership. Since the team leaders are tasked with ensuring that the healthcare center offers quality and safe services, then each of the leaders performs specific duties that are clearly defined. The leaders may be the heads of the various departments, which broadly implies that they have an understanding of the sectors they head; thereby, the knowledge of the healthcare industry makes them align the operations of the department with the leadership defined outcomes (Graban, 2018). As a result, the leaders engage each of their departmental staff in the constructive

discussions that are aimed at achieving the ultimate health quality and patient safety outcomes, hence improving the care at the departmental level (Mathews et al., 2017). In turn, when such goals are achieved at the departmental level, the overall health center achieves the best healthcare outcome and may also extend to global healthcare improvement.

Organizational Leadership in the Healthcare Sector

Organizational leadership is the leadership that involves the leaders of a particular business, forming the main structure upon which the leadership is anchored (Salas-Vallina et al., 2017). It creates the values and objectives under which all the team members in any department are expected to uphold and to work in line with the primary intention of meeting the goals. In healthcare, organizational leadership occurs at the healthcare center level or system of healthcare providers that operate under the same regulatory jurisdiction and may also extend to the world perspective under the WHO (Wolf, 2017). In such organizations, the leaders may comprise the board of directors or the various combinations of the leaders of the board of directors from different healthcare organizations. This board of directors or leaders enact the vision of the organization, the missions, and the values of the group and aligns the culture of the organization with these specific guidelines.

After setting the values, mission, and objectives of the organization, the board of directors also creates a mechanism with which they can use to monitor the organizational values and provides a way through which it can get the feedback from the patients on how the hospital performs in terms of offering its healthcare services (Egener et al., 2017). The input is used to integrate the patient's needs and the organizational practices in such a way that the approach is taken henceforth result in the best quality of healthcare services. Moreover, the board leadership provides the essential strategies that, upon implementation, helps in the development of positive culture within the facility (Moffat-Bruce et al., 2017). Such an approach also makes the workers

be innovative and find the best ways that they can offer services for maximum client satisfaction. Also, when the board works on the feedback from the clients, they can create a proper channel of communication as well as enhance the interaction between the various stakeholders with the primary intention of improving healthcare quality. An effective communication integrates the working of the internal as well as the eternal factors and results in the overall improvement of the healthcare services.

National-Level Leadership

The reproduction of data-sharing networks has produced many integrations of both the local and national health information sharing partners. The differences in the technological models have enhanced the development of healthcare organizations and other affiliated healthcare providers such that these interactions are termed *medical trading areas* (Beglaryan et al., 2017). As a result of the loss in direction, there have been some cases of high-profile failures in the health information exchange which raises the questions on the viability of the application of the HIE on broader regions on the need to connect different regions and to enable these regions to share the patient information provided in the nationwide health information network.

However, at the national level, the leadership is primarily concerned with developing policies that are meant to improve healthcare provision in the country. The leaders at the national level also provide for an enabling environment for the nurses and doctors to offer their services based on the patients in the best possible manner across all the facilities within the nation (Zaccagnini & Pechacek, 2019). With constant monitoring and feedback analysis, the national leadership can create the essential guidelines for the various healthcare providers as well as other stakeholders so that all the guidelines may assist the leaders in the lower levels and who are closer to the patients to improve their healthcare services for the patients across the nation (Elshaug et al., 2017).

Since WHO is making healthcare to be a global concern, most to the national interventions in healthcare is meant to add to the international healthcare outcomes (Michie et al., 2017). Global healthcare is seen as a crisis due to the dynamics of disease outbreaks in different regions, and the need for an integrated approach in healthcare is quite dynamic. It may not capture the same values, vision, or can it address the same global health demands and the processes to achieve such demands (Djitog et al., 2017). However, with a compelling national leadership, worldwide healthcare concerns can be achieved through a single approach at the national leadership interventions.

In most countries, the national leadership provides various assistance to the national as well as the lower leadership structures to realize their organizational healthcare goals by offering different interventions (Moore et al., 2017). For instance, the government can provide such help through enhancing the sustained appreciative strategy, where the government offers gifts or rewards to the healthcare organizations that meet the standards set by the state. Also, the government can provide its interventions through the developmental strategy where the government comes in to help in the improvement of the various infrastructure of a given hospital to meet the basic or the enhanced needs (Pereira et al., 2017). For instance, the state can come in and provide the cancer treatment machines to decrease the deaths from cancer. Furthermore, the state can help with offering experts in the various fields to help with the needs of a particular hospital or a system of hospitals. For example, the government may come in to help the hospitals with the researchers and doctors from other nations that have stable healthcare. Such interventions help in furthering the course of the government to improve its national health outcomes and, consequently, the international health quality outcome.

The persistent challenges in bringing the large-scale information-sharing networks to support the development of the HIE is posing significant threats to the adoption of the system

hence increasing the chances of dampening the optimism that could be developed towards the realization of the benefits of interconnecting the various healthcare organizations beyond the capability of the HIE systems, especially concerning the privacy and the security protections, which can put the patient information at risk of exposure to the fraudulent individuals who may use such information to compromise the health of the patients (Floridi et al., 2018; Lal et al., 2017). However, the internet of things is significantly evolving, and the platforms are increasingly becoming secure and trustworthy in their operations. With improved developments, HIE platforms can meet the needs of global patient information exchange.

Leadership Theories applicable for Healthcare Leadership

Great Man Theory applicable to Healthcare Leadership. Theories of leadership have existed since the 19th-century epoch with significant transfigurations occurring to meet the expectations of the contemporary society. This theory is one of the earliest ones that suggests that leadership is an inherent trait or can be inherited. It indicates that individuals born in a generation of great people have been infused with higher chances of being great themselves by obtaining the attributes of leadership (Stanley, 2019). Although the societal transformations have dismissed the theory in culture and beliefs, it is arguably still an appropriate paradigm, with great men assuming the team and role leaders from generations before them. The focus is given to these great men, and the view suggests that it is critical to observe, learn, and emulate the characteristics that deem them successful (Mango, 2018). The demands of modern society are complex in scope with the belief that this theory is flawed, and therefore its credibility has diminished over the years. The ideology that great leaders are born and not made was replaced by the modern breed of self-titled leaders (Gandolfi, & Stone, 2017). The great man theory is almost similar to the trait theory, which assumes that born leaders acquire physical attributes and

personality traits that discern them from other people. Stanley (2019) describes the trait theory as a theory that rests on the assumption that the individual is more important than the situation.

Contingency Theory applicable to Healthcare Leadership. Lussier and Achua (2015) summarize the discovery and models of the contingency theory. Fred Fiedler developed the situational theory in 1951, and its development surfaced when the realization that there was no single leadership style to cover all healthcare situations came into being. Leadership is traditionally understood as taking place in a situation, so leaders need to change their behavior to meet situational characteristics, which is called a contingency or situational leadership (Zigarmi & Roberts, 2017). The theory suggests that good leadership adopt different techniques to face different situations. They comprehend the versatility of leadership approaches that need to be matched in the current context (Anderson et al., 2017). Evans (1970) categorizes the style of leadership in two views: task motivated, and relationship motivated. In the broadest sense, this notion comprehensively describes the factors needed to achieve good leadership. Apprehending the group dynamic and variables such as quality in work output, productivity, and positivism in completing tasks, are some of the practices that form leader-subordinate relationships.

Dubrin and Morrison (2007) describe the theory as too complicated since the amount of control the leader can direct on the situation may be limited from time to time. In the path-goal approach developed by Evans in the 1970s, it is too multifaceted since the leader must consider the characteristics of the staff as well as the requirements of the tasks.

The great man theory informs the current research in that it helps to understand how leaders are born and can be nurtured to better their in-born leadership skills. Such leaders can then be used to drive change in different parts of the globe in healthcare management, particularly in the adaptation of HIE.

Transformational Theory applicable to Healthcare Leadership. The transformational theory was developed by Bass in 1985 when he wanted to advance the previous concepts of House and Burns of charismatic leadership to include transformational and transactional leadership (Van Wart, 2012). This type of theory ensures that there are adjustments in individuals and social systems. The main objective is to improve the leader's charisma and subsequently to turn the followers into leaders. According to Dugan (2017), transformational leadership incorporates the various elements of leadership: personalized consideration, cognitive stimulation, motivation, and influence. The leader attends to the follower by ensuring their communication paths are impartial and provides support when necessary. Cognitive stimulation is enhanced when leaders provide their followers with opportunities to take risks and provide solutions to arising problems (Sánchez-Cardona et al., 2018). By unleashing the intellectual confinements in the follower's mind, the leader encourages innovation and critical thinking.

Transformational leadership is essential for the current research in that this theory provides an understanding of how leaders can drive change in an organization. With the current increase in technology, a leader should make the healthcare organization adopt new and updated electronic health records.

Style and Behavior Theory applicable to Healthcare Leadership. This notion shifts its focus from leaders to leadership. The theory argues that how leaders behave and how they perform their duties is critical in how they respond to specific stimuli. It gives belief and acceptance to the idea that leaders can be developed and conditioned so that they can optimize their performance (Epitropaki et al., 2017). Style and behavior theory contradicts the trait theory profoundly in that, rather than focusing on physical traits and personality attributes but instead emphasizes on mannerisms and behaviors and how they can be integrated to boost success. Harrison (2018) identifies three leadership styles that leaders inherently possess. Autocratic

leadership style (which involves telling the employees what to do), the democratic leadership style (which encourages participation in decision-making), and the laissez-faire leadership style (which is a hands-off approach. Although these are some of the strategies that define behavioral theory, relevant mannerisms like envisioning, becoming a role model, and enhancing workplace relationships are the vital variables in augmenting productivity (Odeneye, 2017). Realizing that one style does not fit in all situations is a crucial enabler for a leader who can espouse a deft approach in discerning how to use technical, human, and conceptual skills to lead their followers.

Understanding how leaders behave in different situations makes it possible to understand how they can make decisions in the face of the changing world. Leaders are needed to make rational decisions in rational times so that they can effect change in healthcare information exchange.

Individual Leadership applicable to Healthcare Leadership. Various kinds of leadership result in the realization of the multiple goals of any particular organization. These leadership styles, however, may work in different settings comprising of varied professionals as well as stakeholders. In the management of patient health information exchange, the players are quite diverse, ranging from the governments to the healthcare managers, doctors, nurses, and patients (Ghafari, 2019). Moreover, the system also comprises of the vendors who sell the various exchange platforms. Such a sophisticated platform requires a well-thought approach to ensure that everything can work as expected by the different personnel and leaders at any level of management. For instance, in the management approach, the quality of leadership is the primary determinant of administration (Bakotić & Rogošić, 2017). Such a leadership approach takes part in the policymaking decisions and forms a point for the development of a decentralized organizational framework as well as in the participative management. The leadership style of this

kind of leadership conveys respect for the nursing staff and puts an ultimate trust in the ability of the nurses to provide the highest quality of patient care.

According to Summerfield (2014), the primary purpose of leadership is to realize a collective objective which is in the interest of the organization or the system. Moreover, leadership has been recognized to act as a precursor towards achieving safety, mainly in the healthcare sector. It is also a critical factor for realizing the changes that are supposed to be made in the various initiatives and forms the significant organization's competitive cost position upon changing the intended action (Duarte et al., 2014; Wager et al., 2017).

Summerfield (2014) also identified that the essential features of leadership and ascribed it to the existence of a relationship between the leader and the subject or may respond to the needs of the subjects or the intended people and meet the goals of the individuals who work tirelessly to achieve specific outcomes. A leader, therefore, guides his or her subjects to act and achieve the goals "that represent the values and motivations, the wants and needs, the aspirations and expectations of both leaders and followers" (p. 252). In essence, the knowledge and understanding of the leader are evident in the way he or she acts, see, and satisfy the values and motivations of their subjects or their intended stakeholders as well as satisfy their own goals which are in line with all the stakeholders.

One of the most effective leadership styles in the healthcare sector is the transformational leadership, which calls upon the input of all the stakeholders without overlooking any person (Besieux et al., 2018; Hansen & Pihl-Thingvad, 2019). Moreover, each of the stakeholders is expected to benefit from the outcomes of such leadership. For example, in the patient information exchange, the individual leadership may wish to have a platform that may not be readily understood by other stakeholders. However, with collective engagement, each party can present their view of the best platform that can help in the improvement of the health outcome

but, at the same time, cannot compromise the economic stability of the health facility leading to its collapse (Ward et al., 2018).

In the healthcare setting, it is not easy for a single leader to handle all the health issues and to lead to the best outcome of the hospital's health practices (Barr & Dowding, 2019). Healthcare is quite broad and is characterized by many diverse kinds of health issues as well as professionals and different technical aspects that may not be under the management of a single person (Morgan et al., 2017). This limits the capacity of an individual leadership style to meet the objectives of the organization. However, individual leaders can also ensure that their areas of leadership are conducive to help the healthcare staff to operate in a safe environment as well as an environment where the individuals can feel satisfied with the health as well as the work outcomes.

Critique of Leadership Theories under consideration for Healthcare Leadership. The idea that leaders are born has been carried forward into many generations. However, leadership is a quality that comprises different attributes that may not be passed on from one person to another. Even though it is possible to identify leadership traits in someone, it is also possible to believe that such traits are mostly acquired. To believe that a leader is likely to produce a leader in his or her lineage may mislead the business sector into wrong directions with the operations of the business. However, leaders have a great way of instilling some form of the discipline into those who follow them. According to Antonakis and Day (2017), most of the current leadership theories from what role trait plays in fashioning a leader towards becoming a specific kind of leader. To believe that leaders are naturally born puts the leadership development process into darkness as the people may not necessarily understand why it is crucial for them to move towards realizing their specific targets as well as the organizational objective. However, the great man theory has been applied to world leaders such as Julius Caesar,

Alexander the Great, and Abraham Lincoln (Spector, 2016). According to (Spector, 2016), great man theory lies in the idea that leadership is divine. However, the leader chosen by my mortal is corrupt and inspirational. It is not quite direct to apply this theory in the control and running of patient information exchange, as time and technology have changed a lot.

Contingency theory requires that a leader comes up with ways that can better solve the situation the leader is facing at any time. Healthcare comprises quite a wide range of complex activities that may affect the way a leader responds to situations. While the leadership approach is great, especially when an organization is supposed to make decisions based on what it faces at any point to avoid wastage of resources, it can cause problems when the required supplies may not be readily available to solve the existing problem at any instance of time. The change in technology and the complexity in globalization may inhibit the effectiveness of such a leader as most of the required resources may not be used to address a patient's concerns.

Style and behavior theory focus on the behavior of different leaders as these affect both their follows and the overall performance of the companies they lead. According to (Al Rahbi et al., 2017), leaders inspire their followers towards specific directions. However, they make such inspiration from their behavior. Some leaders behave in ways that make their followers fear them, thus making everything fall into place as a response from fear of consequences of their inaction. On the other hand, some leaders allow their subjects to act on their initiative, thereby making decisions based on the best interest of their organizations. As a result, this may result in the lack of specific direction since each individual may have different thinking, which may eventually result in indifferently directed efforts. On the other hand, giving people the free will to choose can result in more innovation for any healthcare organization. The leader can, therefore, bring all of the individual ideas together and find out the best amongst the available options.

Due to globalization and the rapidly changing technology, each leader must find the best way in which they can create change in the organization, and how that change can help drive the objective of the organization. Therefore, transformational leadership is one of the essential leadership theories that can help to effect change in any particular organization. Unlike other leadership theories, transformational theory considers the present situation and future possibilities and uses the existing resources to address the challenges that exist in the company. As such, it focuses on human capital as well as physical, technological, and economic inputs to direct the future position of the healthcare organization.

Healthcare Organization Leadership Roles in Promoting Global HIE

The Health Information Technology (HIT) occupies a conspicuous place in the need for the provision of healthcare with high-quality improvements and with reduced costs. The application of technology in health is seen to be taking a leading role in healthcare, thus resulting in a reduction in the value of the healthcare systems (Evans & Stoddart, 2017). Technology in healthcare has been broadly applied in robotics, however, in the modern clinics, information technology, in particular, becomes handy in the increase of the "patient-centered and evidence-based medicine with the real-time availability of high-quality information." (Bauer et al., 2014, p. 171). With the continued use of information technology in healthcare, the various experts in the United States believe that there is a need for the United States healthcare system to decide and use interoperable electronic health records (EHRs) comprising of the computerized physician and e-prescriptions.

The health information management (HIM) experts have the responsibility of improving the quality of care through availing the necessary information required for making healthcare decisions by making proper use of the data as well as the information resource (Pearlson & Saunders, 2019). However, it is only possible for the healthcare IT experts in healthcare to

collaborate with other professionals in different sectors for the realization of the various goals of the healthcare systems. The national governments can be part of the interventions meant to ensure that the various experts are available to work towards improving the quality of healthcare.

There is a need for accurate patient information identification and linking the patient with the care delivery sites across all the patient HIE that work together (Wu & LaRue, 2017). With proper organizational leadership, the healthcare facility can consider the best algorithms used to store the patient data and how such algorithms can be retrieved for use by any of the specific doctors. They intend to attend to a patient at any particular time (Chang et al., 2019). It is also critical to note that the patient information exchange system has technologically advanced and improved over time, making it easier for the doctors, nurses as well as other medical professionals to analyze and interpret data hence offer the necessary medical assistance at any particular time.

Robust information governance that addresses the integrity of patient identity and patient matching is a critical factor in health information control (Johri et al., 2017). The leadership may have to train its data handlers from the various perspectives to understand the operations of the multiple exchange platforms for the systems to be in a position of providing the exact patient information upon retrieval.

Patient information occupies the central position in the integrity of any healthcare facility (Sun et al., 2018). There various cases in which patient information has been seen by the external parties hence compromising their privacy as well as exposing them to new dangers (Parker, 2017). The information that can be stolen in such cases comprises the names, medical records, dates of birth, social security codes, medications, and demographic information, all of which may identify a person (Ho, 2017). That is one of the challenges that the healthcare leadership faces with the use of information technologies because such systems can be hacked at any time.

Still, the risks associated with cybersecurity are evident and may come at any particular time without any specific knowledge of the healthcare leaders.

Based on the risks that the healthcare organization faces, it is essential that organizational leadership should operate under the required regulatory policies (Ginter et al., 2018). However, the increase in the regulations on healthcare does not solve the entire security risks that various healthcare providers face. Therefore, the best way for the leadership to approach and solve the problem is by assessing the source of the breach and seal it off to prevent a further breach (Porcedda, 2018). A proper leadership would consider having both the digital and the physical securities; however, theft of the information can come from any of the two systems, including the internal systems. To prevent such cases, it is necessary that the leadership may create digital methods that can secure and locate all the devices that are used to access digital information (Bligh-Wall, 2017). Moreover, effective leadership averts the possibility of access to any data after maintenance practices. The leaders ensure that it cleans and clears all the organizational audit trail.

Health information security managers, as well as compliance officials, take proactive steps to ensure that they improve the record security as well as privacy of the data as they maintain the confidentiality of such records (Chen & Benusa, 2017). For the starting healthcare organization, it is recommended that they should conduct the assessment of their position in terms of the security breach by conducting a broader cyber maturity assessment as well as the technical security testing and the dry runs and also to understand what they are supposed to do in the event that the information system is breached including finding the best ways to respond to the public, the patients, and all the regulators, both from the government as well as from the patient protection and insurance providers and the appropriate technologies needed to address the particular issue that may have resulted in the data breach (Ahmadi et al., 2017; Alsmadi, 2019).

Effective leadership understands that the data retention program is different from the privacy program and therefore finds the best ways to address the two programs (Molina-Solana et al., 2017). With the compliance to the patient data policies, the leaders are required to collect and exchange information in a manner that is consistent with the needs for quality control, credibility, and the validity of patient data collected by the hospital. The leadership should also ensure that the essential policy that is aimed at implementing the most critical standards for the collection of the data, mapping of the same data to the intended patient and documenting such data are appropriately followed with the main aim of ensuring that both the quality of the information as well as the processes are done to improve the health outcomes for a particular health organization and the entire nation (Patel et al., 2017).

One of the main areas that have improved as a result of the information technology in healthcare is telemedicine (Kruse & Beane, 2018; Sligo et al., 2017). Today, it is possible for a patient to be diagnosed with an infection in one health center, and the information can be accessed elsewhere and used to offer the needed medication to the patient even when the patient does not provide his or her medical records. A patient may, therefore, get the necessary medicines from any location without having to travel for long distances to book appointments with one specific doctor (Sharma et al., 2017). However, the development of telemedicine has also led to the framing of the various policies aimed at monitoring the privacy as well as the security concerns within the people who have access to such patient information. With the understanding that the technologies are improving quite fast, it is also likely that some of the hospitals may use outdated technologies that may result in the compromise of the patient information (Graban, 2018). The leadership, therefore, has a central role to play in as far as the best and up-to-date technologies are used in the management of the patient information to ensure that both the security and the privacy of the data are enhanced.

Effective leadership should ensure that for the continuity of the information security, the system should provide a single access to the sensitive information and to focus on the authentication for the use of the system. Moreover, the users should have prior identification within the system such that in the case of a security breach, the users can be easily traced and be required to account for their conduct in the healthcare system. Such a system would provide the information on who and what was accessed and for what purpose.

Healthcare leadership is required to formulate all the underlying aspects of the policies that should be followed by any particular individual at the same time seeking for the clarification of the areas that may pose a threat to the organizations that do not take conspicuous roles in the development of the information exchange platforms (Berry & Berry, 2018). Such interventions may include the formation of the various committees to provide guidance and leadership in the development of the structure for governing the processes involved in the keeping of the patient information. The different governance structures in the healthcare sector assist with the provision of the various standards for sharing the information, protecting the data, and for conducting multiple organizational practices that improve the security of the patients' information when such data move from one system to another and from one healthcare facility to the other (Pramanik et al., 2017).

The public health informatics involves the infrastructure of the various healthcare departments' data systems as well as the capacity to use such information to advance the public healthcare enterprise. The capacity of the use of the data and the infrastructure of the IT go together, and when they are inadequate, such inadequacies serve as the main limiting factors in the health sector (Shu & Jahankhani, 2017). Leadership is one of the primary promoters of the interoperability within the LHD across the whole country. Other proponents of interoperability include leadership, financial assistance, and analysis of the existing information

telecommunication systems, prioritization of the useful strategies, technical know-how, and LHD control on the decisions made concerning the healthcare IT (Altman & Tushman, 2017). Local and national health department leadership plays critical roles in the motivating of the informatics and the uptake of the informatics, which in turn holds the hope of transforming the various practices in public health (Aarons et al., 2017; Braunstein, 2018).

Interoperability may also allow more significant interaction and the access to extensive information stored within the system and can also facilitate the much higher jurisdictional sharing of the healthcare information as well as the services hence promoting the transparency of service by making it possible for the data to be available to all the stakeholders (Riso et al., 2017). Effective leadership may lead interoperable systems to enhance the connectivity of the LHDs and the society or community partners who provide support in the improvement of the various efforts made towards health and with the real-time visualization of the health information.

National governments are primary funders of most healthcare interventions and ensure the development of the state healthcare systems, which in turn extend to the international healthcare outcomes (Eboreime et al., 2017). The policies enacted at the executive level form the basis upon which all other healthcare leaders in the lower capacities have to follow to meet the national healthcare goals. For instance, the state enacts laws and healthcare Acts that are meant to provide the best healthcare outcomes by addressing all the issues that the government face on its way to realizing nationwide healthcare goals (Erickson et al., 2017). However, the national efforts may also fail to understand the intended national purpose due to the laxity in most of the leaders at the organizational level, or due to the insufficient funds to support the various initiatives that the government has put in place.

The national governments operate under the guidance of the WHO, which is responsible for the world health outcomes and interventions (WHO, & Regional Office for Europe, 2019). A disease in one area may be considered to be a threat to another area; therefore, WHO comes with the plans to ensure that the outbreak of a disease in one area is contained within a specific area and is eliminated within that area to minimize the spread of the infection to other people who live in the surrounding. The national governments, therefore, make such efforts in their capacity as the country affected and, in turn, lead to the worldwide health benefit (Thomson et al., 2017). In the same way, the national government, through its research centers, can research the pandemic that hit it and share the information with other countries so that the disease can have an immediate response in case it is witnessed in other countries as well. This is necessary due to the daily interactions and international travels that may make the disease spread to other area s within a short time and before it can be detected.

When the national governments set policies, the experts in every field are required to adhere to such policies as they are in line with the world's health goals. Data handling professionals, as well as other IT experts, are therefore expected to focus on the most essential and relevant compliance measures in their efforts to design and maintain record-keeping as well as in the privacy of the clients' information (Smallwood, 2019). The experts need to understand the full scope and intent of privacy, security, and compliance because they are relevant regulations that maintain the extent to which the healthcare facilities handle their patients. Moreover, the leadership is also expected to understand that although the experts occupy a conspicuous place in the design and management of the various health records, every member of the staff has a responsibility of ensuring that the patient information is kept well and is not compromised by any specific individual (Dziegielewski & Holliman, 2019; Eisenberg & Price, 2017). It the duty of every member of the medical staff with the access to patient information to

understand that privacy and compliance are in the custody of the hospital and is not a personal asset, therefore, any mismanagement of such data compromises the integrity of the healthcare unit (Rahman, 2017). Hence, whoever has access to the data must understand that they have the property of the hospital and, therefore, must use them most appropriately and ensure that no third parties can use the staff logins to access any information from the database.

It must also be understood that information technology is advancing quite fast and may pose challenges to the compliance requirements. For instance, with the development of the technology, some of the hospitals may be left behind and instead use less advanced systems that may not meet the national policies on privacy and compliance requirements (Blank et al., 2017). As a result, they may be in a position in which such hospitals may put the data on a very slippery position where the eternal parties can access them. However, the federal government needs to conduct routine monitoring of the hospitals and ensure that each of the healthcare facilities complies with the state regulation on data collection, storage, and retrieval (Demaerschalk et al., 2017). One of the main areas that most hospitals will find challenging following the development of the technology is due to telemedicine and the internet of things that continue to advance of compliance security and privacy, hence creating areas of risk to the patient information. It is essential to understand that culture forms one of the best ways through which hospitals can manage their clients' data. When they can maintain their culture of compliance, a healthcare organization may put more focus on the privacy of the data they possess and at the same time ensure that it remains compliant to all the national regulations at all the time without compromising any efforts of the national government (Team, 2017).

Vigilance is a critical requirement in the management of patient data. The security managers have to understand that they cannot operate on their terms or their efforts, but that their efforts may be united with those of other experts to realize the intended healthcare goals (Ross,

2017). The security managers should consider working with the IT managers, leadership within the scope of healthcare organizations, physical security officers, the working staff, the legal team, among other stakeholders who have access to such data at any particular time (Graban & Swartz, 2018), additionally, these individuals need to be aware of the existence and the understanding of the regulations and the need for compliance. The national government plays a crucial role in providing for the best professional's assistance where needs arise in the efforts of maintaining patient information. Still, such efforts may be in vain if any of the teams do not take a personal or a professional responsibility of compliance with state regulations (Wilson, 2019).

According to Wager et al. (2017), national leadership plays a critical role in adopting the use of HIE at the state level. It is only possible for the leadership to create the value of patient information exchange in the global perspective when such value can happen at the national level (Caldararo & Nash, 2017). In most cases, the adoption of HIE becomes relevant when countries compete with each other in the realization of world health goals. As a result of the completion at the world level, the national leadership puts more pressure on the organizational leaders to ensure that they comply with the various regulations and use the latest technologies to ensure that they can be of great help to the healthcare fraternity (Campos & Reich, 2019; Heath, Martin, Shahisaman et al., 2017). The national leadership, therefore, is considered to provide the direction needed to keep the hospitals focused on delivering the best healthcare services and, at the same time, offer the necessary support required to help the health IT sector improve with the improvement of technology.

The national government also plays a critical role in aligning the individual, organizational interests and the relationships that each of these organizations has with each other and lead them to the realization of shared healthcare vision and the need to promote the health of the entire population (Ledlow & Stephens, 2017). For this to happen, the leadership at the

national level is required to offer the best directions and formulate well-calculated strategies that aim at coordinating as well as driving the adoption of HIE in various world healthcare facilities (Henry, 2017). Desai (2014) asserts the countries that have realized the national HIE have done so due to the support offered by the various government departments. It shows that the use of the HIE is only possible when the government provides all the departmental inputs to ensure that the hospital moves in the proper direction (Deming, 2018). For instance, the department of information technology is tasked with providing the best experts to offer their services in the development of the healthcare informatics (Thamjamrassri et al., 2018), hence also expected to provide the various resources such as the monitoring equipment, computers and, at the same time, provide the finances to keep the efforts up and to run.

The main reason why electronic health records (EHR), as well as the HIE, have not been adopted in the whole world is due to the insufficient credibility of the patient information (Williams et al., 2017). The lack of reliability in most cases arises due to the duplication of patient data, hence providing a confusion of the patient to be treated (Rozental et al., 2017). For example, some people may have similar names, but their locations may be different. In any instance, people may move from one place to another, and the change in location provides the computer to perceive the person as a separate client (Wellman & Gulia, 2018). This makes it difficult for the patient to be better identified, or in case they are identified, they tend to have conflicting personal details. However, with the introduction of patient numbers, it is possible for the patients to be determined by their names, which may not change in their entire life.

Saudi Arabia is one of the nations that has adopted the use of the unified HIE system (Al-Hanawi et al., 2019). The unification of the system resulted in the solving of the problem of patient data duplication. The data stored in the system is also monitored to see that meet the demographic patterns, hence making it easier for the government to offer the best efforts to

address specific locational healthcare needs (Aceto et al., 2018). Moreover, as a result of the removal of duplicate names, the government of Saudi Arabia has also solved the problem of patient information security and confidentiality concerns. This example creates the understanding that it is possible for the governments to develop working HIE through its policies and thus help the system at the local level, the national level, and at the global level (Porter & Kramer, 2019). However, international leaders may not be very swift to see such efforts and to take advantage of such government interventions and their help in realizing the global need for adoption of HIE (Doppelt, 2017). On the positive side, the international healthcare leaders should develop the necessary infrastructure that promotes secure and effective sharing of the patients' data in the entire globe.

The international leaders need to develop highly structured standards to help in supporting as well as promoting an effective adoption and the implementation of the IT systems in the information technology sector (Al-Sai & Abualigah, 2017). The leadership should also enhance the collaborative team with the stakeholders in healthcare in both private and public sectors to help them achieve a shared vision (Moullin, 2017). The leaders at the national level are also required to highlight why it is essential to have healthcare IT systems for the business and the health of the people within a given location and to help the organizations to comply with the national compliance provisions (Zaccagnini & Pechacek, 2019). Since most studies such as that conducted by Agha (2014) show that IT systems are associated with the improvement of the healthcare quality, it is an area that requires much attention. The leaders in the government need to provide the facts to all the healthcare stakeholders to convince them to offer their support in meeting the healthcare goals. Moreover, HIE also saves much time, making it possible for the patients to suffer less, as opposed to when the records have to be checked manually by the respective person.

The Federal government of the United States of America furthers the development of health information exchange using various bodies. For instance, the American Health Information Management Association (AHIMA) is one of the leading professional organizations within the US mandated to “improve healthcare by advancing best practices and standards for HIM and serve as the trusted source for education, research, and professional credentialing.” (Ventola, 2014, p. 471). The AHIMA hopes to an effective e-Health Information Management (HIM) is one of the most necessary tools that can be used to deliver both safe and efficient quality care, as results, needs to be recognized and adopted by all healthcare organizations across the world. Organizations such as AHIMA play a crucial part in the development of the human resource in terms of improving their professional development as well as building in their opening new opportunities for the members to explore new technologies that may be effective in building the future economics (Butler, 2017; Primeau, 2017).

Moreover, the network of professionals has increasingly improved as a result of the adoption of professional engagement leading to the betterment of healthcare services in the areas that have adopted the strategies of improving healthcare services using quality information (Benetoli et al., 2018). AHIMA has been instrumental in the healthcare development within the US due to providing for direct engagement with the medical staff, policymakers, and the various vendors in the global healthcare markets (Sahay et al., 2017). Moreover, it has led to the increase in the number of members who have access to contacts, opportunities, constructive healthcare dialogue, and collaboration among the various professionals in the healthcare department and its support departments (Velásquez et al., 2018). Furthermore, AHIMA has increased the exchange of best practices and information across the different parts of the world to the countries that have adopted professional engagement and HIM practices.

National leadership around the world influence how health information management has to be conducted within the territory of the specific countries. Therefore, the HIM profession is different from one country to the other. For instance, some countries take advantage of their rich culture of active professional bodies. In contrast, others have academic programs that are designed to offer specialized education at different levels of HIM as well as health informatics (Parker et al., 2017). Moreover, in other nations, there are cases of individual practitioners in the management of health informatics, although they may have insufficient resources necessary to develop the national professional associations. The national leadership should meet the professional requirements of the healthcare sector, particularly in those areas that lack such professional bodies (Wechsler et al., 2017). The government can enhance the development of such organizations by compelling the professionals to have joined and obtained specific certification from the professional bodies, for them to have access to, providing the necessary professional healthcare certification assistance. It is only when any professional organization approves the professionals that the experts can offer their best services, hence comply with the regulations.

The intervention of the national government towards the promotion of global HIE is also evident in the manner in which different governments conduct their operations, such as monitoring healthcare delivery and effecting changes according to the required standards, checking on the policies that relate to health and information, and adopting and supporting the various organizations to acquire and maintain the most current technologies (WHO, 2018). Since multiple groups are also interested in these interventions, particularly in the United States, where insurance companies are in support of healthcare, it shows that there is a need for collaboration between the health sector and the various departments and leadership at all levels. Also, the government ensures that it monitors the health informatics and the various developments with

the single goal of developing uniform standards, professional ethics regulations as well as best practices in the global context so that all the interventions would assist the professions, the patients, and the society.

Government initiatives such as demographic data, economic demand analysis, and workforce management are essential elements that the government can use to promote the global adoption of HIE further. Such data can help the government to identify the areas that lack healthcare systems or those that are experiencing a shortage of health information and analyze the main reasons that could result in such discrepancies. In turn, the national leaders can then provide for more efficient healthcare systems meant to maximize the merits that result from the health information exchange. To properly effect these data mining initiatives, the national government may need to increase its surveillance of all the living organisms, which requires quality information access so that public safety can be enhanced.

Global healthcare technology companies manufacture the majority of the healthcare electronic health record systems in the healthcare industry. The national leadership can promote global HIE by setting policies that guide on the specific data management tools to be used within the country (WHO, 2019). For instance, the department of health can give direct orders for the purchase of specific HIM tools so that the management of the information can be uniform and easy to share throughout the country. Different governments can give the same directives, and this order can help promote patient information exchange (Sellberg, & Eltes, 2017; WHO, 2017). On the other hand, since the manufactures of the HIMs are global vendors, then they can be compelled to provide for the tools that meet specific standards and which can access data from other HIMs (Large et al., 2018). In essence, the adoption of global standards may make it easier to realize the advancements as well as the adoption of the HIE as they will be more coherent,

they will provide more security, less costly, and be more successful in achieving their primary purposes.

Every nation has a healthcare leader that is tasked with ensuring that all the hospitals and health centers have electronic health records and that each of the facilities complies with the national regulations and offers the highest quality healthcare services for the nationals. Studies conducted recently, such as undertaken by Ayatollahi et al. (2014), show that many health organizations are still lagging and have not implemented the requirements for the electronic health records system, particularly, the use of the HIE system. The lack of implementation resulted in the lack of transfer of health records from one hospital to another and from one region to the other. The issues that arise from the lack of sharing the information also lead to poor-quality health delivery to the patient because the doctors are likely to give the wrong diagnosis for the patient following a prior diagnosis and the medications that the patient may have used previously (Kim et al., 2017). In the treatment of a patient, medical history plays a crucial role in the clinical outcome and the ultimate patient diagnosis results.

The slow rate at which the hospitals adopt the use of HIE is due to several reasons. First, insufficient financial resources in healthcare organizations are the most critical factor that leads these organizations not to have updated HIE in place. The national leadership can promote the adoption of these information exchange platforms by providing sufficient resources. Still, at the same time, it can achieve this by constant monitoring of the organization for compliance with the national policies on electronic health records (Akhlaq et al., 2016). Secondly, other organizations have made observations that the HIE system does not contribute to the development of the organization. However, since most of the healthcare organizations are considered to be profit-generating, they find it challenging to use a system that has no significant economic reward to the healthcare facility (Everson, 2017).

Moreover, the systems require capital at the point in which they are initialized and maintained. The state leaders, particularly in the healthcare department, should find on the way to compel the government to fund the adoption of the systems because of the more significant sound such systems have on the entire national health outcome as well as the global health goals. Essentially, it also shows that most healthcare organizations are not aware of the necessity of the health information exchange and thus calls for the national leaders to educate business owners and, at the same time, promote the adoption of such systems.

Critique of Healthcare Organization Leadership Roles in Promoting Global HIE.

Conditions of work create a problematic situation for the significant risk of errors in the operations. Various system designers often make mistakes as much a high-level manager does. The corollary to this then implies that the substantial manager's role in the prevention of the errors that occur in any digital system in the healthcare sector. As such, the managers are required to be more attentive to detail as well as provide the necessary support for all the systems adopted by the healthcare organization they lead (Lee, 2014).

Evidence-based is one of the concepts used in the healthcare sector. It emerged from clinical medicine and is now used in other areas such as in decision-making, healthcare standards, as well as utilized by different medical professionals such as managers, policymakers, and researchers throughout the world. Evidence-based management also indicates that the management, like the clinicians, should seek, appraise, and utilize empirical evidence received from research for their practice (Barends et al., 2017). At the same time, the managers also need to have their decisions as well as actions documented and evaluated over a period so that these, too, can add to the effective management of the HIE.

Healthcare Leadership across the World

This section of the study reviews literature about leadership in healthcare organizations across the world. The purpose of this section is in connection to research question two, which is: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation? In order to address and answer this research question, we must explore how leadership is exercised in the healthcare sector across the world.

Healthcare is one of the necessities that are required in a nation. Proper healthcare is needed for human development and wellbeing. Healthcare is the improvement of health through various means. It involves the treatment of injuries, diseases, illnesses, and even mental problems in people. The failure of a nation is always indicated by poor healthcare in the country. Failure to maintain healthcare will lead to the death of people. This will negatively affect the nation because the population of the people will reduce, and this is a setback to the community. The problem that might come with inadequate healthcare might also affect the physical nature of someone. Therefore, for a useful and effective are who are there to oversee if there are problems with the health system of the nation. They should ensure that there are proper facilities and equipment in healthcare centers (Upadhaya et al., 2017). Whenever there is a shortage of healthcare materials, they should ensure that the problem is dealt with within the shortest time possible so that many lives are not affected due to the shortage (Tretiakov et al., 2017). The leaders are to ensure there are enough healthcare centers in the nations that people can easily get accessed without multiple difficulties. In this paper, the researcher has discussed leadership in various countries like USA, U.K, Canada, Western Europe, and China, hence analyzing as to how the leaders manage the issues of healthcare in these countries.

Healthcare Leadership in the United States of America. The rising awareness of the significance of leadership in healthcare has preempted an analysis of leadership in the healthcare

sector. Currently, there is a need for studies to focus on a more in-depth analysis of the role of leadership in healthcare concerning healthcare information and the globalization process.

Due to an increasing magnitude of healthcare services within the USA, many have considered it healthcare progress manifested by the era of improved technology (Painter & Lavizzo-Mourey, 2008). Better health equipment that is tradable across the global network has been the current USA health environment (Bercaw, 2017; Rich et al., 2018). Healthcare has been characterized by a large number of non-governmental organizations, governmental support, and private entities that operate across the global environment (Vassall et al., 2017).

With the identification of the USA as an advanced healthcare nation, American healthcare has supported programs like the international cancer programs to eliminate the menace of cancer in Africa and the Asian continent (Bose et al., 2017) even though it is not to be disputed that currently, the United States of America is experiencing a crossroad scenario of corporate and transformational leadership in healthcare.

Several health issues have been raised to address current health concerns globally. One such is the international agreements on health. The global healthcare leadership forum termed the arrangements as safety external evaluation programs for humanity (Kaper et al., 2018). The Human National Health institutes have made several and selected contracts and team-based intervention agreements across the global world to promote healthcare. Additionally, America provides healthcare support to millions of people around the globe.

The United States of America is also known for its vital role in providing sexual and reproductive health, such as abortion and contraceptives to women. Their healthcare campaigns for safe delivery, child healthcare, diagnosis of sexually transmitted diseases, and HIV/AIDS awareness and prevention are also quite evident. Through these sets of strategies, American

healthcare programs have always aimed to diversify the healthcare systems to be able to handle a very high number of health risks.

However, the increasing cost of medical care is eminent, the Federal prices that have risen to $950 billion are one such evidence. The current increased costs of healthcare are associated with medical progress, such as the introduction of new drugs and new therapeutic processes. All the delivery systems and the healthcare providers are related to high compensation costs to service providers other than the individual patient's contributions towards the healthcare services. A series of American health intervention programs to the African continent have failed to be fruitful.

For instance, the Angola support on cancer-related health issues that were programmers have not been successful as was intended to be from the expected objectives in certain circumstances; the American civil rights groups demanded better local healthcare before any other international support programs (Painter & Lavizzo-Mourey, 2008). Moreover, HIV/AIDS programs are seen to be under-supported financially. Although medical progress within the USA has tremendously encouraged a new pattern of healthcare that cuts across all the global borders, there are increasing costs that are associated with it.

In the recent past, studies have mentioned that healthcare delivery systems need a new approach toward leadership patterns. The new wave of leadership is purported to impact the outcomes of healthcare other than its present state (Painter & Lavizzo-Mourey, 2008). Healthcare researchers have pinpointed that three issues have to be addressed to achieve the best healthcare within and outside the entire global nation. Critical matters rely on the workforce to embrace performance that creates value, performance improvements, and teamwork operations within the work processes (Painter & Lavizzo-Mourey, 2008). The current USA healthcare is organized based on physicians instead of being organized from the view of patients' needs. A

change in addressing the healthcare outcome calls for addressing the diverse health structures within America.

Moreover, transformational leadership programs have to be embraced in I bid to establish corporate healthcare structures. A healthcare leader needs to articulate all the necessary rationale for the desired change clearly. Key goals have to be set, and a team-based work approach to be adopted (Yang & Chen, 2016). Additionally, clear visions are necessary to improve both patient and community care. A change-based managing process is a crucial tool in leadership.

The American academic medical centers are not well set to influence the healthcare concerns, a situation that triggers a new system of generational leaders to take up the task and provide a global leadership towards the healthcare sector (Kaper et al., 2018). An ethical framework of health systems is significant in addressing the health concerns within a community. Those framework systems are to be implemented from the top down a managerial level and various support towards sensitizing their importance put in place.

A benchmark for effective corporate healthcare leadership demands that health organizations provide critical professional and philosophical organizational values ranging from excellence in healthcare services under the well-cabled staff who are qualified professionals. For these set of reasons, the United States of America falls short of being the preferred healthcare provider nation across the global network. The country is a globally recognized center as they receive patients from all parts of the world (Bradd et al., 2017). However, the nation's initiatives have not all been a success. The home-based care program has regularly presented missing links on the home-based patients who, in one way or the other, have not been using the medications or are not captured on their whereabouts.

The other weakness is the financial constraint to support all the many programs that are running parallel to each other. Moreover, even financial support to maintain a standard follow up

on patients' needs as outpatients or home-based patients is not sufficient. The modern management requires a team-based way managerial approach as an intervention to the current individual's inability to effectively produce the desired knowledge learned from theoretical concepts (Yang & Chen, 2016).

Various features of a health leader include the ability of a health practitioner to be honest, futuristic in plans, and the inspirational attitude that goes with it. The standard of honesty is to hold to the ethical principles and standards of healthcare. Additionally, to be futuristic would require one to have a sense of direction and regard for organizational future operations. An individual's inspirational conscious, motivate them to remain enthusiastic and the synergy that goes along with it to see things done as expected.

A transformational leader must be competent in reasoning and also maintains high personal values and organizational support for healthcare success (Bradd et al., 2017). Healthcare workers have to be supported by the morals and etiquette to show empathy to the patients, bearing their pain to provide the best self-care needs of patients. Therefore, emotional intelligence is critical in trying to unlock professional transformational leadership. Moreover, modern techniques for managing hospitals are increasingly being embraced. New dimensional methods, such as management data systems that are based on patient service satisfaction, are fundamental. Furthermore, a competent leader is tasked with the responsibility of ensuring constant and efficient operational programs of healthcare service (Sonnino, 2016). An evaluation criterion for the success factor of all the leadership roles towards health improvement is crucial.

Physicians are to create effective medical leaders in an attempt to impact more on individual care for patients. Embracing medical managerial functions through the support of clinical groups and health organizations is vital in achieving better healthcare programs (Joseph

& Huber, 2015). Moreover, the analysis is an out mirth of the leadership skills put in healthcare programs. It needs to build on the laid down strategies.

Consequently, it is essential to conduct a study that underscores the potential benefit of adopting transformational leadership within the healthcare programs to forester the healthcare exchange within America and the global world. An understanding of the globalization in healthcare services has to borrow related leadership skills. Adopting competent professionals as healthcare workers influence a great deal of corporate competence. Moreover, the political and communication structures are to complement the emotional intelligence of workers.

Healthcare Leadership in the United Kingdom. It is through research that the most effective and efficient Medicare can be provided. With the same token, the National Health Service (NHS) of the UK is tasked with the responsibility to spend large sums of money on leadership development in healthcare (Lecube et al., 2017). By contrast, the UK does spend a lot of money on healthcare but fails to recognize the right kind of leadership to spend on and the needed impacts of such massive spending on healthcare leadership.

Leadership has a critical role in ensuring a sense of direction, commitment, and teamwork alignment with the various critical objectives set with a course of work targets to ensure harmony between all the core workers in support of the targeted vision and the laid out organizational values and strategies. Alignment of work ensures effective communication of work; a commitment between the core workers is that which provides a special self-driven force towards the organizational objectives. The United Kingdom is one of the developed countries with the health concern of all citizens at the top of the government's agenda. However, this has not yet protected inclusively all medical health concerns. For instance, the myriad of diseases that UK kingdom battles with on a day to day basis include the colonic diseases, infectious diseases, and the technologically related diseases (Ash et al., 2017). The consumption of fast

foods to a level more than the body requires has triggered the obesity menace and almost half the population of New York City and is said to be obese. Increased trafficking of the fast foods within the residential areas of the UK has been the evidence of a community deeply rooted in fast food consumption.

Increased cases of hypertension and diabetes on the residents of Britain are being related to the dangerous effects of unresponsive health programmers to the die needs of the people (Lecube et al., 2017). Bath cancer, diabetes, and hypertension are considered as a world health menace and have to be addressed from a global perspective.

A recent study claimed that their weaknesses cause apparent health issues with the global community to the first food diets and the lifestyle change that has disrupted the standard health systems. Many nations are working hand in hand to reduce the large proportion of myriad of illnesses within the globe. For instance, the current green talk deals that have had renowned nations of superpowers of Asia, Europe, and American continents coming together to initiate world agreements in a bid to help address the threats world health. The shared technology between the global countries has had its share of relevance in an attempt to address health concerns.

A concern of the nursing community diagnosis intervention has been on the forefront to enlighten the population of the world against the effects of lifestyle change and the detrimental consequences of too much unnecessary technological health-hazardous materials to the body (Guo et al., 2018; Lecube et al., 2017). The intervention highlights the necessity to prevent death cases related to avoidable health risks.

The community of Britain presents a population that lives in a relatively high per capita income as compared to other countries from the developing world. The poverty level is manifested to be at 5% (Hartgens & Van Loon, 2012). This percentage is considered to be at

least lower than the general poverty level of the rest of other countries. However, there exists a lack of awareness and appropriate information on lifestyle issues. The fast-food companies offer a variety of inexpensive, abundant, and readily available fast foods at the convenience of the citizens (Goguet-Rubio et al., 2017). These places appear to be appealing to the residents as compared to alternative arras. Additionally, alternative arras seems to be expensive. However, costly alternative locations are regarded as the best and safe foods for health.

The health department of the UK operates various programs where women who need fitness are trained in fitness health benefits. They also provide financial support and other lifestyle disease control programs. Moreover, a group of going fit forever, women group, justified the effectiveness of reconsidering these other alternative health foods (Hall et al., 2018). An intervention program started by the National Institute of Health has been on the forefront for the preventive measures against health concerns related to lifestyle.

The primary focus of this initiative has been to enlighten the community on different causes of health issues that are preventable in a bid to save a life. Health awareness has been carried out by the clinical group to provide more common knowledge to the entire globe on alternative safe and healthy foods to depend on (Hartgens & Van Loon, 2012). The group has been educating health patients on the importance of natural food types and providing other health resources to manage their condition.

Research evidence, according to the current literature reviews on leadership in healthcare, little effort has been on leadership development concerning healthcare (Barr & Dowding, 2019). Much of what has been reviewed on leadership on healthcare is but a surface knowledge of the relationship between healthcare and administration (Aij & Rapsaniotis, 2017). No more in-depth knowledge has been dug into consideration of the topic (Ramsey, Corsini, et al., 2017).

Moreover, much of the other reviews are more theory-based rather than the practicability of the situation on the ground.

Much of the government reports have always missed out on the evidence-based leadership. As a result, more confusion is witnessed other than the real facts on the level ground (Crispin et al., 2017). The evidence of a precise leadership scenario ought to regard the hierarchical dimensions of leadership, starting from the front line to the rear end and from top to down.

Effective leadership is regarded as collective leadership. It brings the separate individual efforts into a shared pool of energies where the overall set goals are easily achieved. It is characterized by shared leadership roles from both doctors, nurses, and other support staff both at the top, middle, and lower management positions (Goguet-Rubio et al., 2017). The engaged members of the team have to work together towards a shared work culture.

Workers have to break conventional boundaries between themselves and instead create links amongst themselves. Moreover, adaptive leadership skills need to be embraced within an organizational healthcare environment (Horvat & Filipovic, 2018). Adaptive management supports all the workers to create a conducive working environment (Archibald et al., 2018). Nurse leaders are supposed to participative in all areas of concern and also be emotionally intelligent. A leader with emotional intelligence is associated with teamwork cohesion and flexibility that goes with a transformational leader (Lecube et al., 2017).

The health environment has a direct link to the quality of the job that nurses would be performing. Nursing management efforts have to be embraced to provide a productive working environment (Clark, 2017). A nurse's tenement in all the decision-making concerning matters that direly affect them is vital towards a nurses' feeling of belonging to a given healthcare environment.

Medical leadership varies from the roles that one assumes within the healthcare programs (Salmond & Echevarria, 2017). Despite this difference, all workers must co-relate with one another to instill teamwork amongst themselves. An effective team leader is critical to the success of the organization. A recent study in NHS portrayed an individual's motivational work efforts to be related to the kind of leader who steers ahead those efforts (Edmondson & Harvey, 2018). A study on organizations within the UK pointed out the importance of a well-structured work environment based on teamwork.

Several leadership discourses result in crucial challenges in healthcare within the healthcare sector. They include a lack of integrated approaches to healthcare programs, both nationally and internationally (Lyall, 2017; Paton et al., 2017). Inappropriate leader roles that emanate from those in position is closely linked to poor planning rendering the healthcare development as unprogressive and unsustainable. Poor leadership contributes to poor healthcare for patients (Saini et al., 2017). Moreover, a culture of good leadership is a compulsive and rewarding environment for all the workers.

Healthcare Leadership in Canada. The leadership healthcare in Canada is to ensure the maintenance and improvement of healthcare in the country. In typical cases, healthcare should be categorized under various reforms, and these are to provide useful and quality care given to the patients in the nation (Jeyaraman et al., 2018). The charter of freedoms and rights in Canada mentions that there should be access proper healthcare system in the country, which is of good quality (Sfantou et al., 2017), getting access to a quality healthcare system. In the early years, the system was not that pleasing, but there were some reforms made in the past decades that have always brought changes to the healthcare system in the nation (Gifford et al., 2017). The improvements continue to take place, and this has brought changes throughout society and even in the medical sector. The healthcare system in Canada is an excellent example because they

embrace the sharing of resources and responsibilities with one another to maintain a sound healthcare system. However, there is an increase in population in the country, and the healthcare system has always been modified to fit into the growing population in Canada (Tretiakov et al., 2017). As we all know, leadership is essential for any healthcare organization, especially in Canada. Healthcare leadership in Canada is one of the most admirable systems in the world. Despite the challenges it comes across, it still emerges among the best countries with sound healthcare systems in the world (Alilyyani et al., 2018). Healthcare leadership is a program that was designed to create changes in the healthcare systems in the nation.

The healthcare leadership network in Canada was created to ease connections in various departments of the healthcare system. The leaders also work together to develop environs that support the sound healthcare system in the country (Bradd et al., 2017). In enhancing good healthcare leadership in Canada, the government of the nation has worked out three key areas to assist in maintaining a good leadership network within the country. The government has accelerated good leadership practices and capabilities (Gordon et al., 2017); Hence, this was used to mentor people into becoming good healthcare leaders in the future. This has helped in finding good leaders who are skilled in the work, and it positively impacted the healthcare system of the country. The government has also created leadership forums in Canada where leaders can come together, get engaged in healthcare talks, and through this, they can share different opinions and ideas that they have concerning the healthcare system in the country (McGibbon, 2019). When the leaders meet together and can get involved through dialogue, they will be able to share a lot of ideas, and they will be able to explore the knowledge they have about healthcare to those who do not know. Leadership communication ensures stable healthcare leadership in Canada because the leaders work together as a team to ensure the success of the country in terms of healthcare.

In Canada, patients usually get accessed to healthcare from many providers, and this is because of various reasons. This is because those who provide healthcare services are different and are specialized in their areas of operation (Montague et al., 2018). This is disadvantageous, and it creates difficulties in keeping the records of the patients because different people file them. The history of a patient can sometimes be incomplete or even interfered with from separate locations. This does have not only an adverse result on the patient alone but also the healthcare provider (Hargett et al., 2017). In Canada, the health information way engages both the territories and various provinces to enhance development in the healthcare system (Chen, 2018). The health information engagement is typically used in Canada because of its use of digital solutions and the adoption of a healthcare system that is of advanced levels in terms of technology. The healthcare information exchange department has several strategies that it has put in place for a successful information exchange system in the country (Bharwani et al., 2017).

Patient Health Records security is one of the strategies that are put in place is to develop interoperable electronic health records that highly secured. The patient's records must be kept safe in the health records system. The purpose of this computerized machine is to provide an accurate history of the more comprehensive patient data (Persaud, 2019). The advantage of this system is that the authorized medical providers from different places can get accessed to the same record of the patient, and from there, they will find it easier to offer a solution to the patient because of the available record in the electronic device (Goldstein et al., 2017). The main goal to be achieved by this is that in the end, the health records patients will be connected in each province where there are established healthcare centers spread across the country (Connors et al., 2017). The interconnection of health records benefits the patient because when they attend a healthcare care center, they will not have to give many details about them because their names already exist in the electronic machine termed as electronic health records (Rathert et al., 2017).

The second strategy is to adopt health information technology to help to build countrywide information technology, which can only be successful when electronic health records are set in place for use (Akhlaq et al., 2017). It gives the medical provider an easy time to be able to comprehend the history and information of a patient without difficulties of incomplete records or a record that has been interfered with (Roztocki et al., 2019). The adoption strategy would enhance the quick exchange of data from one place to another in the healthcare centers that are available within Canada. The health information regions in the organization have also made a step in bringing together the provider organizations to help in establishing health data exchange, and this is one of the great and known efforts in the USA support to HIE (Esmaeilzadeh & Sambasivan, 2017).

Furthermore, despite the positive outcomes that have been noticed in the healthcare information exchange in Canada, there are still various challenges that outnumber the benefits that have been gained in the country. In 2014 the national survey that took place in Canada had a challenge (Akhlaq et al., 2017). After the survey process, those who participated never shared the information and the findings that they got from the research process because there were no suitable devices to help in sharing the data within the country (Walker, 2018). Additionally, since the reforms had been made, there are noticeable differences in the number of challenges that are always reported in the country concerning information exchange in the healthcare system. There have been improvements currently, even though there is still low adoption of the electronic medical record in the healthcare system of the entire country (Guerrazzi, 2019).

Globalization is the more significant transformation of the world healthcare through increased distribution of drugs, healthcare services, and capital to the people. Healthcare globalization in Canada has undergone significant changes (Wood, 2017). There has been a circulation of health professionals in the country and as well distribution of patients. The

movement of health professionals from one region to another tends to be detrimental to the weak areas (Miah & Yeoh, 2018). There are scenarios that some of the rich countries lack good doctors and nurses. In such cases, trained and qualified doctors are taken from poor regions to work in prosperous areas (Vanhove, 2018); hence, this is a disadvantage to the areas because, in the end, they lack proper healthcare services. However, healthcare leaders in Canada have come up with significant strategies that are meant to solve this problem.

Canadian healthcare leadership has initiated training institutions for doctors and nurses in both the rich and poor regions so that everyone in the country can attend to quality healthcare services in the country. In the trend of the circulation of patients, this is a bit new into the system but still effective, and it affects the healthcare system (Mendelson et al., 2017). Patients shift from the medical services offered from one nation to another because of the different medical attention that is given to them and at times, the costs that they are charged in various health centers (Stevens, 2017), thus it has created an imbalance in the country because it has been noticed that some regions offer excellent health services than other areas in Canada.

Healthcare Leadership in China. The healthcare system of China operates within a specific and unique geopolitical context. The population of China is more than 1.4 billion people, and they occupy ample space in the country. Due to the enormous population, healthcare in China has increased rapidly, and the leaders in the healthcare system of China have ensured that the improvement of the healthcare services and the development of the healthcare system in the country (Chatterjee et al., 2018). China's health system has undergone various transformations in the past years (Cui et al., 2017). The initial transformation stage was establishing the Republic of China; this leads to the creation of a provided health system in the nation that was extended up to the rural areas of China under the leadership of qualified and determined leaders. The transformation happened through the development and establishment of many community health

centers. Large hospitals were established, medium hospitals, and community-based facilities that enhanced healthcare in both rural and urban areas (Millar et al., 2017).

In the past years, China was a prominent state in healthcare performance, but with time, the credit was lost due to some dramatic reasons. The health leaders decided to come up with some transformations that changed the healthcare system in China. They established rules that defined the roles and responsibilities among the societies that could shape their ways of interactions among them and the healthcare providers (Millar et al., 2017). It is of importance and great significance to mention that the governance and the leaders of healthcare in China have played a significant role in shaping the healthcare system in China as an outcome of the reforms that were put in place (Paulienė, 2018). The healthcare leaders in China have created relationships among healthcare services policymakers, and they have worked together to create rules that govern all the healthcare facilities in China. The rules that are established are general, and they guide the users, providers, and makers of the healthcare system organizations in China (Lei et al., 2017). The current healthcare reforms in China mainly focus on realigning and reorienting the relationships between the government and the service providers at the expense of other equally essential relationships.

The healthcare information system in China is one that reconciles the health record of the patient in the points of services. The reconciliation of the system is also designed in a manner to support the clinical questions that might be required by the health providers or the patients. (Ren et al., 2018; Sahne & Sar, 2017). The healthcare leaders suggested to design a simple method of representing the clinical documents and messaging the based protocols for the exchange of the healthcare information and to enhance the adoption of the international standards such as the CDA and IHE for the local application vendors (Wu et al., 2017). Another proposal of the health leaders was to apply the use of a hybrid database for the storage of CDA documents that

leverages both the relational and XML optimization methods to assist in improving the performance of the flexible clinical queries (Mensah, 2018). China uses the electronic health information system that was designed by the alliance for information technology (Mensah et al., 2018). The automated information exchange system in China has gained the adoption of the people, including the United States of America, because that is where it originated. The electronic system benefits the users of equipment because it was designed in a way to improve the safety, care, and quality of the healthcare services that are provided to the patients (Kruk et al., 2018).

The healthcare information exchange in China has significant effects on the people of China. One, it has the role of advancing the quality of healthcare services provided to the patients in China (Parker & Hill, 2017). It lowers the costs for expenditures by the patients and even within the healthcare facilities. Two, the healthcare information exchange systems are operating on a regional basis. These effects are under the supervision of healthcare leaders because they have formed the health information organizations in each region (Adler-Milstein & Pfeifer, 2017). The primary role of the leaders is to build an effective health information system that can be accessed by every authorized healthcare provider despite the location where they are located. The health information system is designed such that the history of the patient and his or her records are compiled in the electronic system of the health information healthcare exchange (Kruse et al., 2017). There have been improvements in technology and science to take care of any medical encounter and medical problems that might arise. The advancement of technology in Europe has positively impacted the healthcare system in the nation (Balestra, 2017). These advancements are set in place due to the fact that the services provided are of high quality, and the results that are found from using modern technology are accurate. Through this, there have been noticeable improvements in the medical sector and the healthcare sector in general. The

continual survival of patients and the advancement in healthcare services were recognized to be the exclusive results of technological medical care.

China has made considerable progress in the current years on the provision of healthcare services in providing services with much better access to quality healthcare services. However, the leadership of the country still feels that there is still a lot to be done in the healthcare sector to make the provisions of the services perfect (Evans & Stoddart, 2017). The healthcare leaders arranged for a meeting with the president of China some time back; they requested the U.S. and the world health organizations to work together with China to provide quality and affordable care (Kingma, 2018). This concern was because of the increasing population of China that needed much healthcare and China's aging population that required medical attention and the middle class that experienced chronic diseases (Brownlee et al., 2017). It was noticed that urbanization resulted in various diseases like hypertension, diabetes, and other chronic diseases, because of the digital methods of preserving food, air pollution, and a more comfortable lifestyle. The spread of diseases affected a more significant percentage of the population of China; thus, they required medical support from other organizations outside the country (Deng et al., 2017; Tang, 2017). The world organization and the United States stepped in to assist in providing the healthcare services as had been proposed by the healthcare leaders in China (Zhang, 2017). For an effective healthcare system in a nation or state, effective leadership is required to help maintain and improve the healthcare services in the country.

Healthcare Leadership in Western Europe. Healthcare systems are multifaceted and recurrently changing across a diversity of settings and health service levels. The areas of concern that are mostly needed by the leaders to respond to the current upcoming issues are not yet well comprehended (Hafsteinsdóttir, 2019). According to research, the U.S. people who visit Europe commented that the healthcare issues in Europe are very contentious (Spencer, 2018). The

healthcare systems are in a state of instability and tend to become bogged down in concessions; thereby, Western Europe needed a transformation in the healthcare system that could assist in changing the services that were provided to the patients who needed medical attention (Cheshire & Hay, 2017; Watts et al., 2018). Western Europe, therefore, made an effort to establish compulsory health insurance. The main aim of this established reform was to enhance equitable and universal healthcare that was easy to access and free of charge (Martin, Ranney, et al., 2018). Equitable healthcare changed the lives of the people of Western Europe because they could easily get accessed to free healthcare services without spending any amount. Before, there was no tight security to ensure people could get free services from the health services that were offered (Fahy et al., 2017). As a result, the healthcare leadership decided to put security measures that could assist the people in security matters to ensure that they were well attended to and given the medical requirements that they needed at a free cost.

There have been improvements in technology and science. Technological improvement's purpose is to take care of any medical encounter and medical problems that might arise. The advancement of technology in Europe has positively impacted the healthcare system on the continent (Angelis et al., 2018). Positive impacts that took place due to the services provided are of high quality, and the results that are found from using modern technology are accurate. Through this, there have been noticeable improvements in the medical sector and the healthcare sector in general (Bezin et al., 2017). The continual survival of patients and the advancement in healthcare services were recognized to be the exclusive results of technological medical care.

In Western Europe, patients usually get accessed to healthcare from many providers, and this is because of various reasons (McDonald et al., 2018). This is because those who provide the healthcare services are different and are specialized in their areas of operation. This is disadvantageous, and it creates difficulties in keeping the records of the patients because

different people file them. The history of a patient can sometimes be incomplete or even interfered with from separate locations (Erickson & Rothberg, 2017). This does have not only an adverse result on the patient alone but also the healthcare provider. In Europe, the health information way engages both the territories and various provinces to enhance development in the healthcare system (Martin, Clarke, et al., 2019). This method is generally used in the Western part of Europe because it involves the use of digital solutions and the adoption of a healthcare system that is of advanced levels in terms of technology. The healthcare information exchange department has several strategies that it has put in place for a successful information exchange system in the country.

One of the strategies that are put in place is to develop interoperable electronic health records that highly secured. The patient's records are kept safe in the system. The purpose of this electronic machine is to provide an accurate history of the more comprehensive patient (Palojoki et al., 2017). The advantage of this system is that the authorized medical providers from different places can get accessed to the same record of the patient, and from there, they will find it easier to offer a solution to the patient because of the available record in the electronic device (Engelhardt, 2017). The main goal to be achieved by this is that in the end, the health records of the patient will be connected in each province where there are healthcare centers and the entire country (Fragidis & Chatzoglou, 2018). Interoperable healthcare systems benefit the patient because when they attend a healthcare care center, they will not have to give many details about them because their names already exist in the electronic machine termed as electronic health records.

The second strategy is to adopt health information technology to help to build countrywide information technology. The adoption can only be successful when electronic health records are put in place for use. It gives the medical provider an easy time to be able to

comprehend the history and information of a patient without difficulties of incomplete records or a record that has been interfered with (Sahay & Walsham, 2017). The adoption would enhance the quick exchange of data from one place to another in the healthcare centers that are available within Western Europe (Brownson et al., 2017). The health information regions in the organization have also made a step in bringing together the provider organizations to help in establishing health data exchange, and this is one of the great and known efforts in the USA support to HIE (Wilson & Khansa, 2018).

Globalization is the more significant transformation of the world healthcare through increased distribution of drugs, healthcare services, and capital to the people (Öncü, 2018). Healthcare globalization in Europe has undergone significant transformations. There has been the circulation of health professionals in the country and as well distribution of patients (Muth, 2017). The movement of health professionals from one region to another tends to be detrimental to the weak areas (Kingma, 2018; Witter et al., 2017). There are scenarios that some of the rich countries lack good doctors and nurses. In such cases, trained and qualified doctors are taken from poor regions to work in wealthy areas, which is a disadvantage to the areas because, in the end, they lack proper healthcare services.

Moreover, healthcare leaders in Western Europe have come up with significant strategies that are meant to solve this problem. They have initiated training institutions for doctors and nurses in both the rich and poor regions so that everyone in the country can attend to quality healthcare services in the country (Bali, 2018). In the trend of the circulation of patients, this is a bit new into the system but still effective, and it affects the healthcare system (Arditi et al., 2017). Patients shift from the medical services offered from one nation to another, which is caused because of the different medical attention that is given to them, and at times, the costs that they are charged in various health centers (Snyder et al., 2017). The shift has created an

imbalance in the country because it has been noticed that some regions offer excellent health services than other regions in Western Europe.

Information Technology Leadership

Role of Health IT Leadership in Promoting Global HIE

Health IT leaders are mainly concerned with the information related to the healthcare services and the patient database. However, according to Everson (2017), the adoption of HIE requires that the leaders from the health department collaborate with other professionals from competitive healthcare organizations. For instance, a healthcare facility should be driven by the need to reach particular goals as a result of the push from other healthcare organizations. Everson shows that when the organizations compete with each other, they are more likely to explore the areas in which they have differences with their competitors and how such differences can create opportunities for improvements (Everson, 2017). The IT leaders should understand that the issues that arise from the adoption of the HIE system can better be solved by collaborating.

The leaders in the healthcare IT departments are tasked with the responsibility of ensuring that they develop the healthcare services and that the management is effective and capable of addressing all the healthcare informatics requirements. In particular, the healthcare system should be such that it is interoperable in both the national as well as international levels. At the same time, the health IT leaders should understand that they cannot push for collaboration between themselves and their competitors. It principally requires well-constituted governance, administration, collective understanding, ultimate trust, reciprocity, and autonomy. Without these principles, the adoption of the HIE may not be realized.

The IT leaders should consider providing a structured governance approach that can be used to offer guidance on the adoption process for the ICT infrastructure in the medical facilities. For instance, on the governance, provisions, the IT leaders should see to it that they provide for

the review of the structure that governs the IT sector, the implementation and the communication done to the stakeholders on the milestones achieved by the IT department. Similar approaches should be taken during the first stages of the adoption of the HIE. The healthcare leaders may also have to consider reviewing different procedures and policies that are being used with the implementation of the HIE and the communication of the reviews to internal stakeholders in the organization for the collaborative effects of the HIE system. Moreover, the IT leaders have the mandate of educating all the stakeholders on the structure of governance used in the context of the promotion of accountability and understanding about the strategies involved in the healthcare decision-making process. By approaching the adoption of the HIE in this manner, the IT leaders can effectively promote the use of HIE in the hospitals where they work. Moreover, they can persuade the stakeholders to adopt HIE by upholding the integrity of the technology concerning the impacts of the exchange platforms and how such a platform can be instrumental in increasing the confidence of the patients. The reform, in turn, will increase the assurance that the stakeholders have on the use and adoption of the health information exchange platforms.

IT leaders can be instrumental in the improvement of the perception of the health information exchange by ensuring that their systems are more effective in handling various challenges that arise from the cybersecurity concerns. Once the clients can ascertain that their information cannot infiltrate to the attackers, they can easily accept the use of the HIE.

As the healthcare sector continues to evolve following the various regulatory, technological, and the changes in the design of the program, HIM experts are also called upon to create changes to better define their responsibility as the keepers of the patients' privacy as well as that of the patients' information security. AHIMA points out that: "privacy and security of personal health information are cornerstones of HIM practice and critical elements for the transition to electronic health information and information exchange." (Lake et al., 2014, p. 311).

Hence, the protection of the private medical history and continued medications, as well as the commitment to "safeguard[ing] the confidentiality of medical records" (Lake et al., 2014, p. 313), are long-term goals of the IT administrator in the healthcare sector (Zaidan et al., 2015). Over the years, HIM professionals have been at the forefront in ensuring that they can make the information system that can meet the standard healthcare requirements throughout the history of its existence and that such efforts may continue to bear much fruit in the future in the continued rise in technology.

The legal provisions administratively control the management of patient data in terms of Acts of the senate. The legal provision calls for the HIM professionals to understand and offer services that comply with the standards and statutory mandates that ensure that both the privacy and the security of patient data are safe. Although there have been security risks in the past, and that such risks may continue in the future due to the vast differences between the development of HIE and other IT areas, it is the responsibility of these professionals to stay above the threats imposed upon patient information or to provide the ways through which such information can be accountable for by taking up the case with the intruders, whether they are from the inside or external to the system. Legal provisions such as those provided by the Health Insurance Portability and Accountability Act (HIPAA) of 1996 (Yang & Silverman, 2014) are the most notable legal provisions with which the general public is familiar. However, based on the dynamics of the IT development, there are constant legislative and regulatory changes that occur at any time, and in different countries, making it a bit complicated for the experts to follow the legal provisions continually.

The American Recovery and Reinvestment Act (ARRA) of 2009 provides for the $19.2 billion (Bowes, 2010), supposed to be used for healthcare information technology as well as in the management of the healthcare information. In the bill, the Health Information Technology for

Economic and Clinical Health (HITECH) Act (Redhead & Library of Congress, 2018) has several of the amendments to the provisions of the HIPAA on the security and privacy of the patient information. The IT administrator, however, may have intentionally omitted or disregarded some of the requirements, or misunderstood the various revisions. On the other hand, some of the professionals may still be using the unrevised policy statements in the development and management of the healthcare informatics. Because of such disregards, there have been violations and breaches in healthcare information and has called for the need for an update of the standards as well as the definitions of the HIT. The most recent study conducted by the Institute of Medicine shows that the provisions of HIPAA privacy are less effective in providing for the safeguard required to protect the privacy for information on the patient medication. It is also important to note that the IT administrator may not achieve a significant outcome alone but has to collaborate with all the stakeholders to achieve the needed health information exchange goal. Lack of cooperation from other professionals may also fail the system.

For the global adoption of the HIE, the stakeholders may first require the possibility to share both the resources as well as the information without keeping any part of such information for the use of any particular organization. In HIE, this is referred to as mutuality, and it is necessary for building the interaction and respect among the various healthcare organizations in the business. The communications for the mutual good is essential as it helps in the contrastive discussion of the issues that the entire healthcare sector faces and the potential interventions that can help mitigate any particular problem. In most cases, the way different systems interact calls for the IT leaders from all healthcare organizations to form a panel and address all the underlying factors. In such groups are even conferences, the IT leaders may opt to discuss the various challenges that result from the multiple teams' use of the exchange platforms and collective find solve the issues that may be controversial.

In most cases, though, some of the leaders do not find it easy to engage other leaders from other organizations because they feel that they may either share critical information of may appear inferior among the rest of the people or may even end up losing the trust of the healthcare stakeholders in their organization. It is also clear from various studies such as that conducted by Oh et al. (2015), which suggests that most healthcare organizations have different platforms for sharing information, which hampers an active exchange of patient data. The significant gaps in the sharing of the information are critical in that it may keep a healthcare center way below others, which take advantage of the improvements in technology. Moreover, the difference in governance also contributes to the escalation of the problem because there is no qualified personnel that can assist with the collection of the patient information as well as sharing such information with the intended organizations. Moreover, some of the people take the issue of sharing patient information very lightly hence making it insignificant.

The IT leaders should also understand that they may not be the only holders of current information regarding patient information exchange, lack of it. While they may cite their reasons for or for not adopting the HIE, they must understand the importance of listening to their peers who have adopted the systems and who are continually looking for ways to improve the system to help the healthcare sector solve most of its problems.

The IT leaders are also called upon to consider developing and maintaining the multiple programs they control and the program metrics that demonstrate the use and need for HIE in the various healthcare facilities. When they can do that, the IT leaders would create an attitude within the stakeholders to have them finance the information exchange technology. For instance, they could show how efficient HIE is in terms of progress, performance, how the platform processes data, and how it gives rise to quality information. The IT leader may have to communicate such successes in meetings but can create a system that enhances communication

among the various medical personnel and provide immediate feedback based on the services they have offered. This could help motivate the working staff in different organizations, thus encouraging them to put more effort into delivering the best medical interventions. Moreover, when there is effective communication between the various organizations, the mutual benefit resulting from the interdependence between them can encourage the global adoption of HIE.

Reciprocity and trust are factors that occur as a result of interaction between people in different capacities. In the context of the healthcare IT, reciprocity and trust can occur between the IT experts and the stakeholders, and between the healthcare organization and the patients. However, to attain the concepts of reciprocity and trust, ethics play a critical position between the two. It, therefore, calls for the understanding of how ethics and trust are related and the impact of such a relationship on the leaders and the organization.

There is a positive balance between ethics and trust because the two are mutually reinforcing. When one is improved, the other also improves, showing that they are reciprocating each other. IT leaders have to lead in a way that may make them as well as the system they design or adopt to be trustworthy to both the clients and other organizational stakeholders. By doing so, they fulfill their responsibility of being ethical leaders, showing that there are essential technologies that each of the healthcare organizations must-have. Moreover, when IT leaders show ethical leadership, they convince and influence others to trust them and follow their instructions and leadership.

To ensure that the IT leaders are able to demonstrate ethics and command trust from the people they lead, the leaders need to have regular meetings with the members of the organizations or the external stakeholders and to listen to what they have to say regarding how the system operates. Listening to such feedback makes the stakeholders develop trust in the leadership of the health IT department. It shows that the department is ready to listen to the

stakeholders and to have an effect on the recommendations that other organizational leaders can provide. Moreover, in such meetings, the IT leaders can point out the mistakes that may be happening and thus help solve the simpler discrepancies that occur during data coding or retrieval. When the stakeholders come out of such a meeting, the decision made is built on the trust and mutual understanding of the benefits that the organizations will have as well as the relationships that develop afterward.

Due to the numerous changes that occur at the organizational level in terms of the technological developments, it is necessary that the employees and the medical staff be trained to use various machines and software that they are supposed to use before they are given the mandate to use such new developments because through educating them, the staff will be able to achieve the mandate for the chance. A study conducted within the US among the hospitals that were implementing reengineering initiatives found that most staff often underestimated the need for new knowledge (De Ruddere et al., 2014). However, training is needed, more so, in exceptional cases that involve redesign, knowledge management, error detection and prevention (Wananani et al., 2015), and the change in control (Kash et al., 2014). Upon training, the clinical staff can have their way to the use of the new tools, such as those provided by the IT department.

Effective organizational changes need a long time and constant effort to realize. According to Brunsson and Olsen (2018), there are industries such as automobile manufacturing that have to struggle with the best ways to mix the incentives, the managerial supports, and the needs for training, and as a result, experience difficulties in the coordination with other units. However, when such an organization can sustain the hard limits resulting from the transformations, they start to realize the benefits of the new systems. Similarly, a study by Curry et al. (2015) found out that most of the hospitals in the US take about 2 to 3 years for them to implement the plans they had initially (Curry et al., 2015). Moreover, it is even more problematic

and challenging at the same time to transition from implementation to the sustenance process. In the adoption of the HIE, similar problems occur as most of the staff are not easily adapted to changes within the organization. Managers understand that there is a need for continued efforts that have to be put in place to ensure that the reengineering of the organization moves forward. However, some of the staff members try to show they are welcoming the new initiatives, but after a while, they return to the systems they were already using.

Curry et al. (2015) reveal that without continued attention on the use of the new platforms, the initiative is likely to be rendered unhelpful when, in reality, the members have not embraced it. However, Curry et al. (2015) show that the hospitals that embedded the new initiatives were able to achieve their goals by either putting the new system in a daily operational system so that the workers had to use it when working. Secondly, the hospitals focused on the quality improvement process and some established specific, measurable goals and monitored the process and the milestone that the new initiative made. The hospitals that put tracking measures, the study found out, "established goals and feedback monitors appeared to galvanize the organization to make and maintain changes in these areas" (p. 29). These findings also show that IT leaders can effect changes within the healthcare setting and monitor the progress of such changes to realize the required outcome.

Bond (2018) found out that "codifying a change to ensure consistency of application and direction through implementation manuals, guidelines for decision making, and provision of budgetary support has been identified as a critical ingredient in successful and sustained implementation" (p. 25). Further, Katzenbach and Smith (2015) point out that once an organization has made a resolution and commits itself to stay with the transformation amidst the various challenges such as personnel changes, economic restraints, and competition from other organizations, the organization is likely to succeed primarily due to the records of failures in the

labor-management relations as well as ineffective management of change. As a result, the organization should make public statements as well as written documents that address the commitment of its personnel to adhere to the agreement.

It is essential to understand the HIE is a broad aspect that it entirely lies and the custody of the IT department. Therefore, the healthcare IT leader has to take complete responsibility for promoting and adopting the system that meets the needs of the healthcare organization. The designers of the HIE can have three approaches, all of which would effectively work with any particular health department. For instance, they can design an information exchange system that asks for the patient data. When such data are provided to the doctor or any clinician by the patient, the medic has to search through the database to find out what particular information may be relevant in solving the current problem of the patient. Such a design of the information exchange can best be used in cases where the patient does not have scheduled with the doctor. Secondly, the IT leaders can adopt the use of directed information exchange, which enables the clinicians to access and share the patients' information such as laboratory results or the referrals given to the patient. This form of exchange requires that the IT leader, together with other IT experts to ensure that the patient information is very secure and confidential and that the information can only be relayed to the person that requested such information.

Moreover, the design should keep records of the individuals who access the data and all the details that were accessed at any specific time. Such records can be used as evidence in case of a problem within the operations of the healthcare center. There is also the consumer-mediated exchange type of HIE, which enables the patients to access their data electronically, hence managing their health. The system puts the patients in control of their health status, meaning they can monitor their health at any particular time. The patient-centric system enables the users to avail their health information at any healthcare organization or to any individual medic in any

part of the world. Such a system prevents cases of medical errors or mistakes that arise due to missing patient health information. Moreover, when a patient is in the custody of his or her health status, he or she can monitor the status of the health and consult the doctors for any required clinical interventions. It the duty of the IT leaders to ensure that the details are updated and correct and that the consumers can be effectively trained to use the system under their control.

Based on the numerous forms of HIE, the IT leaders can find it very easy to promote the adoption and the use of HIE in the global context. Since there are various options available, there is a likelihood that people will choose from the three available options. However, the IT department and all the leaders in the department should ensure that the system they have adopted is secure and reliable in sharing the patient information at any point and time in need. According to Just et al. (2016), leaders should develop a Master Patient Index system to assist in the creation of the patients' information database. Such indices can also be used to match the patients when the patients should be identified to share their medical reports. The IT leader and other medical professionals should collaborate to develop a record locator service to help to map the patients' information retrieved from different points and be able to display such information in an organized manner. Moreover, IT leadership should also develop a clinical repository to assist with the exchange of information across the various servers within the globe. Creating such a system would allow for the effective as well as timely retrieval of essential medical data of any single patient.

Following the advancement of technology as well as medicine, there have been numerous significant improvements in healthcare quality. The continuous development of technology in different healthcare professions has led to the increasing need for providing the patients with the more customized medical interventions that are supposed to address the problems the patients

face, making it even more complicated (Ashley, 2016). Following the complication experienced in the healthcare sector as a result of the advancement of technology and medicine, healthcare providers have been faced with an increase in the responsibility they have to bear as a result of the quality of clinical services they offer to patients. The leadership ensures that there is sufficient information about the patient the hospital attends to and that such information can be availed to any other hospital that needs such information to continue the medical interventions for the patient. Moreover, the sharing of the data helps to increase the preparedness for some of the diseases that may be communicable, hence saving the clinicians time for research and possible interventions that may consume a lot of resources and consequently leading to the spread of the disease. Furthermore, when the leadership adopts the culture of sharing patient information, medical professionals can improve their services because of the assessment of competence that can result from the analysis of the patient and the medical interventions offered by a particular hospital. It follows that no doctor would want to compromise the integrity of the healthcare services they offer (Salmond & Echevarria, 2017).

Nurses play crucial roles in the administration of healthcare services. They are always in the front line every time intending to the patients, counseling the sick based on their health, and improving the various healthcare process across the year (Salmond & Echevarria, 2017). The nurses are also tasked with primary patient education, which is crucial in the efforts to reduce the more expensive readmissions to the healthcare facilities (Ben-Assuli et al., 2013; Eftekhari et al., 2017; Shabtai & Leshno, 2013). Lately, studies have shown that the role of nurses continues to expand, mainly due to the advancements in technology. For instance, based on the electronic health records, the nurses are now tasked with following up with their patients on each of the interventions of the doctors to ensure the patients can have more resources, specifically, for the patients that suffer from chronic diseases as well as conditions such as cardiac diseases diabetes.

By monitoring the patients, the nurses play much role than the one the hospital offers and thus coordinates all the stakeholders to the patient's medical attention to ensure that the doctors provide customized medical interventions that address the specific needs of the patient (Smith et al., 2013).

Nurses occupy a conspicuous and significant place in the healthcare sector; they are required to advance their education to expand their roles. For instance, being very close to the patients, they understand the developments in the patient more than any other professional in the healthcare sector. As a result, nurses need to form part of the more magnificent team tasked with finding the alternative methods for delivering quality healthcare services that meet the needs of the diverse cultures (Babiker et al., 2014). The nurses should thus be innovative and help to contribute to the development of medical practices positively.

The leadership in the nursing fraternity being endowed with the primary knowledge of patient wellbeing also has a responsibility of developing as well as promoting various healthcare policies that lead to the improvement of global healthcare outcomes. For instance, the leadership has to ensure that the patient exchange is accurate and that the various interventions proposed may lead to better medical results. However, the nurses have to collaborate with other medical professions as well as the multiple stakeholders in healthcare by being an integral part of the development of the HIE policy. Due to their vast knowledge and experience with patients, the nurses know how to formulate better strategies that enhance global HIE. A study conducted by Kitson et al. (2014) shows that there are numerous challenges in universal healthcare that need the interventions of the nurses and their leaders. Therefore, nurses can contribute more knowledge in various proposals they make if they can increase their understanding of healthcare informatics (Kitson et al., 2014).

The interventions of nurses in the development of tools such as the “Nurses Role in Achieving the Sustainable Development Goals” (Bates et al., 2014, p. 1124) have promoted the global adoption of HIE. The tool helps nurses to address diverse kinds of patients and different health issues in any part of the world. It provides a way through which the nurses can identify and design customized initiatives that immediately address a health problem noted in one country as in another part of the world (Bates et al., 2014). Additionally, due to the advancement in technology, the nurses have a way of ensuring that such information about a particular disease, as well as patient data, are available to all the nurses in the world. Therefore, nurses have tried to collaborate with other medical professionals to advance healthcare interventions around the globe, for instance, in the development of various prevention methods in specific health issues.

Moreover, since the nurses have developed a global sharing platform and have seen the outcomes of the same, they have the responsibility of promoting the use of various technologies in healthcare information, and in particular, the adoption of HIE to help solve public health problems (O'Brien et al., 2015). According to Wu and Larue (2015), nurses need to collaborate with information technologists to enhance the development of the various platforms for the exchange of information. The use of informatics in healthcare is crucial to addressing the specific needs of vulnerable patients in different parts of the globe. The platforms for information sharing can also help to solve the problem of understanding, which affects most nursing in most hospitals. When nursing leaders make such interventions, they will address such healthcare issues and experience improvements in the efficiency of delivering care.

Studies show that nurses also exert incredible resources in the daily lives of the people concerning their health. When the nurses apply their vast knowledge as well as skills from both experience and theory, they can contribute to play spheres of influence on the various issues affecting community, nations, and global healthcare. Even though there are several vexing social

and healthcare issues, there are also significant cases of failures on the nurses due to their localized thinking. If nurses can think globally in all the aspects and topics they address, they can solve severalglobal healthcare problems and lobby for change in various jurisdictions. In many parts of the world, though, politics take a localized approach making the chances to be quite complex to address in the nursing sector. However, various policymakers need to acknowledge the diverse methods through which various complicated healthcare problems can be shaped under the influence of both politics and economic forces, and not relying solely on the interventions from the healthcare sector (Shamian, 2014). Therefore, the nursing leadership must consider global leadership, control, and directives geared to realizing common medical outcomes.

The challenges mentioned by Shamian (2014) include addressing the rising non-communicable diseases, old-age diseases, and demographic expansion. The use of HIE in nursing care can be one of the ways through which nurses can find better ways to address the healthcare needs of the entire population due to their vast widespread network and collective engagement in solving global healthcare problems. Healthcare networks such as WHO Nursing CC provide effective services to the people in various nursing services in every part of the world. Other networks include Global Alliance for Nursing and Midwifery (GANM), and WHO Collaborating Centre for Nursing Information, Knowledge Management, and Sharing.

The above-stated organizations are aimed at promoting information exchange and formulation of health initiatives aimed at improving population health around the world. Such organizations are bound by various principles and understanding of leadership where they believe that effective leadership and promotion of global health requires professionals who seek counsel and guidance from other professionals. The nurses' leaders are, therefore, able to partner with one another to share information regarding how to address various challenges in the health

sector and share the best health interventions that promote clinical improvements in the patients. The nurse leaders in these organizations promote global HIE by emphasizing the importance of collaboration and consultations in the nursing profession. Nurse leaders also promote global HIE by promoting technological innovations in the health sector that help in developing effective service delivery to patients throughout the world (Thomas et al., 2016). Global partnership in the nursing profession is also enhanced by open access of information to all members and the use of advanced technological tools, which help in the efficient and timely sharing of essential data (Salmond & Echevarria, 2017). The global partnership and sharing of information among the nurses have led to better management of global epidemics such as HIV/AIDS, malaria, and TB.

Critique of Role of Health IT Leadership in Promoting Global HIE. A study conducted by Heath, Martin, Shahisaman et al. (2017) observed that effective adoption and implementation of HIE requires collaboration among healthcare industry leaders and various competitors in healthcare organizations. According to the study, such an approach helps in exploring the differences between competitors, which help in the search for solutions aimed at improving quality healthcare services to the population (Heath, Martin, Shahisaman et al., 2017). HIE issues and challenges are better addressed collaboratively. Leaders in the healthcare IT department have a role to play in ensuring that a healthcare community is developed to enhance effective management and collaboration of an interoperable system in both national and international settings. Collaboration in HIE can be promoted through proper governance, administration, mutuality, reciprocity and trust, and autonomy (Heath, Martin, Shahisaman et al., 2017).

IT leaders should provide a governance structure aimed at guiding the adoption process of ICT infrastructures in healthcare organizations. In providing governance, IT leaders have the responsibility of ensuring that the HIE governance structure is reviewed effectively,

implemented, and communicated to all stakeholders in the healthcare organization. Such an approach is regarded as the first phase in the adoption of HIE. The leaders should also review various procedures and policies in HIE and communicate such reviews to internal stakeholders in the organization for a better collaborative HIE implementation. The leaders should educate multiple stakeholders on HIE governance structures that are important to them to promote accountability and understanding regarding their decision-making strategies. Such an approach helps in promoting effective adoption of HIE technology leading to desirable impacts in an organization and around the globe. The setting of IT governance structures helps in promoting the confidence of stakeholders in an organization since it helps in meeting the vision of the organization. The development of governance structures should be done in a collaborative way to help in promoting acceptance and compliance among stakeholders.

IT leaders have an obligation of ensuring that data are appropriately managed in healthcare facilities, feedback to HIE provided promptly, and the infrastructure of HIE monitored to ensure effective HIE implementation. Heath, Appan, Gudigantala et al. (2017) asserted that many global healthcare organizations are at the initial stages of HIE implementation; thus, they require effective controlling, monitoring, and evaluation of various HIE governance infrastructures to enhance the effectiveness of the system. The study also noted that many healthcare organizations find it challenging to invest their time in the evaluation, control, and monitoring of HIE, which leads to ineffective HIE. Moreover, the study also noted that the lack of proper methods for controlling and monitoring various organizational processes expose healthcare organizations to higher expenses and losses as they try to implement HIE (Heath, Appan, Gudigantala et al., 2017). Based on such facts, IT leaders should ensure that a proper controlling and monitoring system is designed to help in demonstrating accountability, mitigating poor performance in the organization, and promote the learning process of healthcare

providers in the use of HIE. IT leaders should thus provide a clear and defined control and monitoring systems and provide appropriate feedback channels aimed at improving quality among all organization stakeholders. Such a system can be provided through the development of appropriate metrics in the organization, providing a system that gathers information from various sources in the world. The leaders should also provide a monitoring system that identifies deviations in the industry, a system that reports back essential information to all stakeholders, and a system that helps in decision making aimed at implementing corrective actions. A study conducted by Kuziemsky et al. (2016) emphasized the importance of collaboration between the government and healthcare organizations in the adoption of HIE. The study, however, found that healthcare organizations are reluctant to implement policies developed by the government, which hinders the smooth running of HIE. According to the author, the HIE policies developed by the government are also not done correctly, which affects the creation of a governance structure (Kuziemsky et al., 2016). Lack of such collaboration prevents healthcare organizations from engaging in meaningful HIE initiatives in society.

Global Healthcare IT Governance

IT and Global Adaptation Of HIE

The technology infrastructure that supports decision making by physicians and has now become central to the healthcare provision is known as the Electronic Health Record (EHR) refers to the digital storage of healthcare information about an individual and includes observations, laboratory, tests, diagnostic imaging reports, treatments, therapies, drugs administered, patient identifying information, legal permissions, and allergies stored in various formats (Shickel et al., 2017). The challenge remains one of integration and targeted access to the data needed to treat patients (Lin et al., 2018; Raut et al., 2017). The government, through HITECH's goal, is not adoption alone but meaningful use of EHRs —that is, "their use by

providers to achieve significant improvements in care. This legislation ties payment specifically to the achievement of advances in healthcare processes and outcomes" (Kokol & Vošner, 2017, p. 21) The critical challenge relating to the meaningful use of the electronic health records is the exchange of data, their analysis, and sharing diagnosis and treatment information from the physicians to the people who need it. The shared, reciprocal patterns of interaction between physicians and other workers supported by technology usage, which develops into new processes of meaningful use over time, is what we consider to be an adaptation.

Preliminary results of the adoption of EHR have demonstrated small increases in the quality of care in diabetes, medication discrepancies and modest quality gains in US hospitals (Kannan et al., 2019; Kokol & Vošner, 2017; Lin et al., 2018; Linsky et al., 2019). There is an agreement in the current literature that EHR alone will not lead to improvements in the quality of care, as the adoption of such technologies will have to be accompanied by processes and policies that support improved patient care (Lin et al., 2018; Linsky et al. 2019). Accompanied by such meaningful use policies and procedures that match the use of the technology with improved patient outcomes, EHR has the potential to provide continuity of service and could be a tool supporting collaboration as physicians increasingly work with each other and other service providers. It appears that if physicians can use the technology to work with other healthcare workers, the quality of care they provide will improve.

The objective of a Telemedicine system is remote patient consultation. Therefore, it needs a network of a minimum of two terminals; One that seeks consultation and the other that provides consultation; that is the patient end that aims consultation and the specialist end that includes consultation. The telemedicine system prepares an electronic file of the patient records at the patient end and transfers it through a communication link to the specialized, where a specialist opens the file, examines the patient records, and gives his diagnosis and recommended

line of treatment (Felzen et al., 2017). The network, of course, can be much more extensive where several patient ends could seek consultations from several specialists' ends. The first and foremost condition in setting up the network is that the two ends have-to-have an agreement to find and provide consultations (Agnisarman et al., 2017).

The specialist end must receive the patient file and display the patient records correctly on the monitor to enable the expert doctor to make a diagnosis (Narasimha et al., 2017). The specialist doctor should be able to provide diagnosis and line of treatment. This process can be done in an offline mode, that is, without the patient and specialist simultaneously being present and talking to each other or online method where simultaneous data transfer and video teleconferencing takes place (Khandpur, 2017).

Barriers to Adopting Electronic Health Records

Workflow Disruption. In most cases, clinicians find it difficult to effect change due to their workflow disruptions. According to Roehrs et al., (2017), “The skills needed to listen to patients’ complaints, assess medical relevance, contemplate interventions, as well as type notes all at the same time, would require a significant level of concentration, typing skills, and familiarity with the application’s user interface, not normally found in the most adept computer users” (p. 19).

Time. Doctors and other healthcare professionals do not make proper arrangements to become familiar with the products provided by EMR vendors. At the same time, they do not have a way to implement the same. Moreover, some of the professionals may lack the basic training necessary to make the healthcare transform its operations (Enaizan et al., 2017). Taking extra time to use electronic health records and not being compensated for making a lighter load were perceived barriers. Doctors and nurses indicated that they required but did not always have

time to utilize the system in their entire time in the office or operation, to participate in further skill improvement, or to acquire new features (Gefen et al., 2019).

Cost. Doctors and other healthcare professionals have to weigh the costs of creating and supporting IT architecture, fields, and applications or sorting the help of external vendors to provide the most critical services their organizations require. For example, some of the most profound costs comprise purchase price, coordination costs, monitoring costs, and negotiating costs, upgrade costs, and governance costs. According to Knierim et al. (2019), "the costs act contrary to the benefits provided by the EMR" (p. 8). Moreover, Park et al. (2017) indicate that "for small to medium-sized practices without large IT budgets, costs remain the biggest barrier to adoption. The high up-front financial costs of implementing EMRs are a primary barrier to their adoption" (p. 505). This barrier is compounded by uncertainty over the size of any financial benefits that may accrue over time.

Concern about Security and Privacy. Even though the people want to have the benefits of technology in every sector of the economy, medical records can easily be jeopardized when they are in electronic formats than when they are in papers (Barrett, 2018). Electronic health records can expose patient information to hacks as they are not. There is added concern for privacy, confidentiality, and security for computerized patient information (Nassar et al., 2017).

Interoperability. According to Terry et al. (2018), "interoperability as a determinant factor for adopting these systems that interoperability could reduce rework by care providers; improve dissemination and movement of new medical knowledge among physicians" (p. 609). It is essential to have interoperability because it lowers the cost of electronic health records and makes it feasible for an individual or small group of physicians to acquire and adopt these systems (Terry et al., 2018).

Relation to Research Question

Based on the review of literature, it is evident that there are various barriers to the adoption of electronic health records. These barriers influence the way healthcare organizations to implement HIE systems. As such, the section helps to highlight some of the factors to be considered when implementing such systems, with a focus on giving more details on research question one of the studies. Additionally, in the following Table 1, clear connections of each research question have been tabularly displayed with respective sections from throughout the literature review chapter. Moreover, along with the connections and themes of sections from the literature review, the barriers/challenges of all four categories have also been added to the table to summarize this detailed literature review chapter.

Table 1

Literature Review Sections Connected to Research Questions

Literature Review Sections related to the Research Questions			
Research Questions	**Main Themes from the Research Questions**	**Connection with the Literature Review**	**Barriers/Challenges related to each Research Question**
Research Question 1: *What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?*	Enhancing Collaboration	The section related to *Healthcare Organization Leadership Roles in Promoting Global HIE* is directly related to addressing the first research question by addressing *Enhanced Collaboration* among various stakeholders. The Health Information Technology (HIT) occupies a conspicuous place in the need for the provision of healthcare with high-quality improvements and with reduced costs.	*Time.* Doctors and other healthcare professionals do not make proper arrangements to become familiar with the products provided by EMR vendors. At the same time, they do not have a way to implement the same. Moreover, some of the professionals may lack the basic training necessary to make the healthcare transform its operations. (Enaizan et al., 2017).

Research Questions	Main Themes from the Research Questions	Connection with the Literature Review	Barriers/Challenges related to each Research Question
Research Question 1 (Continued)	Enhancing Collaboration	The application of technology in health is seen to be taking a leading role in healthcare, thus resulting in a reduction in the value of the healthcare systems (Evans & Stoddart, 2017). Technology in healthcare has been broadly applied in robotics, however, in the modern clinics, information technology, in particular, becomes handy in the increase of the patient-centered and evidence-based medicine with the real-time availability of high-quality information. (Bauer et al., 2014).	Taking extra time to use electronic health records and not being compensated for making a lighter load were perceived barriers. Doctors and nurses indicated that they required but did not always have time to utilize the system in their entire time in the office or operation, to participate in further skill improvement, or to acquire new features (Gefen et al., 2019).
Research Question 2: *How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?*	Healthcare Management Influence Personnel	*Healthcare Leadership sections, including leadership theories, address roles of healthcare leadership* in positively influencing healthcare IT professionals as well as doctors, nurses, and other key workers to embrace the adoption of HIE systems in their respective healthcare facilities. These sections are directly related to addressing the second Research Question by addressing *Healthcare Management Influences.*	*Interoperability*. According to Terry et al. (2018), "interoperability as a determinant factor for adopting these systems that interoperability could reduce rework by care providers;

Research Questions	Main Themes from the Research Questions	Connection with the Literature Review	Barriers/Challenges related to each Research Question
Research Question 2 (Continued)	Healthcare Management Influence Personnel	Additionally, due to globalization and the rapidly changing technology, each leader must find the best way in which they can create change in the organization, and how that change can help drive the objective of the organization. Therefore, transformational leadership is one of the essential leadership theories that can help to effect change in any particular organization Transformational leadership style is best suited/suggested style noted based on the literature review.	Improve dissemination and movement of new medical knowledge among physicians. "It is essential because it lowers the cost of electronic health records and makes it feasible for an individual or small group of physicians to acquire and adopt these systems (Terry et al., 2018).
Research Question 3: *How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?*	Healthcare Leadership Create Seamless Collaboration Strategies	*Role of Health IT Leadership Promoting Global HIE* is the section directly. They are addressing the third Research question by discussing *Seamless Collaboration Strategies*. Health IT leaders are mainly concerned with the information related to the healthcare services and the patient database.	*Concern about Security and Privacy.* Even though the people want to have the benefits of technology in every sector of the economy, medical records can easily be jeopardized when they are in electronic formats than when they are in papers (Barrett, 2018).

Research Questions	Main Themes from the Research Questions	Connection with the Literature Review	Barriers/Challenges related to each Research Question
Research Question 3 (Continued)	Healthcare Leadership Create Seamless Collaboration Strategies	However, according to Everson (2017), the adoption of HIE requires that the leaders from the health department collaborate with other professionals from competitive healthcare organizations. For instance, a healthcare facility should be driven by the need to reach particular goals as a result of the push from other healthcare organizations. Everson shows that when the organizations compete with each other, they are more likely to explore the areas in which they have differences with their competitors and how such differences can create opportunities for improvements (Everson, 2017).	Electronic health records can expose patient information to hacks as they are not. There is added concern for privacy, confidentiality, and security for computerized patient information (Nassar et al., 2017).

Research Questions	Main Themes from the Research Questions	Connection with the Literature Review	Barriers/Challenges related to each Research Question
Research Question 4: *What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?*	Competitive Advantage while using HIE Systems	*Global Healthcare IT Governance* section addressed the *Competitive Advantage of HIE* using the facility while discussing the significant challenges of IT Governance. The technology infrastructure that supports decision making by physicians and has now become central to the healthcare provision is known as the Electronic Health Record;	*Cost.* Doctors and other healthcare professionals have to weigh the costs of creating and supporting IT architecture, fields, and applications or sorting the help of external vendors to provide the most critical services their organizations require. For example, some of the most profound costs comprise purchase price, coordination costs, monitoring costs, and negotiating costs, upgrade costs, and governance costs.
Research Question 4 (Continued)	Competitive Advantage while using HIE Systems	EHR refers to the digital storage of healthcare information about an individual and includes observations, laboratory, tests, diagnostic imaging reports, treatments, therapies, drugs administered, patient identifying information, legal permissions, and allergies stored in various formats (Shickel et al., 2017). The challenge remains one of integration and targeted access to the data needed to treat patients (Lin et al., 2018; Raut et al., 2017)	According to Knierim et al. (2019), "the costs act contrary to the benefits provided by the EMR" (p. 8). Moreover, Park et al. (2017) indicate that for small to medium-sized practices without large IT budgets, costs remain the most significant barrier to adoption

Chapter Summary

This chapter is a review of several types of research that were carried out in the past based on global leadership in the adoption challenges of healthcare information exchange. The Scholars mainly focus on areas of business, concept, or knowledge. The literature review is essential for the research because it gives it the background upon which the study anchors its main knowledge area. It also exposes the different areas that the past research did not address, hence help with clearly defining gaps that this study has helped to bridge.

Leadership is one significant aspect that demands the attention of most scholars because of the success of a business, and it is an essential requirement. Gill and Benatar (2016), shows that leadership is a critical factor in addressing global health issues. The methods of leadership differ depending on the organizations and industries. Leadership is vital in healthcare because it realizes the objectives within the healthcare system. Warren and other scholars say that the global and local healthcare practices mainly focus on new strategies that may assist in solving the variables within the healthcare system (Warren et al., 2016; Gopee & Galloway, 2017).

Various governments of different nations put their primary focus on the need to work on the critical areas with the help of all the stakeholders in healthcare within each of these territories (Braithwaite et al., 2017; Kostkova et al., 2016). Various strategies can be used to ensure that any particular health goal is achieved. One of the primary strategies involves the use of health information from other areas. The Health Information Exchange system is one of the most effective ways towards advancing the healthcare outcomes for the individuals living in any given region or any particular setting where such patient information is exchanged (Yuehong et al., 2016). Although some healthcare information exchange systems cause problems in the handling of the patient information, the international healthcare information exchange system dictates that such information should be exchanged through an electronic means so that the data can rely on

the intended person in the proposed healthcare organization or research center (Eden et al., 2016). Most healthcare systems in the United States, Canada, the United Kingdom, China, and Japan, among other developed countries, have healthcare systems that are quite structured and organized. However, in all these countries, the success of the healthcare information exchange does not depend upon the structure or the stability of their system; instead, it relies on the leadership of the healthcare organizations.

In the development plan of any system, the concept forms the primary ideological approach in which a working system can be formulated. In Figure 1, the Theoretical framework for the roles of leadership in HIE is formulated with each factor contributing to the realization of the roles. In this conceptual framework, the diamonds are sub-categories that provide the roles played by each concept in the worldwide adoption challenges of the Patient Healthcare Information Exchange (HIE).

There are various leadership theories of leadership. The great man theory suggests that leadership is an inherent trait or can be inherited. It indicates that people born in a generation of great people are infused with ‘greatness’ themselves by obtaining the attributes of leadership (Stanley, 2019). Contingency theory suggests that good leadership adopt different techniques to face different situations. They comprehend the versatility of leadership approaches that need to be matched in the current context. Transformational theory ensures that there are adjustments in individuals and social systems. The main objective is to improve the leader’s charisma and subsequently to turn the followers into leaders. Style and behavior theory argue that how leaders behave and how they perform their duties is critical in how they respond to specific stimuli. It gives credence to the idea that leaders can be developed and conditioned so that they can optimize their performance.

Various kinds of leadership led to the realization of the multiple goals of any particular organization. They include team leadership, organizational leadership, and national-level leadership. This chapter has enlisted several impacts on ethical leadership in the healthcare system. It contains research that has been carried out in different parts of the world to assess the healthcare system in such nations these countries include China, Canada, United Kingdom, Western Europe, and the others to see the difference in managing the healthcare system across the world. Please see Table 9 in APPENDIX B for a tabular list of a systematic filtered list of some of the critical articles used in this literature review process.

Chapter 3: Methodology

Introduction and Background

The chapter is a detailed description of the selected qualitative research methodology based on systematic and strategic document analysis utilized by the researcher to identify the data pertinent to each of the four research questions. The chapter provides the strategies for data collection as well as the methods used in carrying out every part of the study and providing justification for every method used (Festinger et al., 2013). This chapter also emphasizes the various approaches used in the data collection as well as the analysis (Kumar, 2019). Primarily, the methodology chapter stresses the techniques used, which makes the research ethics in all the aspects (Kazdin, 2019). Since the current study was a qualitative research study based on document analysis, the systematic and strategic document analysis approach was the most useful in conducting thorough research. Moreover, this chapter describes the specific approaches used in data collection, preservation, and data analysis techniques.

The current research was conducted to understand the challenges related to the adoption of the HIE System and the role of healthcare leadership plays in its global expansion for the patients, to enable for sharing of patient medical details across the border. The study had been developed entirely from the provision of the approach the study should take by defining the main objectives for carrying out the study. Thus, chapter one provided a framework and a definition of the research in entirety. The initial chapter of this study forms the foundation upon which the entire research rests. Every part of this research mainly builds from the initial definitions, particularly, the objective and the research questions. The second chapter was dedicated to the review of the literature in which specific aspects of HIE that are essential in the current study. For instance, the researcher explored various elements of leadership in the global adoption of healthcare information exchange. Since there are several professionals in the medical and

information technology fields, it is necessary to create an understanding of how specific aspects such as interoperability, technology data flow, and healthcare data security contribute to the development of the HIE, and how healthcare leadership in each of these categories of the profession can affect the adoption of the exchange platform. In the current research approach, the second chapter helped explore the most appropriate techniques, such as research methods and design, to ensure that the main aim of the chapter is realized, and the objectives of the study are adequately developed.

The research questions for the current study is based on the need to identify the enabling as well as delimiting factors and the various opportunities for the healthcare information exchange in the global business settings. These research questions would mean that the research outcome should provide valid and valuable recommendations that prosed to assist healthcare leadership in addressing the various challenges faced by healthcare leaders in-charge of cross-border operations. The research questions sought to understand the implementation of the HIE systems by different healthcare organizations and information exchange platform vendors. The questions also brought to an understanding of the role healthcare leaders play in the enhancement of the collaboration amongst different stakeholders in the exchange platforms. Moreover, there was a need to understand the sources of competitive advantage for various healthcare organizations and how leaders might utilize policies to motivate collaboration in the adoption of multiple HIE systems. By principle, the selected research questions were meant to satisfy patient needs, organizational needs as well as vendors.

The research questions were designed before understanding the study and led to enabling the study to adopt a most appropriate protocol, which illustrates the various strategies used to search for appropriate qualitative data as well as other information. To receive the best outcomes, this research used keywords to help find the best resources with the needed data that could lead

to answering the research questions, develop the discussion, and give the best recommendations. Moreover, the current research also employed the use of healthcare databases at different organizational levels. Such databases contain resources that are most current, and which have been written and reviewed by scholars in specific disciplines. For the present study, the major disciplines, including medicine, nursing, pharmacy, information technology, organizational leadership, and globalization. However, other disciplines are also of the essence in the current study, as the research is developed from a broad perspective. Since HIE has been one of the latest and monumental developments in the healthcare sector, it was crucial to utilize data published between 2016 and 2020. Moreover, the databases used were strictly selected in line with the need for peer-reviewed and most recent articles.

The primary healthcare databases used for the current research include the Cochrane Library, JSTOR, Wiley, Science Direct, MEDLINE, EBSCOHOST, Palgrave journals, Tandfonline, CINAHL, PsycINFO, Ethos, Sage, and ProQuest. The search queries were used in every database in a similar manner, which ensured that the data obtained from the databases resulted in varied information from which discussion could arise. However, the sources for the data were used hand in hand with the other research articles used in other chapters. English was used as the only language in the search for the data in all the databases. This indicates that there might be other publications that could contain useful information that may not be captured sources found from the databases. However, such speculations are considered only in case the sources were not translated to English, most of which were translated.

Research Questions

The following are the research questions adopted in this study:

Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?

Question 2: How does healthcare management influence doctors, nurses, health IT professionals and other key workers to adopt HIE?

Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?

Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?

Settings for the Study

Role of the Researcher

The setting of the study was such that only one researcher was conducting the research. The role of the researcher included the collection of data using the best methodology that suited the study, and that had enabled the collection of data relevant to the research topic and questions. The researcher was conducting a qualitative study in which he obtains data from published literature relevant to the topic of the study. The data and literature material used in this study were obtained from various databases.

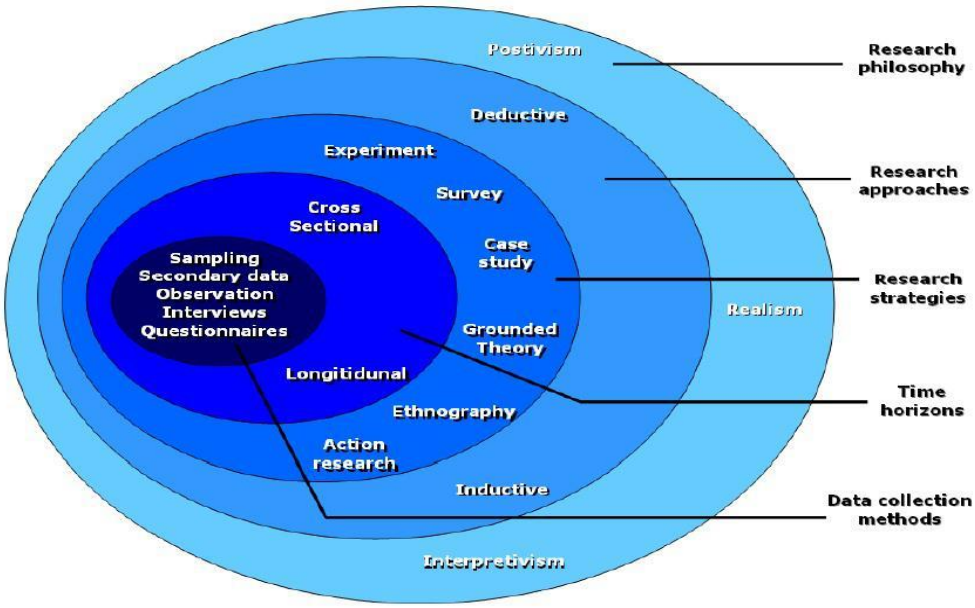
Research Process

The development of research onion in which the processes of developing a practical methodology for current research-based on deductive logical, strategic and systematic data analysis led to a more straightforward way of conducting research that requires in-depth analysis. It contained different stages that a researcher utilizes at the point of developing various strategies used in the study. The research onion had multiple layers that illustrate in detail what the steps represent for the researcher to carry out the study. It showed that there was a need to define the

approach taken in carrying out the research. Figure 2 below showed the research onion and its various layers (Cussen & Cooney, 2017). Each of the layers was so structured that the outer layer covers all the inner layers. In the structure of the onion, one side of the onion stretches further than the other from the middle, showing that the approach began from the outside as it gets to the inner parts of the research.

Figure 2

Research Onion (Cussen & Cooney, 2017)



The first layer of the research onion is the philosophy, which covers the entire scope of the study and thus dictates the approach the research must take. For instance, the current study is qualitative research based on the philosophy that the research is looking at the qualitative aspect of the study; hence it may be broadly defined in terms of the entire scope of the current research study. The second layer provides the research approaches. In this layer, the researcher must know all the methods available and then select the best that result in the best outcomes. Research strategies follow and involve the selection of strategies that can help the researchers achieve their

objectives. The fourth layer is the time horizon, which the researcher has to identify before conducting the actual research. The first four stages are mainly meant to provide the researcher with the knowledge to prepare for the research and be able to identify the methodology to use in carrying out the study. It is essential to note that research onion can be utilized in all types of research as it can adapt to any particular study and applicable in various contexts. The current research used the above research approach to organize the study and ensure that it resulted in the best outcome from all the conducts of the study. Each of the sections has been elaborated below.

The Research Philosophy

Researchers are required to consider and practice to put the various philosophical commitment in place. This is important since the researchers must choose the strategy they have to employ as such strategies influence the search for the data but may also affect the specific point at which the study can commence. Moreover, without the research philosophy, the researchers may find it challenging to comprehend what they study at any point in the course of the research (Saunders et al., 2009). There are two specific positions that researchers can take in the choice of the philosophy, that is, epistemology and ontology (Kivunja & Kuyini, 2017). The current research had considered the epistemology position as it entails the knowledge in a research discipline acceptable for scholarly purposes.

Epistemology enables researchers to manipulate the results based on their understanding. In particular, interpretivism makes it easy for researchers to collect the views and roles of the participants and interpret them based on the research objectives. For instance, different participants in diverse organizational levels can respond to the same question, but their feedback may be interpreted differently according to the researchers' interpretation. It is essential to note that interpretivism does not take away the ideas of the participants but interprets them following the research objectives. However, it considers the interests of people and makes it part of the

research. As a result, interpretivism differs from other approaches as it distinguishes itself from the use of static knowledge (Žukauskas et al., 2018).

Research philosophy is essential because it gives the researcher the ability to understand the definition of knowledge in any particular field precisely. Research philosophy leads to the development of the assumption that results in the justification for the methodology used for the study in addition to guiding how to achieve the research objectives. Therefore, the decision to use any particular research philosophy entails the type of research to be carried out. The researchers can choose between any of the two ontological frameworks in their research process. For example, the researchers might select positivism or constructivism as their intentional pick. Positivism differs from constructivism since a researcher who adopts positivism makes a critical assumption that the subject under study and the reality are independent of each other. That is, in this case, the participants in any level of study do not have to relate directly with the information exchange platform or leadership in any particular way. However, their knowledge of the idea is critical to informing the research.

On the other hand, a researcher who chooses to use constructivism is forced to assume that the participants of the research have to create an understanding of the social phenomena under investigation. That is, the participants are expected to understand how the matter under investigation relates to the human aspects. Even though the two stances differ from each other, each of them occupies a similar position in the research. The researchers can choose to use either of the two as long as they are aware of the different dynamics of the research and people's views, and how such informational dynamics can be integrated into a single outcome. The current research used the positivist approach as this approach had justified the methodology adopted for the study because this study was based on qualitative systematic strategic document analysis.

Research Approach

Two types of research approaches exist and include deductive and inductive approaches. The inductive approach provides the researcher with the ability to consider the study from a specific point to view to a general view. In this approach, the researcher studies a single phenomenon and then tries to understand how the phenomenon can relate to other phenomena. Essentially, a researcher who adopts the inductive approach begins by observing a phenomenon and then creating patterns and models of the observed information.

On the other hand, the deductive approach starts with the development of the hypothesis that aligns with the theories that already exist and then designs a method for the design to test the hypothesis. A deductive approach applies to studies that seek to probe how fit the observed issue is with the expectations of the research. Based on the approach, it can be applied in both quantitative as well as qualitative research. However, deductive approaches work well with positivism, in which the hypothesis is framed and then tested with the data collected. Therefore, when researchers choose to use a deductive approach, they have to establish the general theory and then test the information or knowledge developed from the various processes carried out in the research. As such, the current research focused on the collection of data then concentrate on the study, as there was no particular framework upon which the data collection was defined because this study was based on qualitative systematic strategic document analysis.

Research Design

It is essential to describe how the various research processes were completed before carrying out the study. The research design describes the different methods that have been used in the completion of the study. Such a research design forms a framework that results in the best methodology that the researchers adopt, the selection of the participants, and analysis of information collected from the research resources. Some of the characteristics of research design

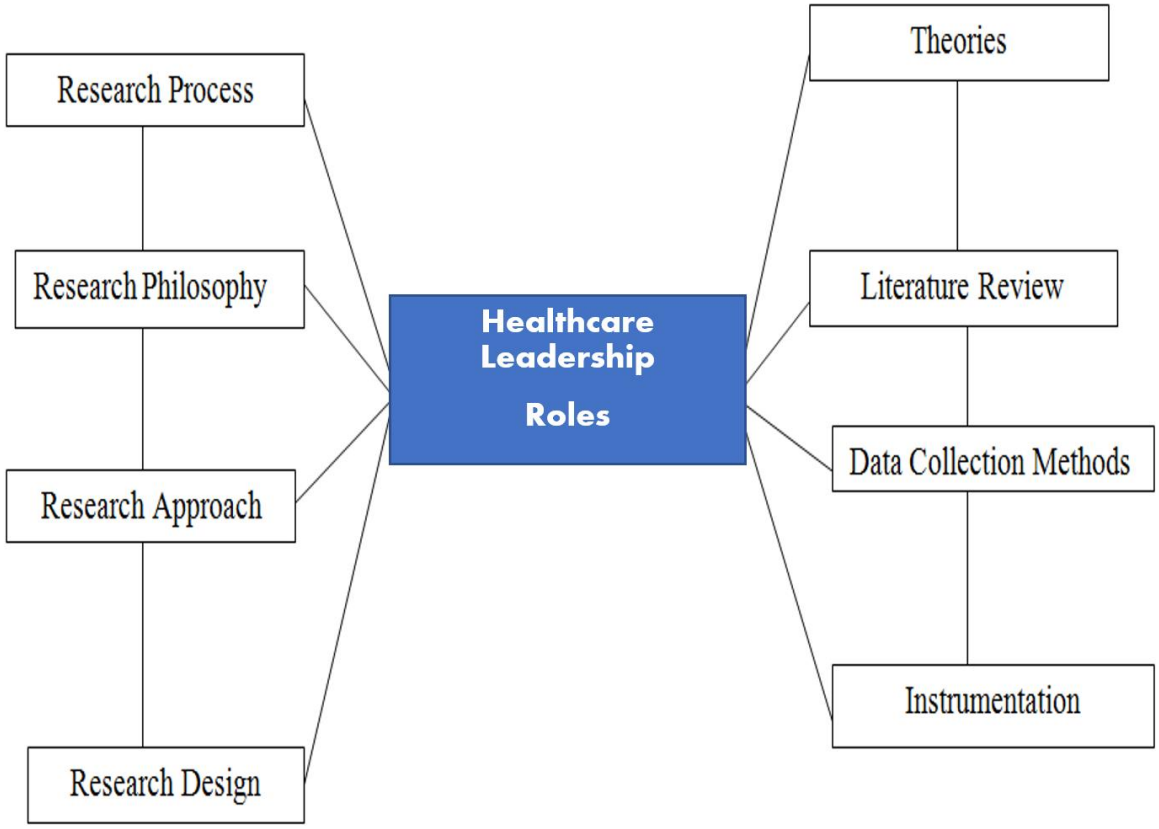
include exploratory, explanatory, and descriptive research. In exploratory research, the researchers mainly focus on providing the best explanation that describes the features of the participants and the population they represent or a social phenomenon under investigation. The research design can be viewed as a suitable method to use with a quantitative framework, where the research can easily establish the influence of one variable on another.

On the other hand, a descriptive research design provides a reflection based on the responses provided by the participants in the study. As a result, it mainly relates to the ethnographic survey, although a quantitative approach can be adopted as well. For instance, when studying the demographic characteristics of the population, the researchers analyze the responses provided by the participants and then reflect on the possible explanation of why the participants responded the way they did. On the other hand, exploratory research concerns with a thorough investigation of an issue in the population under study. It usually occurs when not more about the issue is known, but there exist some intimations of that can give guidance. For example, it can occur during a cohort study to understand various aspects of the issue under study.

In most cases, however, descriptive research provides a formula for completing a specific project as it leads to the provision of information on the subject in the investigation. Figure 3 below is a conceptual framework of the research design used in this study. Each rectangle surrounding the central theme of healthcare leadership roles represented various elements that connect the qualitative case study-based methodologies applicable to this study.

Figure 3

Conceptual Framework of Healthcare Leadership



In the following Table 2, the breakdown of each research question and strategy to answer those questions have been laid out. Table 2 is a tabular breakdown of necessary factors/steps involved to address each research question. This study was Qualitative, which was based on a systematic strategic document analysis. The following Table2 is a tabular breakdown of resources gathering strategy of documents to answer all selected research questions, including two categories of research sources, marked as Tier I and Tier II, the time duration for database search and possible data validation strategy.

Table 2

Methods to Address and Answer Each Research Question

Qualitative Systematic Strategic Document Analysis Framework to Answer Research Questions					
Research Questions	**Tier I: Resources (Scholarly Databases)**	**Tier II: Resources (Government Resources)**	**Date Range for Search**	**Qualitative Analysis Software for coding**	**Validation Strategy**
Research Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?	Cochrane Library; JSTOR; Wiley; Science Direct; MEDLINE; EBSCOHOST; Palgrave journals;	U.S. Department of Human Health Services; U.S. Center of Medicare and Medicaid; U.S. National Institute of Health; U.S. Office of National Coordinator Health Information Technology;	Peer-reviewed Articles, Journals, Publications were reviewed as part of the first category or Tier I set of Qualitative Strategic Document Analysis, and Government and Corporate Healthcare related documents printed and published within the last five years (between 2016 and 2020)…	NVivo Qualitative Analysis Tool / Software	Objectives of all studies were clearly stated; Health Information Exchange (HIE) related focused studies; Specifically addressing Healthcare Leadership Roles and Challenges, AND Effectiveness of related Studies around Health Information Management (HIM).

Research Questions	Tier I: Resources (Scholarly Databases)	Tier II: Resources (Government Resources)	Date Range for Search	Qualitative Analysis Software for coding	Validation Strategy
Research Question 1 (continued)	Tandfonline; CINAHL; PsycINFO; Ethos; Sage; AND ProQuest.	World Health Organization; Public Health Agency of Canada; U.K. National Health Services AND European Health Management Association.	…were reviewed as part of a second category or Tier II set of Qualitative Strategic Document Analysis; Strategy of Content Analysis applied and used to review 50 carefully selected resources/studies (for each category) by applying specific quality measures, hence answering each Research Question	NVivo Qualitative Analysis Tool / Software	Finally, Cross-Sectional Systematic and Strategic Data Analysis was performed to validate and authenticate the data from both (Tier I and Tier II) data points by Cross-Examining them.

Research Questions	Tier I: Resources (Scholarly Databases)	Tier II: Resources (Government Resources)	Date Range for Search	Qualitative Analysis Software for coding	Validation Strategy
Research Question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?	Cochrane Library; JSTOR; Wiley; Science Direct; MEDLINE; EBSCOHOST; Palgrave journals;	U.S. Department of Human Health Services; U.S. Center of Medicare and Medicaid; U.S. National Institute of Health; U.S. Office of National Coordinator Health Information Technology;	Peer-reviewed Articles, Journals, Publications were reviewed as part of the first category or Tier I set of Qualitative Strategic Document Analysis, and Government and Corporate Healthcare related documents printed and published within the last five years (between 2016 and 2020)…	NVivo Qualitative Analysis Tool / Software	Objectives of all studies were clearly stated; Health Information Exchange (HIE) related focused studies; Specifically addressing Healthcare Leadership Roles and Challenges, AND Effectiveness of related Studies around Health Information Management (HIM).

Research Questions	Tier I: Resources (Scholarly Databases)	Tier II: Resources (Government Resources)	Date Range for Search	Qualitative Analysis Software for coding	Validation Strategy
Research Question 2 (continued)	Tandfonline; CINAHL; PsycINFO; Ethos; Sage; AND ProQuest.	World Health Organization; Public Health Agency of Canada; U.K. National Health Services AND European Health Management Association.	…were reviewed as part of a second category or Tier II set of Qualitative Strategic Document Analysis; Strategy of Content Analysis applied and used to review 50 carefully selected resources/studies (for each category) by applying specific quality measures, hence answering each Research Question	NVivo Qualitative Analysis Tool / Software	Finally, Cross-Sectional Systematic and Strategic Data Analysis was performed to validate and authenticate the data from both (Tier I and Tier II) data points by Cross-Examining them.

Research Questions	Tier I: Resources (Scholarly Databases)	Tier II: Resources (Government Resources)	Date Range for Search	Qualitative Analysis Software for coding	Validation Strategy
Research Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with various healthcare policies?	Cochrane Library; JSTOR; Wiley; Science Direct; MEDLINE; EBSCOHOST; Palgrave journals;	U.S. Department of Human Health Services; U.S. Center of Medicare and Medicaid; U.S. National Institute of Health; U.S. Office of National Coordinator Health Information Technology;	Peer-reviewed Articles, Journals, Publications were reviewed as part of the first category or Tier I set of Qualitative Strategic Document Analysis, and Government and Corporate Healthcare related documents printed and published within the last five years (between 2016 and 2020)…	NVivo Qualitative Analysis Tool / Software	Objectives of all studies were clearly stated; Health Information Exchange (HIE) related focused studies; Specifically addressing Healthcare Leadership Roles and Challenges, AND Effectiveness of related Studies around Health Information Management (HIM).

Research Questions	Tier I: Resources (Scholarly Databases)	Tier II: Resources (Government Resources)	Date Range for Search	Qualitative Analysis Software for coding	Validation Strategy
Research Question 3 (continued)	Tandfonline; CINAHL; PsycINFO; Ethos; Sage; AND ProQuest.	World Health Organization; Public Health Agency of Canada; U.K. National Health Services AND European Health Management Association.	…were reviewed as part of a second category or Tier II set of Qualitative Strategic Document Analysis; Strategy of Content Analysis applied and used to review 50 carefully selected resources/studies (for each category) by applying specific quality measures, hence answering each Research Question.	NVivo Qualitative Analysis Tool / Software	Finally, Cross-Sectional Systematic and Strategic Data Analysis was performed to validate and authenticate the data from both (Tier I and Tier II) data points by Cross-Examining them.

Research Questions	Tier I: Resources (Scholarly Databases)	Tier II: Resources (Government Resources)	Date Range for Search	Qualitative Analysis Software for coding	Validation Strategy
Research Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?	Cochrane Library; JSTOR; Wiley; Science Direct; MEDLINE; EBSCOHOST; Palgrave journals;	U.S. Department of Human Health Services; U.S. Center of Medicare and Medicaid; U.S. National Institute of Health; U.S. Office of National Coordinator Health Information Technology;	Peer-reviewed Articles, Journals, Publications were reviewed as part of the first category or Tier I set of Qualitative Strategic Document Analysis, and Government and Corporate Healthcare related documents printed and published within the last five years (between 2016 and 2020)…	NVivo Qualitative Analysis Tool / Software	Objectives of all studies were clearly stated; Health Information Exchange (HIE) related focused studies; Specifically addressing Healthcare Leadership Roles and Challenges, AND Effectiveness of related Studies around Health Information Management (HIM).

Research Questions	Tier I: Resources (Scholarly Databases)	Tier II: Resources (Government Resources)	Date Range for Search	Qualitative Analysis Software for coding	Validation Strategy
Research Question 4 (continued)	Tandfonline; CINAHL; PsycINFO; Ethos; Sage; AND ProQuest.	World Health Organization; Public Health Agency of Canada; U.K. National Health Services AND European Health Management Association.	…were reviewed as part of a second category or Tier II set of Qualitative Strategic Document Analysis; Strategy of Content Analysis applied and used to review 50 carefully selected resources/studies (for each category) by applying specific quality measures, hence answering each Research Question	NVivo Qualitative Analysis Tool / Software	Finally, Cross-Sectional Systematic and Strategic Data Analysis was performed to validate and authenticate the data from both (Tier I and Tier II) data points by Cross-Examining them.

Procedures and Instruments

Samples

When investigating any particular phenomenon in any setting, it is not possible to collect data from every member of the population, or all the sources of information. Therefore, a section of the members is selected and studied. Therefore, a sample is a segment that represents the entire population under investigation (Levy & Lemeshow, 2013). Samples are used differently depending on the research design (Wright et al., 2016). For instance, in a qualitative research

design, the sample is quite small compared to the samples used in quantitative research since most of the analyses are conducted from the varied sources of information. Still, at the same time, the researchers can formulate their reflection and understanding of the matter under investigation and create a possible outcome.

On the other hand, sample sizes in quantitative research tend to be large and are selected to ensure that the data can provide a reliable outcome from the study. For purposes of this dissertation, the sample size had looked at specific and reliable data related to Health Information Exchange as part of the qualitative systematic strategic document analysis. The current study is qualitative research based on document analysis; therefore, official healthcare leadership and technology-related documents from sources such as government health records, health-ministries records, and other related official data records available between the dates of 2016 and 2020 were used as a reliable sample. A breakdown of the document analysis table related to all research questions had been presented later in this chapter.

Sample Size

Before conducting research, it is essential to understand the size of the population and choose the best size of the sample selected (Martínez-Mesa et al., 2016). For instance, researchers can choose to use a given percentage of the entire population as the sample. This is possible in cases where the researchers know the exact number of the population, hence selects a portion to represent the whole members. However, in other cases, the population cannot be precisely determined. The sample size does not have a serious significance in qualitative research since the concept of representation is not vigorously applied for the research to be valid. However, in quantitative research, sample sizes matter the most when the reliability of the results is concerned. For example, when the sample size is less than 30%, it can result in outcomes where each respondent may skew the research outcome. Therefore, in such cases, the more the

number of articles and databases used, the more reliable the research has been in producing better results. Since this study was a qualitative systematic strategic document analysis, it aimed to analyze different documents from various resources as laid out previously in Table 1 as part of this methodology, hence this sample size is the total number of resource documents that had been analyzed to answer each research question.

Sampling Techniques

Sampling techniques refer to the methods used to select an appropriate sample size from a more extensive research area. Several methods can be used to sample the population under investigation. Researchers can decide to use a random sample, which represents phenomena, subjects, or individuals chosen randomly from the population under investigation. When a random sampling technique is used, the outcome is a random distribution, which implies that there is a possibility for skewing of the data based on the random nature of the selection of the sample. A researcher who uses random samples in a population is likely to select more males than females, thus affecting the outcome, especially if the finding is supposed to provide a uniform issue. Moreover, such a selection can result in undistributed ages in case the research is conducted across the entire database and research articles used in the current study.

Similarly, when the study involved qualitative strategic document analysis, the sample selected randomly can end up leaning towards quantitative studies as opposed to qualitative research. The second sampling method is the stratified sample, which can be utilized when the researchers wish to ensure that the participants selected for the study fully represent the most outstanding characteristics of the population. For example, such research should ensure that the age differences are adequately represented in the sample; gender numbers relate to the population, education levels, and other factors relevant to the study. The third sampling technique is the convenience sample, which involves taking a sample from an already established

framework, for instance, from a database. A database provides a lot of organized data, which in itself may inform the research. Such data can be utilized over and over in different situations to make different conclusions based on the objectives of specific research. The use of convenience samples can be appropriate in cases whereby the study is mainly dealing with the application of researchers' reflections. The researchers can choose to use a single database or several related databases, depending on the depth and application of the research outcome. Since this study was based on a qualitative systematic strategic document analysis, sampling of document strategy had been laid out in Table 1, as criteria set to gather relevant documents to answer each research question.

Data Collection Method

Data collection methods are the processes used to gather the required information for the research (Paradis et al., 2016). Based on the strategies adopted and research design, the researcher selects the most effective technique for choosing the sample, which then provides the necessary data for the research. Based on the type of data needed, the researcher also selects the best methods that can best help in the gathering of the information identified. Data collection methods may vary depending on the source of the data. Essentially, there are two different ways to get data. These include primary data and secondary data (Ajayi, 2017). Primary data entail the data collected from first-hand sources. For example, researchers go to the field and collect data by observing the phenomenon under investigation. The investigative research also takes place when the researcher uses techniques such as interviews and questionnaires, whereby the participants respond to the questions asked without referring to an external source. Such data are treated as first-hand because they have not been used to inform other research work in any subject area.

On the other hand, secondary data are obtained from various publications. In most cases, such publications are required to be peer-reviewed so that the information collected can be credible, hence useful in informing further research in the same subject area, or any other field of study. The most common secondary data sources include books, journal articles, magazines, and databases, among others (Kumar, 2019). The current study was based on qualitative systematic strategic document analysis; therefore, it had relied on secondary data collection to answer all selected research questions.

Data Collection Instruments

Upon understanding the two sources of data, that is, primary data and secondary data, researchers can use the data obtained for both quantitative and qualitative research. The current research only utilized secondary data. However, it is also essential to mention the methods used to collect primary data. As aforementioned, primary data might be gathered through processes such as using observation, interviews, case studies, questionnaires, projective methods, and laboratory tests. Primary data have the advantage over secondary data in that it is unique and possesses the ability to give first-hand information. Secondary data, on the other hand, have an important application in research and are obtained from already printed or existing literature. In some instances, the information may be written by other researchers, or maybe a report on some project. In some situations, secondary data may not have any direct scrutiny to verify if the information is true. For instance, secondary data obtained from various internet sites may not readily be credible. Thus, when used, such research may require a more in-depth reflection and application.

As the current study was based on qualitative systematic strategic document analysis, it utilized secondary data instead of primary data since secondary data are easy to gather and use compared to primary data. Moreover, the collection of primary data was quite a cumbersome

process and has required complicated processes. When collecting primary data, data collection tools such as questionnaires are used, but these instruments have to be thoroughly examined to ensure that they provide valid results. Since there are several methods for administering questionnaires, for instance, through face-to-face, and through telephone, the process may be tedious. It may require a lot of preparations before the actual data collection process. The questionnaires are usually designed so that the researcher can get as much information as possible from the participants so that they can utilize such information to make meaningful conclusions to meet the objectives of the study. The questionnaires have several advantages; however, the main advantage is that they are the cheapest and the most effective tool for collecting data from an infinite number of participants.

Furthermore, questionnaires provide the researcher with the ability to either use open-ended questions for the participants or closed-ended questions. The open-ended questions enable the participants to offer their views in their own words, which may provide more information regarding the specific questions asked. Since different participants may respond differently, the researchers have the opportunity to extract as much information as they can, which has been based on the number of participants and their varied responses. On the other hand, closed-ended questions pin the respondents to provide specific answers to the questions asked. In most cases, closed-ended are used for quantitative research. Apart from being a cheap method for collecting data, it also results in reliable data, especially when the questionnaires are structured with more questions that can result in abstract information extraction. Even though the questionnaire has some of the best utilities in data collection, the current research does not utilize the instrument to collect data as the information for the research is obtained from document analysis, which are from secondary sources. Since this study is a qualitative systematic strategic document analysis, this dissertation does not include study participants; rather, the data used in this study is not from

subjects who participated in some experiments or who give their opinions concerning a particular subject matter. As such, questionnaires were not utilized in this dissertation. The current research used secondary sources of data, that is, documents from which analysis of content was performed to find information that is adequate to answer the research questions or meet the study objectives as part of qualitative systematic strategic document analysis.

Data Sources for the Study

Secondary Data

The qualitative systematic strategic document analysis had been used to further the research in this current study. Such data have been researched by different scholars in different fields relevant to the current study. However, other information was available in databases and may not be peer-reviewed. However, the documents contain vital information that might inform the current research. Essentially, secondary data were information obtained from the opinions or the work produced by other researchers but may extend beyond research realms. However, subsequent studies pay close attention to the conclusions arrived by the resources used to inform their research. For example, the conclusion from the researchers can be used as the secondary data since other scholars have thoroughly processed and researched such information.

Similarly, secondary data can also result from statistical analysis of surveys. It is, however, limited to the extent to which such secondary data can be used, based on the way it was collected, analyzed, and presented (Cheng & Philips, 2014). For instance, a newspaper article may be considered as both primary and secondary sources, depending on whether the presenter of the article was present at the instance of the event reported. In that case, the article can be considered a primary source. However, if the reporter reports on the events based on the accounts of others, then the information becomes second-hand. Newspaper publishers may conduct a study such as the social attitudes at some particular time in history, or a case study of

causes of crime in different parts of the area under study may be considered a primary source of data when a newspaper prints them. As such, the most effective way to distinguish whether a newspaper article can either be a primary or secondary source relies mostly on the use of the data obtained from such a resource. The current study had used resources that might be considered primary, but for the interest of this study, and how such data are used, here, they become secondary information. It is found that secondary data are easy to collect and explore (Ajayi, 2017). Therefore, studies that adopt secondary data as a source of information use articles, journals, electronic books, books, podcasts, or videos, as long as such resources related to the discussion of the research (Leonard, 2017). In this case, all the articles must address the role of healthcare leadership in patient information exchange (HIE). The flowchart below (Figure 4) showed the methods of data collection, listed the approach to use the secondary sources, search strategy, and article selection as part of qualitative systematic strategic document analysis.

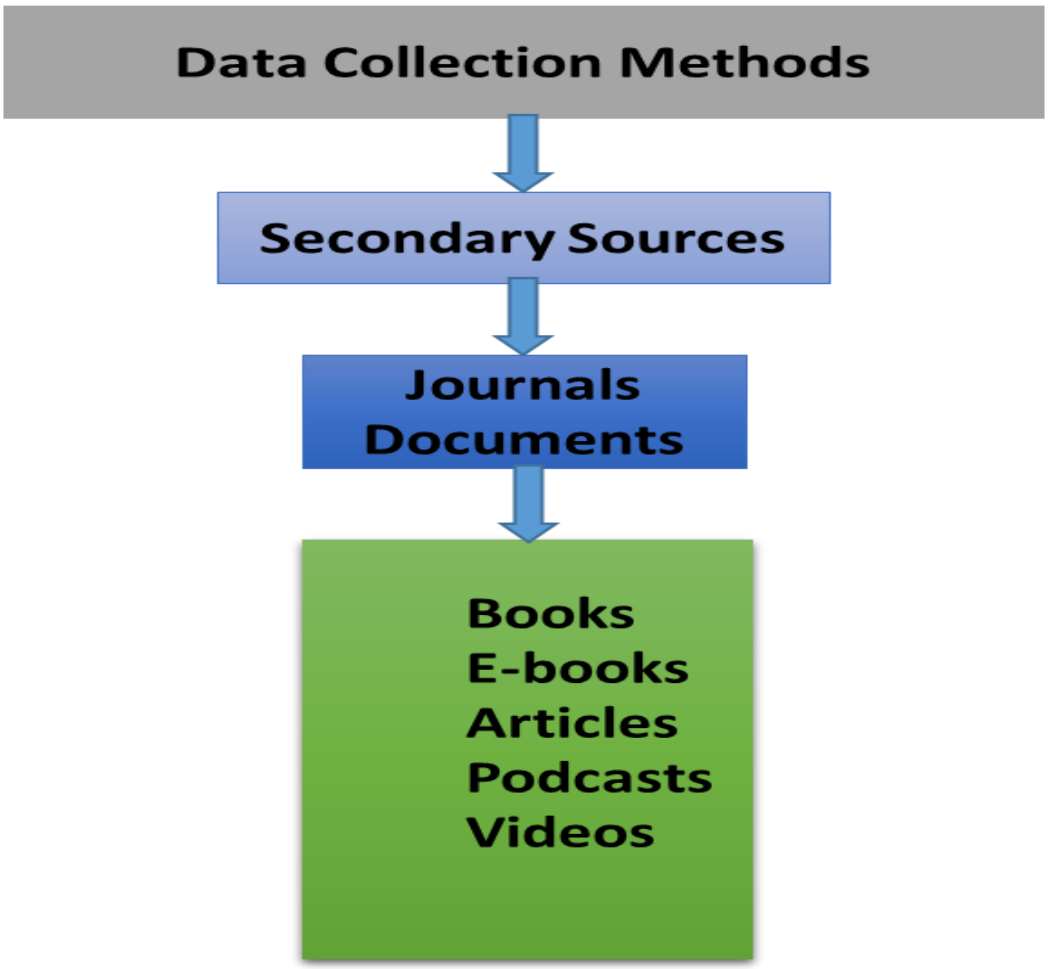
Eligibility Criteria

Each research protocol possesses several guidelines for the samples used in the study. The guidelines provide the eligibility criteria and describe all the characteristics that all the participants share. Since the criteria differ from one research to the other, the most common differences arise from age, gender, health condition, medical history, and in some cases, education level. In the case of current qualitative strategic document analysis, the eligibility criteria mainly rely on the article's ability to address the main issues tackled by the research and how such information can inform the discussion and recommendations of the later studies. For the current research, empirical as well as theoretical studies related to leadership, globalization, and HIE have been examined. The research involved a systematic search for the articles that were reviewed in the relevant fields and were published in peer-reviewed journals as part of qualitative systematic strategic document analysis. Such articles were searched from databases

such as those containing materials on social sciences, globalization, information technology, business, medicine, ethics, and other relevant fields. Also, the research involved the search of information from articles that were not peer-reviewed, but these resources were mainly obtained from business articles or government sites. During the search, only the English language was used for articles published, limiting the search to the database of articles starting from the year 2016. The current study considered all the types of studies conducted in various relevant fields, editorials, commentaries, organizational reports, expert opinions, and conference outcomes that emphasized international leadership and patient information exchange. Moreover, some non-scholarly articles with primary data were also considered as critical sources of information for the current research, thus enriched the information obtained from peer-reviewed articles. Furthermore, a summary of the various authors from different sites was provided in the table below to ensure that all inclusion and exclusion criteria were met.

Figure 4

Procedures Database Search Strategy



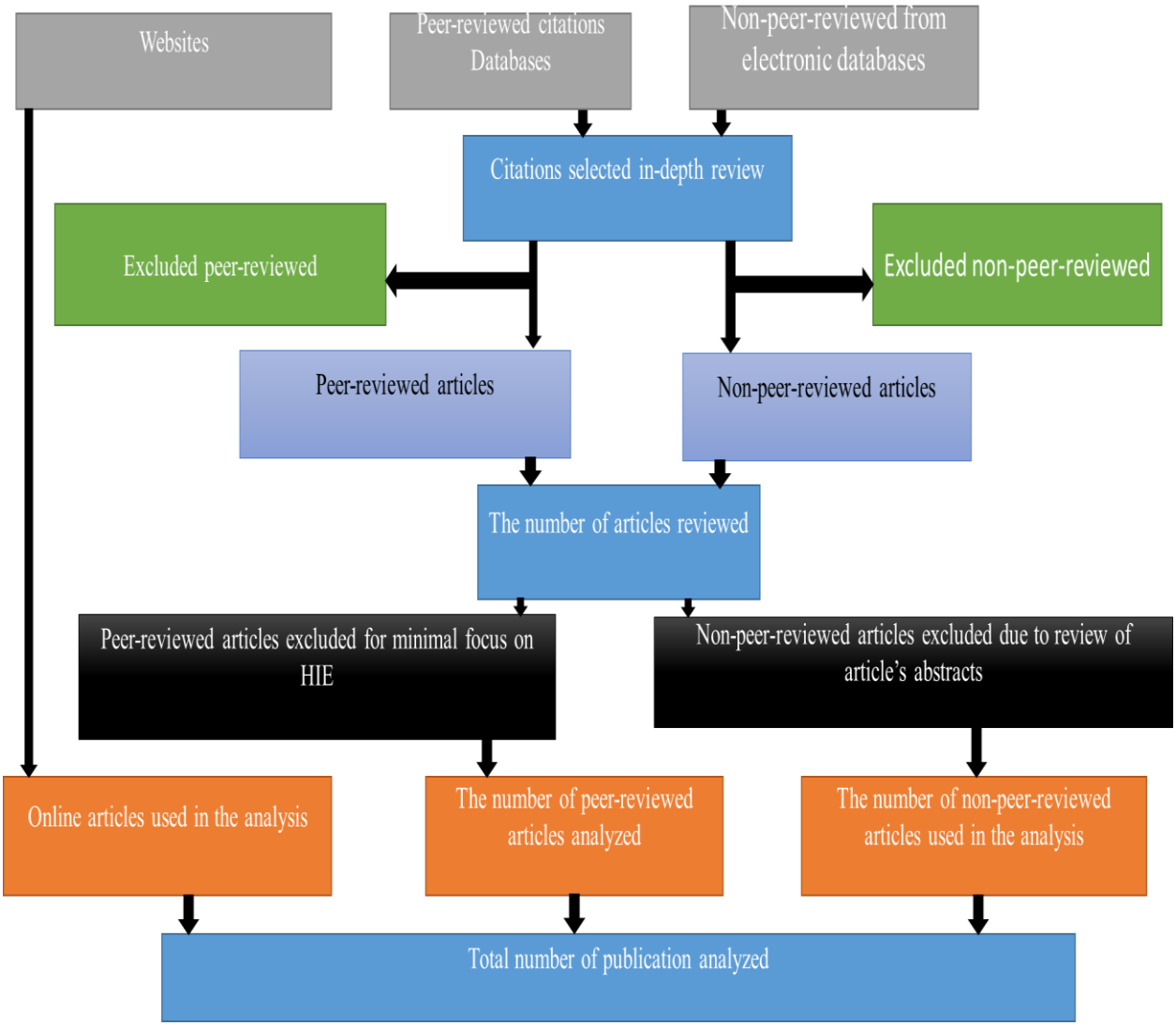
Data Analysis

Data Extraction and Analysis

Due to the limitations of several studies not having randomized experimental design methods, the current research did not use standard/traditional meta-analysis. However, systematic theme identification was utilized to extract the relevant data as much as possible, including performing content analysis of the collected data, hence creating a thematic qualitative strategic document analysis.

Figure 5

Data Extraction and Analysis Sequencing



Search Strategy

The current research was carried out to review the existing literature on the healthcare leadership roles in the cross-border adoption and expansion of healthcare patient information exchange. Since healthcare is a fundamental aspect of life, any study in this subject area should focus on the issue and vividly bring out the facts to help solve the existing problem. Thus, the research conducted at any time should not, in any way, comprise the operations of the business.

Patient data are a sensitive feature in the medical profession (West, Borland, et al., 2015). Based on these fundamental principles of healthcare, the current research considered the need for proper planning and carrying out the plans to meet the threshold for the research and to uphold the standards of healthcare research. For example, the research consulted librarians in the health department to help with the identification of the relevant databases as well as the primary keywords that could help the study get appropriate resources that could meet the required data. As mentioned earlier, this study was based on qualitative systematic strategic document analysis; therefore, the search documents involved databases from the health sector, business, information technology, and leadership. For instance, databases that were searched included peer-reviewed journals, Harvard reviewed publications, other dissertations (especially those that were published in ProQuest, EBSCOhost), and other academic databases.

Moreover, the databases searched led to other critical information sites such as PubMed, Academic Search Premier, Google Scholar, Science Direct, Web of Science, among other sources that helped achieve the objective of the research. The keywords used in the search for resources include “HIE,” “Role of healthcare leadership,” “Healthcare expansion,” “Community HIEs,” “Global leadership,” “HIE Vendors,” “Efficiency of HIE,” and “HIE platforms.” Some resources were not directly linked with the keywords; nonetheless, they were used, since they were critical in understanding the study. Moreover, the search was conducted continuously until its validity was convinced that the information obtained was sufficient to comprise the research and build a robust discussion.

Search Statement

The search statement that helped with the identification and use of the resources that tackle roles of healthcare leadership in the global adoption and expansion of HIE, as well as its importance in the healthcare professionals as well as the healthcare sector, were as follows.

("healthcare*information* exchange*" OR HIE* OR Healthcare leadership*) AND (significant* OR impact*) AND (expansion* OR healthcare*).

Use of the Search Limiters

To make the research as close as possible to the conclusion. The current study used search filters to find the resources that directly address the relevant topics for this study. The use of filters or limiters also saved time, which could otherwise be utilized in search of the voluminous literature. For instance, limiters such as date of publication, peer-reviewed publications, and type of material needed were used. The "type of material" limiter was used to search for publications based on whether they are journals, books, reports, magazines, interviews, and cover stories. The "peer-reviewed" limiter was used to identify articles published in peer-reviewed journals only. All the publications were restricted to a range of from 2016-2020.

Synonyms and Substitute Words

Searching for information from databases requires the use of diverse kinds of words and phrases. As a result, it may result in different outcomes based on how the words or the phrases used for the search have been utilized in the article. For instance, in the current research, databases searches were approached with substitution of phrases and words such as Health Information Exchange" was used in the same manner as "HIE," "Role of healthcare leadership" was replaced by "healthcare management," "healthcare" was replaced by "medical care," "significance" was substituted with the "impact" and "results."

The Literature Search Process

The current study utilized various processes to identify and access all the information that was relevant for the study from the university library as well as from the databases available online as part of the qualitative systematic strategic document analysis. The initial steps involved

the identification of different databases named earlier. Upon the identification of the databases, the search tool in the databases was used in each case to search for documents that contained the words in the search box. In each database, there were filters so that the search results could only be obtained from either online journals or other articles as identified by the limiters used. Library materials such as books and articles can be located by accessing particular databases or grouped databases, for example, based on their alphabetical order. The approach made it possible to find all the articles that begin with the specified letter. The search tool contained several subjects or types whereby the researcher might select a title of the article he or she wishes to perform the research. Resource areas such as Google Scholar have an off-campus proxy, which enables the researchers to set various links to the library, thus making it easier for the one searching for the articles. As a result of scarcity in the available literature that provides comprehensive information on HIE, the current study utilized the resources that existed and supported the findings of the study.

Data Analysis

The analysis of data is crucial since it leads to an understanding of the concept under investigation (Sivarajah et al., 2017). In the data analysis section, the researcher had examined the various methods used in the study to date. The section also investigated the methods used in the interpretation of the facts obtained from the study, and the different methods used to present the data. In the current research, as part of the qualitative systematic strategic document analysis, the data used was collected from both quantitative and qualitative sources. However, only the qualitative method was used in the analysis of secondary data (Green &Thorogood, 2018). The data analysis conducted in this case enhanced the validity as well as the reliability of the research. The findings were presented in terms of various graphical tools, such as tables, graphs, and percentages, and coding was performed using NVivo-12 software. It was beneficial in many

ways to represent the data collected through graphical methods. For instance, the reports might readily be accepted by different scholars in all the fields that are relevant to the current study. At the same time, such presentations might be made it possible for the busy individuals to go through the report easily, thus saving their time as they can concentrate on the specific themes that come out of the study by induction (Sbaffi & Rowley, 2017). A possible theme for coding purposed had been added in a tabular format later in this chapter to simplify the data analysis section further.

Internal Data and Datasets

Internal data and datasets are essential when exploring leadership and patient information exchange. Additionally, the health plan employer data and information provide information about management healthcare plans are also essential. The types of internal data and datasets that were most valuable to the researcher included financial data, human resources data, staffing data, and clinical data were utilized in this study. Patient-reported data were gathered for registry purposes through clinicians and other indirect data sources (such as pharmacy records and laboratory values). The available datasets used in the study included Uniform Hospital Discharge Data Set, Outcomes, and Assessment Information Set used to assess the quality of home healthcare outcomes (Reeves et al., 2017).

External Data and Datasets

It is essential to collect external data and datasets to provide important because internal data might not be sufficient/adequate. Senior management turns to external data to identify care improvement opportunities. External data sources used in the study included data from the Content Management System (CMS) and other recognized commercial payers that were incorporated into health systems. The at-risk contract, such as the Medicare Advantage plan and bundled payment program, might provide external data relevant to quality assurance initiatives in

a healthcare setting. According to Wang et al. (2018), CMS, as part of big data, is an essential source of data because it provides a comprehensive data set for various types of claims.

Additionally, CMS provides a collated dataset in its specific area of health resource file publication. External datasets provide a basis for comparing medical claims and analysis for the organization's patients and those under a different healthcare system. External data assist the healthcare manager in incorporating claims data from commercial payers (Nieswiadomy & Bailey, 2017). Demographic data are an important source of external data, which decision-makers could use to address the impact of patient populations. For example, the U.S. Census can be accessed free of charge and is accurate and relevant since it is updated frequently to the data correlate with health information (LoBiondo-Wood & Haber, 2017); hence CMS dataset was utilized in conducting research for the current study.

Quality Assessment

The current research had been conducted based on the understanding that quality assurance is of great essence, whereby the selected articles must meet the highest precision possible in addressing different aspects of the study. As this study was based on qualitative systematic strategic document analysis, it had been a common practice to find the most appropriate resources that help meet the study objectives, which can help to measure veracity as well as the quality of the reviewed articles. Therefore, the tool used in the quality assessment for review integration was utilized to ensure that the assessment was achieved. Specifically, the current study utilized a method of sampling, type of study, method of data analysis, and the method used to collect data. These factors ensured that the sampled resources met the highest quality possible. Therefore, the selected samples were considered the best available resources to help achieve the objective of the study. By utilizing this tool enabled the current research to generate scores that range between four (qualitative design, narrative analysis, unexplained data

collection, and sampling) to 13 (random sampling, quantitative experimental design, inferential statistic, and explained data collection). Although the current study had been based on qualitative research as part of systematic strategic document analysis, both qualitative and quantitative articles were used in the literature review as long as the articles were published between 2016 and 2020 and are available in peer-reviewed journals. Table 9 in Appendix A illustrates the list of peer-reviewed articles that were selected for the need fora systematic review for the literature review section.

Reliability and Validity of Research Instruments and Data

Prior to the data collection for the commencement of the current research, permission was sorted and obtained from the university department in-charge of research by having obtained IRB approval as the current research study was based on a qualitative systematic strategic document analysis. Based on the various checklists in the research department, the study did not immediately commence when permission was granted. However, the study addressed trustworthiness in the current research through the examination of credibility, dependability, and transferability of the findings (Sbaffi & Rowley, 2017). Integrity is one of the most crucial vital aspects considered in any research since it entails reliability as well as validity, relating to the procedures a researcher follows to guarantee consistency and accuracy of the methods and analysis. Based on the approach of the current study, the research maintained both data-quality and data-reliability through a critical focus on the research questions, methods, and choice of data collected. The current research utilized various data-checking and verification methods; for instance, coding of the information strategy was utilized to match the reliability of the set requirements.

Moreover, throughout the study, each step in the analysis was accounted for as a way of preventing possibilities of personal bias by addressing each critical and measured point at any

given time. Finally, strategic cross-sectional data analysis was set in place to validate data from Tier I and Tier II data points, as stated in Table 2. A tabular display of all research questions and their related, corresponding themes and codes have been laid out in the following Table 3.

Qualitative Data Directly Addressing Research Questions

Table 3

Research Questions and Corresponding Qualitative Research Resources

Research Questions	Methods to Answer Each Research Question	Qualitative Research Methodology Type
Research Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?	The answer to this question came from the analysis of various healthcare organization reports on the development of HIE systems. The sources had been obtained from the databases listed for the current research. Specifically, the study had concentrated on various government project implementation strategies, control of projects, project monitoring, and listed follow-up practices. Moreover, analysis of the roles of leaders in the learning of "functional and non-functional roles" concerning HIE from the successful models and how lack of knowledge of the needs, expectations, and motivations of stakeholders affect the implementation of HIE.	Although this study was based on a qualitative systematic strategic document analysis, by considering the traditional qualitative methods approach, observational document analysis was the best suited to answer this research question. The researcher had observed various government project implementation strategies, control of projects, project monitoring, and listed follow-up practices.

Research Questions	Methods to Answer Each Research Question	Qualitative Research Methodology Type
Research Question 1 (continued)	When stakeholders make these decisions, their individual and collective values emerge both implicitly and explicitly. Decisions about technical architecture can, therefore, be viewed, in economists' terms, as "revealed preferences." The final decisions and the reasons behind them provided a convenient window into stakeholders' perspectives, bringing the complex dynamics of creating an HIE into sharper focus and allowing one to infer the factors that contribute to achieving sustainability. This knowledge might also inform the policy debate over the potential for the success of the current market-oriented approach to HIE. This paradigm assumed that the market incentives of health stakeholders had been sufficient to motivate them to engage in HIE.	The model was a narrative model. The researcher had used the content analysis methodology. By looking into the literature on the subject matter, the researcher had collected information relevant to answer the research question.
Research Question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?	Utilizing the new trend technologies in the healthcare sector could offer alternative ways of managing the patients' health records and also improve healthcare quality. Thus, the examination of the Internet of Things (IoT) made it possible to relate how the management influences various professionals' desire to adopt HIE. With IoT, professionals in the finance, medical, management, HR, and other related fields can form a basis for best practices and evaluation of healthcare outcomes.	Although this study was based on a qualitative systematic strategic document analysis, by considering the traditional qualitative methods approach the grounded theory approach best suited answering this research question. Through an examination of various material about the use of the Internet of Things (IoT), the researcher had unfolded the theory behind healthcare management's influence on multiple professionals in the healthcare system.

Research Questions	Methods to Answer Each Research Question	Qualitative Research Methodology Type
Research Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with various healthcare policies?	Despite the prevalence of collaborative ventures among healthcare organizations, including mergers, alliances, and joint ventures, the majority of these ventures fail to improve the overall performance of the organizations involved significantly. There had been a great deal of variation in the outcomes of collaborative ventures. Hence, results from target articles had revealed that key practices, including effective leadership before, during, and after these ventures were implemented, might promote their effectiveness.	Although this study was based on a qualitative systematic strategic document analysis, by considering the traditional qualitative methods approach, a phenomenological qualitative research methods approach was the most appropriate to answer this research question. The researcher had used phenomenology to understand the collaboration strategies of leaders in healthcare systems with the stakeholders.
Research Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?	Analysis of the impact of the ability to exchange patient information across clinical contexts as an important objective of health information technology investment because of its potential to achieve goals of improved quality reduced cost and increased patient satisfaction. A focus was put on the advantages that result from the use of HIE systems. The study analyzed the impact of HIE on the healthcare organizations that utilize the system and those that did not or had not put the system into use. The document analysis of the annual reports of those organizations played an essential role in completing this study.	Although this study was based on a qualitative systematic strategic document analysis, by considering the traditional qualitative methods approach, a case study model was the best approach to answering this research question. The researcher had selected sources with case studies that Analyze the impact of the ability to exchange patient information across clinical contexts.

Coding and Theme of Data

Table 4

Research Questions and Corresponding Coding and Themes

Research Questions	Coding and Themes Designed for Each Research Question	Qualitative Research Methodology Type
Research Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?	**Themes**: Projects Implementation and Continuous Collaborative Communication. **Codes**: Project Implementation, organizational leadership practices, and Communication. This thematic analysis had helped to identify various organizational practices that made it easy for healthcare organizations to implement HIE systems. Moreover, collaborative communication among stakeholders played a crucial role in enhancing the implementation of HIE systems within a healthcare organization.	Although this study was based on a qualitative systematic strategic document analysis, by considering the traditional qualitative methods approach, observational document analysis was best suited to answer this research question. The researcher had observed various government project implementation strategies, control of projects, project monitoring, and listed follow-up practices. The model was a narrative model. The researcher had used the content analysis methodology. By looking into the literature on the subject matter, the researcher had collected information relevant to answer the research question.
Research Question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?	**Themes**: Healthcare management and professional development **Codes**: professional development Establishment of the role of healthcare management in enhancing the development of different professionals in the medical sector, especially as a result of the adoption of HIE systems.	Although this study was based on a qualitative systematic strategic document analysis, by considering the traditional qualitative methods approach the grounded theory approach best suited answering this research question. Through an examination of various material about the use of the Internet of Things (IoT), the researcher had unfolded the theory behind healthcare management's influence on multiple professionals in the healthcare system.

Research Questions	Coding and Themes Designed for Each Research Question	Qualitative Research Methodology Type
Research Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with various healthcare policies?	**Themes**: HIE systems are beneficial for the operation of the healthcare organization with Continuous Collaboration **Codes**: Choice of vendors Despite the prevalence of collaborative ventures among healthcare organizations, including mergers, alliances, and joint ventures, the majority of these ventures failed to improve the overall performance of the organizations involved significantly.	Although this study was based on a qualitative systematic strategic document analysis, by considering the traditional qualitative methods approach, a phenomenological qualitative research methods approach was the most appropriate to answer this research question. The researcher had used the phenomenology technique to understand the collaboration strategies of leaders in healthcare systems with the stakeholders.
Research Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?	**Themes**: Technology is the critical Factor for benefitting from the HIE system **Codes**: Benefits of HIE HIE systems provided a competitive advantage to the healthcare organizations that use technology. It resulted in better health outcomes by sharing and monitoring patient health progress, as well as increasing the time for assessment of any patient.	Although this study was based on a qualitative systematic strategic document analysis, by considering the traditional qualitative methods approach, a case study model was the best approach to answer this research question. The researcher had selected sources with case studies that analyzed the impact of the ability to exchange patient information across clinical contexts.

Storing and Accessing HIE Data

Securing HIE data was critical because these data hold susceptible patients' information, and the potential for breach may have serious ramifications. Once the data was obtained based on standardized performance measures, the next step was to secure the data. Since healthcare data require additional security requirements because it is regulated by federal agencies (Nieswiadomy & Bailey, 2017), Healthcare data should be stored in a scalable storage platform to meet strict data retention policies. Healthcare data storage should be flexible, easily accessible, and secure. The portable devices used to store or transfer data should be encrypted to minimize the possibility of having data breaches. Database managers should ensure physical security controls are implemented to secure physical data and portable electronic components used to store data. The current study utilized data from publicly available databases; therefore, data storage was not needed.

Tools and Methods used to Analyze, Interpret, and Validate the Data

Several tools were used to analyze, interpret, and validate healthcare data. The general tools used by researchers include averages, modes, and standard deviation to predict the future tread (Reeves et al., 2017). The literature searches of various studies that are related to resistance to change in organizations is an essential source of secondary employed in this study. The studies that show high similarities or associated with the subject of resistance to organizational change were included. Other tools used to analyze and validate the data use the statistical methods such as calculation of the average, linear regression, and confidence interval. The research may also use regulatory guidelines on statistical data to validate the data (LoBiondo-Wood & Haber, 2017).

A researcher may use the Integrated Electronic Protocol Validation of data as a tool to support researchers and perform data standardization. This automated statistical test can conduct

tests that researchers frequently use, such as Mann-Whitney, chi-square, t-student, and Fisher. The use of the integrated electronic protocol, which is an automated statistical tool such as has been necessitated by the need to evaluate the healthcare data. The statistical tools provide evidence-based hypotheses and numerically proven conclusions. Validation helps the analysts to know whether the outcome of a given measurement would be accepted with confidence or rejected. The validation criteria necessary for statistical research include quantitation limit, accuracy, sensitivity, precision, working range, detection limit, and robustness. The current study validated the data against the timeline and the relevance of data by performing cross-sectional data analysis between Tier I and Tier II data points and as had been explained throughout this chapter.

Ethical Considerations

Any research process must adhere to research ethics, which is necessary to ensure the confidentiality of the data collected and also to assure the protection and security of any participants of the study. Research ethical considerations apply to all studies, although there might be variations depending on the research design and methodology adopted for any particular study. In this study, the researcher had ensured that all ethical principles were implemented; any data collected had been securely kept, therefore avoiding any manner of corruption. Besides, the study had reviewed by peers and the university department in charge of research (IRB) to ensure all ethical research standards have been implemented accordingly and that no human subject information had been utilized (Tolich, 2016).

Chapter Summary

This third chapter aimed to give details of the methodology utilized by the researcher to identify the data useful in the current study. The current study was based on a qualitative systematic strategic document analysis by reviewing documents from various healthcare

databases and various government resources. Primarily, the methodology chapter identified the techniques used, which made the research ethics in all the aspects (Kazdin, 2019). The current chapter also emphasized the various approaches used in the data collection as well as for the analysis. Therefore, this chapter describes the approaches used in data collection, preservation, and data analysis techniques. The current research was meant to understand what roles leadership plays in the global adoption and expansion of the Healthcare Information Exchange (HIE) for the patients. Chapter one was dedicated to providing a framework and a definition of the research in entirety. The second chapter was dedicated to the review of the literature. The literature review considered all the aspects of HIE that are essential in the current study. The second chapter was dedicated to the review of the literature. The literature review considered all the aspects of HIE that were essential in this study.

The development of research onion led to a more straightforward way of conducting research that requires in-depth analysis (Saunders et al., 2009). It contains different stages that a researcher utilizes at the point of developing various strategies used in the study. As shown in Figure 2, the research onion has multiple layers, and each of the layers is so structured that the outer layer covers all the inner layers.

Researchers are required to consider and practice to put the various philosophical commitment in place (Kaushik & Walsh, 2019). Consideration of the practice of philosophical commitment is an important process since the researcher had to devise a unique strategy to employ steps to influence the search for the data, which may also affect the specific target research point; thereby, the study may be completed. The current research had taken the epistemology position as it entails the knowledge in a research discipline acceptable for scholarly purposes as part of qualitative systematic strategic document analysis. Research philosophy is essential because it gives the researcher the ability to understand the definition of knowledge in

any particular field precisely. Research philosophy leads to the development of the assumption that results in the justification for the methodology used for the study in addition to guiding how to achieve the research objectives.

Two types of research approaches exist and included in this study were deductive and inductive approaches. The inductive approach provided the researcher with the ability to consider the study from a specific point to view to a general view. A deductive approach applied to studies that sought to probe how to fit the observed issue is with the expectations of the research. Based on the approach, it might be applicable in both quantitative as well as qualitative research. The current study deployed the deductive logical data analysis approach to commence and completed the research.

The research design describes the various processes that have been used in the completion of the study. Such a research design forms a framework that results in the best methodology that their searchers adapt, the selection of the participants, and analysis of information collected from the research resources. Some of the characteristics of research design include exploratory, explanatory, and descriptive research, as explained in the chapter.

A sample is a segment that represents the entire population under investigation. Samples are used differently depending on the research design. For instance, in a qualitative research design, the sample is quite small compared to the samples used in quantitative research since most of the analyses are conducted from the varied sources of information. On the other hand, sample sizes in quantitative research tend to be large and are selected to ensure that the data can provide a reliable outcome from the study.

Sample sizes matter the most when the reliability of the results is concerned in quantitative research (Faber & Fonseca, 2014). The sample size does not have a serious significance in qualitative research since the concept of representation is not strongly applied for

the research to be valid, as the current study was conducted based on a qualitative systematic strategic document analysis. Therefore, in such cases, the more the number of participants, the more reliable the research.

Sampling techniques refer to the methods used to select an appropriate sample size from a wider research area (Taherdoost, 2016). Several methods can be used to sample the population under investigation. Researchers may decide to use a random sample, which represents phenomena, subjects, or individuals chosen randomly from the population under investigation. When the random sampling technique is used, the outcome is a random distribution, which implies that there is a possibility for skewing of the data based on the random nature of the selection of the sample.

Data collection methods are the processes used to gather the required information for the research (Creswell & Creswell, 2017). Data collection methods may vary depending on the source of the data. Essentially, there are two different ways to get data. These include primary data and secondary data. Primary data entails the data collected from first-hand sources. As this study is based on a qualitative systematic strategic document analysis, secondary data has been utilized to answer all research questions.

Upon understanding the two sources of data, that is, primary data and secondary data, researchers can use the data obtained for both quantitative and qualitative research. The current research only utilized secondary data. Essentially, secondary data were information collected from the opinions or the work produced by other researchers but might extend beyond research realms. However, subsequent studies pay close attention to the conclusions arrived by the resources used to inform their research.

The current research was conducted based on the understanding that quality assurance had been of great essence, whereby the selected articles had to meet the highest precision

possible in addressing different aspects of the study as part of a qualitative systematic strategic document analysis. It has been a common practice to find the most appropriate resources that help meet the study objectives, which can help to measure both the integrity and quality of the review articles. Therefore, the tool used in the quality assessment for review integration was utilized to ensure that the assessment was achieved.

The analysis of data is crucial since it leads to an understanding of the concept under investigation. In the data analysis section, the researcher examined the various methods used in the study to date. The section also investigated the methods used in the interpretation of the facts obtained from the study, and the different methods used to present the data. In the current research, the data used were collected from both quantitative and qualitative sources, but only the qualitative method was used in the analysis of secondary data (Green &Thorogood, 2018).

Chapter 4: Analysis

This chapter presents the analysis of the qualitative data from document analysis. The purpose of the current research was to explore the adoption of the Healthcare Information Exchange (HIE) and the role of healthcare leadership in a complex universe which is composed of diverse stakeholders, which include vendors, patients, IT professionals, healthcare professionals, leadership in various levels, and implementers of systems.

The current chapter provided an analysis of the documents considered in this study. The research questions that guided this study are as follows:

Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?

Question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?

Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?

Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?

The current chapter also discusses the analysis conducted based on the methodology selected and how these analyses respond to the four research questions. It also includes some of the demographics of the articles used to obtain data in table formats to complement the summary provided. In addition, this chapter also describes the approach taken to analyze the text from different sources to uncover the codes as well as themes.

The Rationale of the Analysis and the Researcher's Perspective

The rationale of the analysis was that this study strategically focused on the identification of the roles of leaders in enhancing the success of HIE implementation and adoption, particularly in strengthening the collaboration among all the stakeholders in the medical, IT, and governance to determine how various theories help to create a fully functional work environment where different organizations interconnect and cooperate with each other to enhance the success of HIE. Different stakeholders, such as HIE developers, vendors, medics, and healthcare facility managers, interact in diverse ways and have different relationships. These interactions result in the more complex merging of professionalism and transparency in the transference of information that can result in better health outcomes build on different principles, practices, and technological innovations. In the creation of applicable infrastructure as evidence presented in the strategic, systematic document analysis conducted in the current study was truly helpful in completing the study. The present research utilized the logical deductive approach to establish the general qualitative research theory to understand the adoption of the Healthcare Information Exchange (HIE) and the role of healthcare leadership. The choice of qualitative research had proved to be the most appropriate in this study, and in particular, in answering the research questions as well as for understanding the roles of different leaders and stakeholders in the implementation and adoption of a global electronic patient information exchange. Furthermore, the overall qualitative research design utilized in this study, along with the strategy applied to obtain and analyze data enabled for the availability of a wide range of relevant information provided an elucidatory understanding of the roles of leadership in the adoption of patient information exchange platforms.

Systematic Data Analysis

Three-layered strategic and systematic document analysis levels were used in the current study, which comprises open coding, selective coding, and theoretical coding. At every level, there was a constant and direct comparison of data, which helped to distill the qualitative data much further so that they could lead to specific themes that were found from the studies and analyzed in this chapter.

Researcher's Perspective

The researcher selected the topic of the current study based on the sophisticated processes in the development of the patient healthcare information exchange in the global economy, where leadership levels play critical roles in the success of the entire process. From the organizational leadership to the state and interstate governance and development and the possible basis of acceptance of a particular healthcare exchange platform may be quite demanding. Moreover, the development of the data exchange platforms also requires different professionals, such as those from the medical community/fraternity, IT community/fraternity, state government policymakers, vendors, and patient consent, the success of HIE may be complicated further. Based on these sophisticated networks of healthcare systems and stakeholders, the researcher chose to analyze several scholarly articles in each of the four themes identified to answer the research questions.

One of the major concerns' researcher had identified in the process of this research was that the development of a robust healthcare information exchange platform and its subsequent maintenance was a complicated process. It is extremely cumbersome to have a robust system, thus requires sufficient resources that can monitor the healthcare system last and survives external threats. Moreover, since the healthcare system is generally built to improve quality and healthcare outcomes, such quality depends entirely on the governance, which sets the principles

and guides practices that made all the stakeholders adhere to the standards set for the system to work effectively. The researcher believed that this research would add value to the medical community/fraternity, as well as a different nation's positive and productive healthcare system's outcome.

Samples

The samples used in this analysis were selected based on the research questions, and the major directly interconnected framework used to approach the current study. Specifically, the study identified four prominent and directly related themes from the codes used, based on each research question. All four themes were developed further from the data obtained from the documents analyzed.

Approaches to Data Analysis

The framework adopted in the analysis of the data obtained in the current study mainly anchored on the literature formulated by Creswell and Creswell (2017), Green & Thorogood (2018), Sbaffi & Rowley (2017) and Sivarajah et al. (2017) enhanced by the research questions as well as the data collected from the documents analyzed. The adopted framework mainly focused on the in-depth examination of the documents obtained from different sources, including government sites, and portals. All the documents resulted in a proper understanding of various elements of the HIE system, such as development, implementation, control, operations, outcome evaluation, planning, and execution of processes. Moreover, every article considered in this analysis was weighed against the references used and the assertions verified, thus making the current analysis firmly grounded on facts.

The data analysis, planning, structuring, and first understanding of the texts for the qualitative data were achieved by using NVivo 12, provided by QSR International, for qualitative data analysis. The NVivo 12 qualitative analysis software provided for a ready

repository for the entire range of data collected, making it easier for the current study to explore the similarities, differences, relationships, and any existing limitations across the research findings. The software also enabled the current research to manipulate the data collected through running queries as well as models. Upon the completion of data manipulation, as deemed appropriate for any particular set of data, the NVivo 12 was utilized to create visual representations of the results into models as well as tables within the software to derive desired results. Please refer to APPENDIX G for a visual display of creating themes via using NVivo 12 qualitative software.

At the start of data collection, the texts from the documents analyzed were auto coded to be set in level one and two headings depending on the conceptual framework formulated in the current study and the findings in each case. Subsequent coding was done by critically reviewing the works of literature for specific areas of interest and utilized the later reviews and codes to verify that the data obtained were accurate and relevant for the current research. The findings were then organized into themes, which were organized into nodes that ensured that individual realities were brought to light concerning the aspects of the adoption of HIEs and the roles of healthcare leadership in the successful HIE implementation. After completing the data collection process, the examination, and elucidation, the findings, which comprised of values, beliefs, as well as viewpoints obtained from the literature, were summarized and recounted using thematic patterns.

Table 5 below presents the four themes that were analyzed from the study. The analysis of the roles of healthcare leadership in the development and implementation of the global HIE literature produced these four major themes, which influenced the understanding of these roles in different countries and how a global approach can thus be formulated. The effective management

and application of these themes into each organization results in improved performance as well as quality and better health outcomes.

Table 5

Research Questions and Thematic Connections

Research Questions	Corresponding Themes	Coding of Themes
Research Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?	***Projects (HIE) implementation*** The implementation of a health information exchange is to cover a variety of facilities as well as organizations that come with diverse kinds of challenges. ***(Further explanation of themes is provided below)***	**Codes**: Project Implementation, organizational leadership practices, and Communication
Research Question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?	***Healthcare management and professional development*** Establishing the role of healthcare management in enhancing the development of different professionals in the medical sector, especially as a result of the adoption of HIE systems. ***(Further explanation of themes is provided below)***	**Codes**: Professional Development
Research Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with various healthcare policies?	***HIE systems are beneficial for the operation of the healthcare organization with continuous collaboration*** The achievement derived from the use of new technologies used in inpatient healthcare information exchange depends highly on the participation as well as engagement of the medical facilities in aligning their operations with the principles set forth by the system developers. ***(Further explanation of themes is provided below)***	**Codes:** Choice of vendors

Research Questions	Corresponding Themes	Coding of Themes
Research Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?	***Technology is the Critical Factor*** HIE assists doctors, pharmacists, nurses, patients, among relevant stakeholders to exchange their medical data a seamless manner through electronic means, which ensures high quality, faster speed, better security and confidentiality, and highly reduced costs thus creating a competitive advantage. ***(Further explanation of themes is provided below)***	**Codes:** Benefits of HIE

HIE system mainly anchors on the Information Technology platform. However, system development requires more than using the most appropriate technology but also realizes the value of a patient's health information. As such, the system adopted should be able to capture data and, at the same time, work across different platforms and secure the data captured. Moreover, the system should create value as a result of adherence to the processes to help in collaboration among stakeholders.

Key Themes

Projects (HIE) Implementation

The implementation of a health information exchange to cover a variety of facilities as well as organizations comes with diverse kinds of challenges. For instance, these challenges may include staffing issues, technical problems, and inefficient and ineffective governance structures. The selection of a particular system and its implementation requires diverse teams to work together for the success of a specific goal. When communication, as well as planning, lacks in the organization, this results in more costly operations and delays in system functionality, or the system to kick off its operation. However, clearly defined frames must be created with specific

goals and objectives for the planning process to move forward smoothly on both the management side and the users of the system.

Healthcare Management and Professional Development

The most stable healthcare change occurs where leaders can instill a culture of training of the junior employees. The latter are supposed to take the organization to the next levels of operations one their seniors have gone for retirement. Apart from talent management and mentorship on the juniors, a successful company also focuses its employee capacity-building by increasing the number of areas where each person can be useful. For instance, a surgeon may as well train as a data scientist, so that they can make the organization more equipped. Another approach that an organization can enhance its professional development is through financing workforce training and education in their specific areas so that these workers can become better equipped with knowledge in specific areas; thereby, those organizations can minimize outsourcing whenever particular expertise might be needed in the healthcare facility.

Healthcare information technology is one of the many areas that experience dynamics when it comes to innovation. The sector continues to expand in volume, variation, as well as, in the complexity of its operations. The complexity of healthcare information technology comes from the fact that the number of cases of the patient continues to increase quite rapidly, the current situation being the number of people affected by COVID-19. Had there been no electronic record systems for in which these data were stored, these numbers would overwhelm medical practitioners. However, the decisions made concerning the acquisition of an HIE require consensus among different stakeholders as these are likely to assess and confirm that the chosen HIE can meet both a facility’s specifications and requirements.

HIE Systems are Beneficial for the Ops of the Healthcare Org

The achievement derived from the use of new technologies used in the patient healthcare information exchange depends highly on the participation as well as engagement of the medical facilities in aligning their operations with the principles set forth by the system developers as organizations strive to create an open and a collaborative environment that can provide frontline users with the opportunities to get involved in solving the technical issues, by collaboratively educating and sharpening the skills of each other with regard to the use, among other elements of the software and the user interface of the adopted HIE. As Martin, Clarke, et al. (2019) point out, organizations that employ modern and advanced technology in information processing, transmission, and retrieval, tend to have better communication and teamwork, hence better output.

Technology is the Critical Factor

HIE assists doctors, pharmacists, nurses, patients, among other stakeholders to exchange their medical data a seamless manner through electronic means, which ensures high quality, faster speed, better security and confidentiality, and highly reduced costs. Different vendors create HIE software that empowers healthcare facilities to exchange their patient health information by utilizing different standards. Operation of HIE systems is of no significance, whether the HIE is run by the government or by private vendors, as long as the principles of operation are the same creates the benefits of the system. Additionally, it has been found that some countries allow multiple HIE systems to be used across the medical fraternity.

Data and Results of the Analysis

The data collected in the current study were analyzed and summarized. Each research question and the resultant themes were explored by analyzing 50 documents equally distributed between Peer-reviewed journals and government reports and data. The findings were coded and

put in the index format to help understand how standards, principles, and practices influence the adaptation of HIE systems in each country.

Systematic Document Analysis of the Peer-Reviewed Academic Journals

HIE Implementation

HIE Implementation theme was directly associated with research question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?

In order to answer the research question regarding the status of HIE implantation in various countries, the researcher analyzed the qualitative data in documents, websites, special reports, and databases. The data show that the fully implemented status represented a large category of the organizations that have initiated the HIE implementation process. The following were the findings from the documents analyzed on different aspects of HIE implementation, which is directly related to research question 1.

The implementation of HIE is a complex and wide aspect that requires different strategies to achieve. According to Huang and Gramopadhye (2016), Denham and Matthews (2018), Hinchman et al. (2018), Hickman and Akdere (2018), and Lei e al. (2017), effective leadership and collaboration with the stakeholders are some of the key approaches that enable successful implementation HIE projects at any level. Mukhiya et al. (2019) indicated that interoperability is accepted as a basic need in the successful implementation of HIEs. According to the authors, implementation can be achieved by using a consistent standard to define different aspects of the exchange platform, such as the syntactic, as well as the semantic meaning of the patient information or healthcare information being exchanged. Based on their findings, the authors considered HL7 FHIR as one of the open standards utilized by most HIEs. In addition, the researchers intimated that “HL7 FHIR supports Representational State Transfer (REST)

architecture and Service-oriented Architecture (SOA) for seamless information exchange, it inherits the inflexibility and complexity associated with the RESTful approach" (p. 341).

Shen et al. (2017) modeled the sustainability of the HIE network that can enable both the vendors and the hospitals to profit from the use of the system and considered the national-level implementation of the system. According to the author, the implementation of a sustainable HIE system requires the understanding of various cost models that factor "operational decisions in a dynamic environment, government pricing, HIE adoption rate, and network size is developed" (p. 2101). Based on their models, the authors indicated that the best implementation strategy is for "small hospitals choose annual fee plan (AF) while medium and large hospitals mostly choose per lookup plan (PL), respectively" (p. 2102). Patel et al. (2016) indicated that the interoperability of the HIEs varies from one hospital to another, particularly among those in rural areas and towns. According to Stone (2014), "the initial stages of EHR implementation and optimization should be focused on single medical facilities and hospitals" (p. 11). The author indicated that "in 2009, it was estimated that 73% of EHR implementations were, "not using the system as intended one year after implementation" (p. 13).

Nair, and Bhagat (2020), Esmaeilzadeh and Mirzaei, (2019), Bryson et al. (2017), Siyal et al. (2019), Murugan et al. (2020), and Gupta et al. (2020) indicated that blockchain technology is in the rise and will be the most used by 2023; hence, the use of this kind of technology can be the best approach for achieving a successful HIE implementation in the healthcare industry. Jiang et al. (2018) proposed BlocHIE, which is a Blockchain-based platform for HIE. The platform proposed considered the "requirements for sharing healthcare data from different sources, combine off-chain storage and on-chain verification with satisfying the requirements of both privacy and authentic-ability" (p. 49) and proposed "two fairness-based packing algorithms to improve the system throughput and the fairness among users jointly" (p. 51).

Hyppönen et al. (2019) and Hodgkins (2017) asserted that the most effective implementation of HIE should consider specialty-specific needs as well as requirements by ensuring that all users can participate in the design of a particular HIE. Moreover, the author indicated that older professionals require training that best equips them for using HIEs. Alexander et al. (2017) indicated that effective implementation of HIEs occurs through "incorporating HIE into existing work processes, participation inside and outside the facility, appropriate training, and retraining, getting others to use the HIE, getting the HIE operational, and putting policies for technology into place" (p. 13). Heath, Appan, Gudigantala et al. (2017) indicate that the success of HIE implementation relies highly on the collaboration between different stakeholders and the healthcare IT leaders. Browning et al. (2011) agree with Heath, Appan, Gudigantala et al. (2017) that there are several issues and challenges that healthcare IT leaders face, hence the need for a formulation of the best strategies to address such challenges and foster the collaboration between teams.

Findings from the study conducted by Nordmark et al. (2016) indicated that there was a "necessity to observe the implementation of old practices to better understand the needs of new ones before developing and implementing new practices or supportive tools within healthcare to reach the aim of development and to accomplish sustainable implementation" (p. 45). The suggested the use of the NPT framework as the best approach of implementing the old processes into the new ones, thus achieving the whole implementation plan (Nordmark et al., 2016).

Heath and Porter (2019), Turner et al. (2018), and Alnofeye and Abid (2019) indicated that collaboration among healthcare leaders results in effective implementation of HIEs, particularly, when all the factors rely on trust among physicians, promotion of involvement and buy-ins, infusion of value proposition and continuous improvement of the adopted systems. Yeager et al. (2017) and Vazirani et al. (2019) reveal that several options exist in the implementation of HIE.

According to Yeager et al. (2017), the options that ensure proper implementation of HIE projects include “better conceptual models and methodological approaches to HIE research; formal partnerships between researchers and HIE entities; and establishing a nationwide database of HIE information” (p. 5). Based on their research outcomes, Yeager et al. (2017) indicated that their implementation ideas included the promotion of the availability of data for exchange, effective resource sharing, and creating new and fostering the existing partnerships, which can aid with the overcoming of the existing barriers and facilitate better HIE outcomes.

Analysis of Ji et al. (2017) identified 21 problems that affect the implementation as well as the operation of online HIE systems. The researchers divided the issues into four major categories and listed reported that the problems included system architecture and standards, documents and data items, consent of HIE, and usability.

Further analysis of the document revealed that the researchers recommended that the effective implementation of the HIE requires public support and should also be a national agenda, rather than an organizational project (Ji et al., 2017). Sligo et al. (2017) indicated that HIE implementation is a complex issue that its success depended majorly on the organizational, structural, technological, and human factors. Additionally, the researchers indicated that HIE implementation required “reflective, nuanced, multidimensional evaluation to provide ongoing feedback to ensure success” (p. 87). Sligo et al. (2017) and Hägglund & Scandurra (2017) asserted that the challenges that affected the implementation of HIEs in the country remain had to do with local differences in the implementation that lead to fragmentation and unequal access to information. As a result, the authors-initiated actions that could help reconcile the issues, for instance, an updated national regulatory framework (Hägglund and Scandurra, 2017) that can help to guide other efforts on the implementation of the HIEs.

Esmaeilzadeh and Sambasivan (2017) indicated that the implementation of HIE relies on the assessment of patients' preferences for the use of the systems due to privacy issues. According to the authors: "although privacy preferences, sensitivity perceptions and perceived potential benefits vary from person to person, patients' perceptions of the pros and cons of HIE can highly influence their level of engagement in data exchange and endorsing HIE" (p. 32). The researchers further indicated that policies should be formulated to help address the issues that may make the patients not to accept their HIE, thus delaying or stopping its implementation. The authors suggested that the policies created "should devise new strategies to ensure patients' rights to informed consent to better address the real and perceived privacy and security risks of HIE. By doing so, patients are more likely to endorse HIE when they believe that the potential benefits far outweigh the possible risks" (p. 33).

Healthcare Management and Professional Development

Healthcare Management and Professional Development theme are directly associated with the research question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?

The theme of leadership is significant in the current study, which explores the role of leadership in the successful implementation of HIE, which is directly related to research question 2. According to Heath, Appan, Gudigantala et al. (2017), differences in leadership is a significant factor that determines the success of HIE. Denis and Van Gestel (2016) emphasized the need to have effective medical leadership that offers organizational leadership in the health care system. On the other hand, Sousa and Rocha (2019) and Arnold and Boggs (2019) indicated that communication styles are critical factors of leading people into achieving organizational goals. Hickman and Akdere (2018) and Roberts (2018) asserted that healthcare leadership is reflected by the leader's dispositions and temperaments that make them visionary, role models,

anticipatory and accountable, proactive, and enhancing effective communication throughout the institution. The synthesis of articles authored by Steinmann et al. (2018), Chai et al. (2017), McCauley and Fick-Cooper (2020), Shamir and Howell (2018) and Luu et al. (2019) revealed that leaders influence and articulate direction in visions and missions and tasks to achieve a specified goal as well as determining the goals that need to be achieved while ensuring tasks are allocated effectively. According to Busari et al. (2018), leaders encourage staff to acknowledge their mistakes positively and use them as an opportunity for gaining more skills and knowledge in the field. Weenink et al. (2017) assert that effective leaders ensure that quality care is achieved through dealing actively with poor performance among staff. They proactively address unacceptable and aggressive behaviors among the staff to ensure that the actions of such staffs do not demoralize other individuals in the organization.

Analysis of works by Gutierrez et al. (2017), Payne et al. (2019), and Alharbi (2018) reveal that global leadership is significant in the current study as it helps in understanding the quality of HIE leadership and the need to promote effective leadership (Galaviz et al., 2016; Webster et al., 2016). Osland et al. (2017) also reveal that global leadership is key in overcoming barriers to implementation of HIE, such as structural and financial barriers. Therefore, an open-minded leader who can operate on a global stage is necessary. The demand for global leaders has increased in the last two decades due to globalization and the impact it has created in organizations at various levels (Kingma, 2018; Rodrik, 2018). The challenges of globalization, which is characterized by a complex and diverse environment, have necessitated a shift in global leadership paradigms (Saulite & Andersone, 2017). Healthcare institutions operate in a complex and ambiguous environment due to globalization pressures (Akhlaq et al., 2017). Thus, global leaders require a various repertoire of traits to enable them to overcome emerging global challenges such as changing technologies, flee flow of labor and capital, and cultural dynamics

(Merrild, 2015). The global expansion of HIE requires the leaders to value the principle of transparency and encourage other health providers to share important information regarding serious incidents, medical errors, medical problems, and complaints among the patients (Esmaeilzadeh & Mirzaei, 2019). The modern-day leaders must be looked at a global perspective; hence, global leaders need to enhance their skills, abilities, and knowledge about managing different stakeholders in a multicultural environment (Hickman & Akdere, 2018). Effective individual leaders provide safe environments for the staff to ensure their issues are addressed to ensure they remain motivated in the organization (Boamah et al., 2018). Effective leaders ensure credible sharing of information and create a platform that enables all stakeholders to present their needs and requirements in a clear manner (Webster et al., 2016). Effective HIE leadership ensures continuity by providing feedback and relevant information to all stakeholders, such as staff, on their performance and offer their appreciation for quality services in the healthcare organization.

According to Joseph-Williams et al. (2017), Smith et al. (2017), and Thakkar (2018), the top priority of HIE is the provision of high quality, safe, and compassionate care to the patients through patient information data sharing and engaging patients in their primary care and decision making. Effective leaders ensure that relevant stakeholders such as the patients' needs and concerns are addressed at every level (Boudes et al., 2018; Malik et al., 2018; Mtove et al., 2018). The consumers' feedback and experience should also be listened to for the future improvement of the system that a particular healthcare facility has adopted. Those holding the position of leadership should provide facts to shareholders to improve compliance leading to the global adoption of HIE (Sriharan et al., 2016). HIE leadership has a core strategy of promoting, involving, and ensuring there is full participation of healthcare providers and patients in promoting clinical outcomes of patients (Al-Sawai, 2013). Individual leadership in the healthcare

setting may not achieve the best results due to complexity in the industry, which requires all stakeholders to come together for a common objective.

HIE Systems are Beneficial for the Operation of the Healthcare Organization

HIE Systems are Beneficial for the Operation of the Healthcare Organization with continuous collaboration theme is directly associated with research question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?

Miller et al. (2019) and Li (2017) indicated that HIE plays a crucial role in the healthcare sector as it improves interoperability, particularly in technologies that continuously evolve as well as in meeting the increasing options for exchanging patient information which is directly related to research question 3. The analysis of various documents and government websites concerning the benefits of HIE systems reveal that caregivers have realized several benefits of HIE in the patient care, thus resulting in an increase in the adoption of the system by several healthcare facilities (Atasoy et al., 2018; Janakiraman et al., 2017; Kruse et al., 2018; Shah & Liebovitz, 2017).

According to Aldosari (2017), Dubovitskaya et al. (2017), and Keohane et al. (2018), HIE systems help to minimize medical errors that are ensuring that patients are safe from new infections, or reinfection. Reduction in medical errors is possible since all the medical history of the patient are contained within the database and can only be exchanged through a secure digital platform, where such data cannot be altered. McCullough et al. (2010) indicated that medical errors could result from the use of HIE, for instance, accidentally charting information on the wrong patient. Luk (2018) indicated that the use of HIE reduces the efficiency of any particular

clinician as the computer comes between the caregiver and the patient, causing significant distractions.

According to Sayyah et al. (2017), the use of HIE has become addictive, hence making it challenging to correct past errors, which leads to the medical professions propagating incorrect information to the subsequent medics. El-Meneza & AbuShady (2020) and Esmaeilzadeh & Mirzaei (2019) also indicated that the deployment of HIEs could result in three phases of issues and risks in the medical practices, for instance, the implementation phase may be characterized with inadequate training with the system, hence resulting in errors. Gordon and Catalini (2018), Baumann et al. (2018), and Sarcevic and Ferraro (2017) revealed that the transition phase where the medics move the information from the paper to the digital form could result in the loss of patient records. Finally, Madan et al. (2019) and Marinescu (2017) indicated that there might be a wide system failure due to server errors, errors in intranet connection, and interference with documents from potential threats. Even though these issues pose significant threats to the medical operations, Rodziewicz and Hipskind (2019) indicated that the use of HIE provides a way they can be prevented. For instance, according to Benson et al. (2018), HIE comes with automatic dispensing devices that enable error correction. Rodziewicz and Hipskind (2019) asserted that there are other tools that help to address these challenges such as “barcoding, computerizing the medication administration record, computerized order entry and decision support, intercepting error messages at the time medications are ordered, prompt warnings for drug interaction, allergy, or overdose, providing drug-specific information, filling prescriptions using robotics, and providing up-to-date information on new drugs.

Abdulnabi et al. (2017) and Nguyen (2019) indicated that HIE saves data in the digital form, thus eliminating the need to have unnecessary paperwork. Storage of excessive documents takes the place of the document server safely; it prevents any chances of losing any type of

information that is necessary for the patient as well as the hospital. Walker (2018) revealed that the US federal government allocation $30 billion for the development of IT infrastructure that could support the exchange of interoperable clinical data, hence result in the hospitals participating in HIE networks. Based on Walker's assertion, the analysis revealed that HIEs could improve the coordination of healthcare across different provided, thus resulting in the improved productive in-service provision for hospitals (Esmaeilzadeh & Maddah, 2018).

Walker (2018), emphasized on the benefits HIE. According to the author:

> "Using a two-stage analytic design, efficiency indices were determined using the Malmquist algorithm and then regressed on a set of hospital characteristics. Results suggest that any participation in HIE can improve both technical efficiency change and total factor productivity (TFP). A second model examining total years of HIE participation shows a benefit of one and three years of participation in TFP. These results suggest that hospital investment in HIE participation may be a useful strategy to improve hospital operational performance, and the policy should continue to support increased participation and use of HIE" (p. 427).

Kash et al. (2017), Edaibat (2017), and Kaminski (2018) indicated that HIE systems provide supporting tools for doctors, nurses, lab technicians, and other healthcare providers so that they can make an informed clinical decision that can result in better treatment as well as effective caregiving. According to Plake et al. (2017), as the healthcare professionals adopt the use of health information exchange and sharing, the different community, as well as delivery systems, should set up an infrastructure that helps in facilitating HIE between health providers and several other stakeholders who support health and care (Gill et al., 2020). Moreover, Buckman et al. (2019) revealed that HIE possesses the potential to enhance the outcome of clinical decision-making as well as continuity of care, while at the same time reducing the use of

services that do not have significant impacts on the public as well as the hospitals. The implementation of HIE is a part of a broader approach to better healthcare delivery system as well as payment reform can enable the system to make use of analytic tools that support different healthcare professionals and hospitals as well as healthcare providers to design better population health management, “patient engagement in care, and learning and improvement” (Liebler & McConnell, 2020; Plake et al., 2018).

Luthra et al. (2018), Novak and Djordjevic (2019), and Amarasingham et al. (2017) revealed that HIE offers smarter health monitoring system, whereby it helps in the simplification of the data exchange process in any healthcare sector, thereby improving an organizational health reporting as well as monitoring. The use of blockchain technology enables for the facilitation of automatic validation process for a particular HIE as well as clinical trials by preventing any third-party involvement (Zhang et al., 2018). The synthesis of Zhuang et al. (2018) revealed that “blockchain could perform HIE from distributed databases in a secure environment” when it is used alongside Smart Contracts. Additionally, it was revealed that the use of technology could ensure data provenance and security. However, in addition to the current monitoring capabilities of HIEs, it is possible to add artificial intelligence components to help in the detection of “anomalies and significant adverse events within certain patient populations” (p. 1165).

The use of HIE eliminates testing and improves health outcomes. The synthesis of the analysis reveals that HIE systems assist in eliminating unnecessary as well as redundant testing for healthcare givers, thus improving both the quality and outcome of health delivery. As a result of the removal of insignificant tests and other operational benefits, HIE helps to reduce the cost of operations of a healthcare system as well as that of a patient.

Technology is the Critical Factor

Technology is the Critical Factor theme was directly associated with the research question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?

All documents and government websites analyzed revealed that understanding technology is the main way to the adoption of HIE (directly related to research question 4) (Abdulnabi et al., 2017; De Pietro & Francetic, 2018; Everson, 2017; Gutierrez et al., 2017; Guerrazzi, 2019; Herout et al., 2019; Robinson, Presskila, & Lawrence, 2020). Ali & Miller (2017) and (Chadar et al., 2018) reported that the failure of system stakeholders to recognize and underestimate the potential of such systems might result in poor implementation. According to Lee et al. (2018), the world is technologically dynamic, and the healthcare sector should be able to move to speed to be at per with such technologies. Based on the continuous improvement in technology, Xu et al. (2017), Wager et al. (2017) and Carvalho et al. (2019) agree on the idea that hospitals and countries should consider expanding their virtual systems for storage of patient information, tracking and offering essential services to their clients, the system should also put in practice the traditional methods of hospital practices. For instance, an HIE can make doctors collect data from a patient virtually should not replace the patient's ability to avail himself or herself to the hospital.

Maheu et al. (2017) and Bhatt and Bhatt (2017) report that the internet and improvement in technology have resulted in the expansion of the boundaries of the walls of any particular hospital, making it possible for a clinic to have clients in different geographical locations. The synthesis of the documents on the power that technology plays in the adoption of HIE revealed that the leadership in different levels of governance and healthcare management did not

anticipate, hence did not recognize the power of technology in healthcare systems (Brown-Podgorski et al., 2018; Elysee et al., 2017).

Oostra (2016) and Guillemette et al. (2017) revealed that various professionals in the healthcare sector were involved with the technology that transformed from financial management software to clinical tools. According to DeLeon and Choi (2019) and Agarwal and Kochhar (2017), most hospitals used electronic medical records to keep track of the facilities' financial transactions, but this was the limited version of what such technology could do in the healthcare sector. The maturity of systems enabled the healthcare professions to clinically exchange patient health information and the power that such an exchange had on the health outcome of the patient (Khuntia et al., 2017; Gutierrez et al., 2017; Martin et al., 2019; Sittig et al., 2018). Graban and Swartz (2018) and Miah et al. (2017) indicated that such system improvement and analysis had been the main reason healthcare professionals collaborate to ensure that they can bring the needed expertise to make the HIE technology a better tool to improve healthcare practices. Kelly et al. (2018), Price-Haywood et al. (2017), Manias et al. (2020), and Dykes et al. (2017) assert that the patients, as well as caregivers, were engaged in finding how the adoption of the digital tool could help both the families and hospitals in the management of patients.

The analysis of the documents revealed that HIE might be categorized as an organization as well as a system. The literature show HIE is both an organization as well as a process that is critical in the provision of high-quality care and efficient health systems (Heyde, 2018; Salleh et al., 2016; Weaver et al., 2016; Zech et al., 2016). HIE is a system and an essential network that allows health practitioners to retrieve and share patients' medical information securely. Feldman et al. (2019), in a study, have provided critical factors for the successful implementation of HIE. Besides, the research also shows that the implementation of HIE is a fundamental process that

revamps the quality of patient care and patient safety. HIE is a system that enables the interoperability of data in an automated fashion intending to achieve a healthier population that is subjected to fewer to nil medical errors. HIE allows health care institutions to incorporate EHR in laboratory results, ePrescribing, surveillance, and monitoring of clinical data and processing information on clinical care summaries (Salleh et al., 2016). EHR is an electronic document containing details of the patients, such as demographics, medical history, diagnoses and progress, immunizations, and laboratory results. HIE is a system that enables healthcare providers to interact more with patients and to maintain the safety of the patients' data and information (Akhlaq et al., 2017). HIE promote transparency, during information exchange with patients, and ensures that they apprehend their health information comprehensively since individuals will be able to make sound decisions. HIE also provides the infrastructure through which healthcare providers use to learn patients' behaviors, perceptions, and preferences can provide them with automated options that will improve their resilience.

Table 6 below shows a summarized version of critical findings based systematic document analysis based on peer-reviewed academic journals, articles, and dissertations.

Table 6

Summary of Document Analysis of Peer-Reviewed Journals

Research Questions and Corresponding Main Themes	Years of Publication	Database and Citation Source	Summary of Critical Findings
Research Question 1: *What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?*	2016 to 2020	Cochrane Library; JSTOR; Wiley; Science Direct; MEDLINE; EBSCOHOST;	Effective leadership and collaboration with the stakeholders are some of the key approaches that enable successful implementation HIE;

Research Questions and Corresponding Main Themes	Years of Publication	Database and Citation Source	Summary of Critical Findings
Research Question 1 (continued) **Main Theme*:*** *HIE Implementation*	2016 to 2020	Palgrave journals; Tandfonline; CINAHL; PsycINFO; Ethos; Sage; AND ProQuest. *Please refer to **APPENDIX H** for the complete list of the database and actual citations used to complete the strategic/systematic document review process*	Interoperability is accepted as a basic need in the successful implementation of HIE; Representational State Transfer (REST) architecture and Service-oriented Architecture (SOA) for seamless information exchange; HIE system requires the understanding of various cost models; EHR implementation and optimization should be focused; Blockchain-based platform for HIE; privacy and authentic-ability; HIE should consider specialty-specific needs as well as requirements; HIEs occurs through incorporating HIE into existing work processes with putting policies for technology into place...etc...
Research Question 2: *How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?*	2016 to 2020	Cochrane Library; JSTOR; Wiley; Science Direct; MEDLINE; EBSCOHOST; Palgrave journals; Tandfonline; CINAHL; PsycINFO; Ethos; Sage; AND ProQuest.	Differences in leadership is a significant factor that determines the success of HIE; Need for emphasized the need to have effective medical leadership that offers organizational leadership in the health care system; communication styles are critical factors of leading people into achieving organizational goals; healthcare leadership is reflected by the leader's dispositions and temperaments that make them visionary, role models, anticipatory and accountable, proactive, and enhancing effective communication throughout.

Research Questions and Corresponding Main Themes	Years of Publication	Database and Citation Source	Summary of Critical Findings
Research Question 2 (continued) **Main Theme:** *Healthcare Management and Professional Development*	2016 to 2020	*Please refer to* ***APPENDIX H*** *for the complete list of the database and actual citations used to complete the strategic/systematic document review process*	Leaders influence and articulate direction in visions and missions and tasks to achieve a specified goal as well as determining the goals that need to be performed while ensuring tasks are allocated effectively; an open-minded leader who can operate on a global stage is necessary; Individual leadership in a healthcare setting may not achieve the best results due to complexity in the industry, which requires all stakeholders to come together for a common objective...etc.
Research Question 3: *How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?*	2016 to 2020	Cochrane Library; JSTOR; Wiley; Science Direct; MEDLINE; EBSCOHOST; Palgrave journals; Tandfonline; CINAHL; PsycINFO; Ethos; Sage; AND ProQuest.	HIE plays a crucial role in the healthcare sector as it improves interoperability, particularly, in technologies that continuously evolve as well as in meeting the increasing options for exchanging patient information; caregivers have realized several benefits of HIE inpatient care, thus resulting in an increase in the adoption of the system by several healthcare facilities; HIE systems help to minimize medical errors that are ensuring that patients are safe from new infections, or reinfection; medical errors can result from the use of HIE, for instance, accidentally charting information on the wrong patient,

Research Questions and Corresponding Main Themes	Years of Publication	Database and Citation Source	Summary of Critical Findings
Research Question 3 (continued) **Main Theme:** *HIE Systems are Beneficial for the Operation of the Healthcare Organization*	2016 to 2020	Cochrane Library; JSTOR; Wiley; Science Direct; MEDLINE; EBSCOHOST; Palgrave journals; Tandfonline; CINAHL; PsycINFO; Ethos; Sage; AND ProQuest. *Please refer to **APPENDIX H** for the complete list of the database and actual citations used to complete the strategic/systematic document review process*	HIE reduces the efficiency of any particular clinician as the computer comes between the caregiver and the patient, causing significant distractions; HIEs can result in three phases of issues and risks in the medical practices, for instance, the implementation phase may be characterized with inadequate training with the system, hence resulting in errors; the transition phase where the medics move the information from the paper to the digital form can result in the loss of patient records; there may be a wide system failure due to server errors, errors in intranet connection, and interference with documents from potential threats.; HIE saves data in the digital form, thus eliminating the need to have unnecessary paperwork; the result of the removal of insignificant tests and other operational benefits, HIE helps to reduce the cost of operations of a healthcare system as well as that of a patient...etc..

Research Questions and Corresponding Main Themes	Years of Publication	Database and Citation Source	Summary of Critical Findings
Research Question 4: *What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?*	2016 to 2020	Cochrane Library; JSTOR; Wiley; Science Direct; MEDLINE; EBSCOHOST; Palgrave journals; Tandfonline; CINAHL; PsycINFO; Ethos; Sage; AND ProQuest. *Please refer to **APPENDIX H** for the complete list of the database and actual citations used to complete the strategic/systematic document review process*	Failure of system stakeholders to recognize and underestimate the potential of such systems may result to poor implementation; the healthcare sector should be able to move to speed to be at per with such technologies; hospitals and countries should consider expanding their virtual systems for storage of patient information, tracking and offering essential services to their clients, the system should also put in practice the traditional methods of hospital practices; HIE can make doctors collect data from a patient virtually should not replace the patient's ability to avail himself or herself to the hospital; the internet and improvement in technology have resulted in the expansion of the boundaries of the walls of any particular hospital, making it possible for a clinic to have clients in different geographical locations; the leadership in various levels of governance and healthcare management did not anticipate, hence did not recognize the power of technology in healthcare systems.

Research Questions and Corresponding Main Themes	Years of Publication	Database and Citation Source	Summary of Critical Findings
Research Question 4 (continued) **Main Theme:** *Technology is the Critical Factor*	2016 to 2020	Cochrane Library; JSTOR; Wiley; Science Direct; MEDLINE; EBSCOHOST; Palgrave journals; Tandfonline; CINAHL; PsycINFO; Ethos; Sage; AND ProQuest. *Please refer to **APPENDIX H** for the complete list of the database and actual citations used to complete the strategic/systematic document review process*	Professionals in the healthcare sector were involved with the technology that transformed from financial management software to clinical tool; most hospitals used electronic medical records to keep track of the facilities' financial transactions, but this was the limited version of what such a technology could do in the healthcare sector; maturity of systems enabled the healthcare professions to clinically exchange patient health information, and the power that such an exchange had on the health outcome of the patient; HIE can be categorized as an organization as well as a system; HIE is both an organization as well as a process that is critical in the provision of high-quality care and efficient health systems; HIE is a system and an essential network that allow health practitioners to securely retrieve and share patients' medical information; HIE is a system that enable interoperability of data in an automated fashion with the aim to achieve a healthier population that is subjected to fewer to nil medical errors; HIE allow health care institutions to incorporating EHR in laboratory results, ePrescribing, surveillance and monitoring of clinical data, and processing information… etc….

Systematic Document Analysis of the Government Health Databases

HIE Implementation

HIE Implementation theme was directly associated with research question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?

Fragidis and Chatzoglou (2018) reported that the "heterogeneity of each country's financing mechanism and health system" (p. 117), affected the implementation of the HIE system, citing that the primary reason behind the adoption of such systems is political. Moreover, the authors indicated that:

> The most significant success factor of a nationwide EHR system implementation process is the commitment and involvement of all stakeholders. On the other hand, the lack of support and the negative reaction to any change from the medical, nursing, and administrative community is considered as the most critical failure factor. (p. 119)

Riahi et al. (2017) implemented an HIE in steps. According to the authors, there was an emphasis on readiness before the project was launched. A governance model was created to ensure that all the stakeholders were involved in the implementation of the project. The first phase involved staff training and going live. The second phase involved customization, sustainability, optimization, and quality improvement (Riahi et al., 2017).

Henry et al. (2018) indicated that the implementation of a particular HIE system depends on policies that have been made at the governance levels, especially at the state policies. The implementation policies indicated that such implementations might greatly rely on the economy and sustainability as well as in addressing the issue of confidentiality. The authors said:

> Implementation of federal policies, like the IMPACT Act, and the availability of interoperability standards for standardized patient assessment data through resources such

> as the CMS Data Element Library provide important building blocks to advancing health information exchange. Policies that advance interoperability in the post-acute care settings, are critical to ensuring that HHAs and SNFs can meet future demand for services and the complex health needs of their patient population. (p. 13)

According to Campos and Reich (2019), Kooij et al., (2018) and Rocha & Tobias et al. (2015), structural barriers, financial and political considerations are significant factors that hinder HIE implementation at the institutional level (American Public Health Association, 2020). Implementing HIE requires restructuring of care and reorganization of the care services (Alaboudi et al., 2016; Buntin et al., 2010; Faruq & Tatnall, 2016). Some gaps exist in the adoption of global HIE despite being supported and funded by the national and local governments. Adoption of national health technology in some countries, such as Malaysia's The Ministry of Health Malaysia, initiated the total Hospital Information System in short known as THIS, still faces challenges despite the massive funds invested by the government to finance the system (Salleh et al., 2016). Many health IT systems adopted in such countries have limited interoperability and integration required by hospitals to support various clinical operations in clinics, health centers, and the Ministry of Health of Malaysia, in short, known as MOHM hospitals. The existing IT systems require to be upgraded regularly to help in minimizing resources, boost adoption levels and facilitate care coordination in a centralized manner using a single IT system (Akhlaq et al., 2016). There is a need for continual and sustainable government support in the national and global adoption of HIE (Dullabh et al., 2014; US Department of Health and Human Services, 2020). Synthesis of The Agency for Health Research and Quality in short know as (AHRQ, n.d) low level of training may hinder global adoption of HIE, as such, healthcare leadership, have a role to play in ensuring that all healthcare employees are trained on how to handle patient's information in a secure way to protect the privacy and confidentiality of

information. In addition to training, there should be information technology security systems to ensure that the patient's information is not hacked and shared in public.

The examination of the research done by Schmit et al. (2018), Gold, and McLaughlin (2016), Dullabh et al. (2015), and Wu & LaRue (2017) revealed that the effective implementation of HIEs relies heavily on the various laws. According to Schmit et al. (2018), "laws can be barriers to or enablers of HIEs. However, jurisdictions are not addressing many significant issues such as governance, incentives, mandates, sustainability, stakeholder participation, patient engagement, privacy, confidentiality, and security" (p. 637). The researchers concluded that there was a substantial risk that existing legal frameworks were not adequately supporting HIEs (Schmit et al., 2018).

Healthcare Management and Professional Development

Healthcare Management and Professional Development theme were directly associated with the research question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?

According to Beauvais et al. (2018), healthcare management requires each healthcare worker to possess several qualities that make them suited for their jobs. First, Elrod and Fortenberry (2018) healthcare professionals must be industry conscious as the health sector is extremely competitive. As a result, different professionals should be updated with the latest trends and knowledge in their specific fields. According to the Commission on Accreditation of Healthcare Management Education (CAHME; 2020), healthcare professionals, especially those that seek to be in the management positions, must strive to attain higher academic credentials for them to be qualified to hold such views (West et al., 2019). Secondly, according to the Institute of Medicine (US; 2011), Sonnino (2016), West et al. (2015), Encourage (2012) and Bleich, (2012), the healthcare management plays a significant role in inspiring the healthcare workers to

pursue their professional development. Adaptability is one of the critical attributes that are common among healthcare leaders, especially during a challenging time as one that the world experiences as a result of Covid-19. Such times provide healthcare professionals with the opportunity of furthering their education and skills in terms of understanding new concepts and approaches to new kinds of healthcare challenges (Joseph & Huber, 2015; Pype et al., 2017).

According to the Center for Disease Control and Prevention (CDC; 2020), healthcare management and professional development occur through several bodies within the United States of America. The American Association of Healthcare Administrative Management (AAHAM) is one of the leading professional organizations in charge of Healthcare Administrative Management, connecting diverse kinds of professionals within the health sector. AAHAM (2020) indicates that AAHAM mainly provides education, certification, networking, and advocacy, specifically to those leaders who involve themselves with the revenue cycle and management of healthcare professionals. The American College of Healthcare Executives (ACHE) provides healthcare professionals with state and national connections and local support. The members of the organization are provided with relevant educational programs that help them to advance their careers as well as volunteer opportunities that help them to become more responsible in their local community in the implementation of healthcare policies and innovations (ACHE, 2020).

The American Health Information Management Association (AHIMA) helps professionals who are in the field as well as those whose interest anchors on advancing their careers in the management of healthcare information. AHIMA's primary mission is to improve the delivery of quality healthcare by providing management professions with the appropriate tools, resources, and information to raise the standards of practice and care (AHIMA, 2019). The Healthcare Financial Management Association (HFMA) helps to enhance the career of

healthcare professionals by providing them with different training opportunities and certifications, which enables the healthcare leaders to advance and become more relevant to the task they undertake, thereby making the healthcare sector more focused on meeting its objectives (HFMA, 2020).

Also, the National Association of Healthcare Access Management (NAHAM) ensures that it promotes best practices in healthcare settings, thus ensuring that each facility or healthcare system maintains a high standard of health. The organization also establishes subject matter expertise in all the different healthcare professionals at different levels of operations. NAHAM offers various opportunities to the healthcare workers where they can advance their education, obtain new certifications, and improve their networks (NAHAM, 2020). Different governments finance these professional bodies to help healthcare workers to find all that can enable them to enhance their professional development.

HIE Systems are Beneficial for the Operation of the Healthcare Organization

HIE Systems are Beneficial for the Operation of the Healthcare Organization with continuous collaboration theme was directly associated with research question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?

According to HealthIT for HIE benefits (2020), the main benefit from the usage of HIE is that it acts as a vehicle for improving the care quality as well as ensuring the safety of patient care since it reduces errors in medication and medical services. According to the Department of Healthcare finance (2020), HIE offers providers and payers a window into the complete patient record. HIE offers providers services, including encounter notification, a portal for querying patient medical history, and encounter reporting. Renner and Roach (2020) and California HIE

Cooperative Agreement Program (Department of Health, 2009) indicate that HIE helps to stimulate consumer education as patients' involvement in their health care. The US Department of Health and Human Services (2020) suggests that HIE helps to ensure patient privacy and confidentiality of information as it adheres to all the state Privacy Acts.

According to Vest and Gamm (2010) and the New York State Department of Health (2019), HIE increases efficiency by eliminating unnecessary paperwork. The Texas Health and Human Services (2020) indicate that HIE creates a potential loop for feedback between health-related research and actual practice Increment in efficiency implies, according to Kendler and Center (2011) and CDC (2011), that the technology can help to facilitate effective deployment of any emerging technology that can help in enhancing healthcare services. According to Fan Jiang et al. (2005), the use of HIE offers the organizations with a backbone of technical infrastructure that ensures that both the federal as well as the state-level governance can initiate any particular operation, policy, or regulation.

Reisman (2017) and Evans (2016) indicated that using HIE helps to provide the primary stages of interoperability among different electronic health records that are maintained by any specific caregiver or facility. According to Perri-Moore et al. (2016), HIE results in efficient care by enabling automatic appointment reminders or follow-up instructions to be sent directly to patients, and prescriptions directly to pharmacies. Moreover, the system cuts the time a particular patient spends in filling any relevant forms before admission pertaining to their medical history. As such, the use of HIE is likely to improve future performance in healthcare practices, which, according to Guide (2013). Enabling Health Information Exchange to Support Community Goals (2013) will open more opportunities like platforms for care management, cross-hospital usage, and advance analytics in clinical and financial operations. Moreover, HIE helps various

governments to obtain data on public health in a short and timely manner, thus enabling the government to plan and prioritize its operations meant to improve public health.

According to HealthIT for HIE benefits (2020), when healthcare professionals and providers have full access to accurate and complete patient health information, they provide better healthcare to their patients. Properly adopted EHR systems as part of HIE dramatically improves the healthcare providers' ability to diagnose the correct form of diseases, thereby reducing the occurrence of medical errors, which increases patient care. Based on a national survey conducted by the HealthIT for HIE benefits (2020), about healthcare providers already using HIE system, has revealed that 94% of healthcare providers identified their properly adopted HIE system provides patient's records readily available at the point of care. Some 88 % of healthcare providers report that properly adopted HIE system significantly increases clinical and financial benefits for their respective practices. 75% of healthcare providers reported that a fully adopted HIE system creates opportunities for delivering quality patient care.

Technology is the Critical Factor

Technology is the Critical Factor theme was directly associated with the research question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?

Analysis of the databases, websites, and government portals revealed that several technological approaches could be used to adopt HIE in any particular healthcare organization or the entire system of the country (Gordon & Catalini, 2018). Interorganizational Systems Implementations is one of the mainly used IT-based systems, which help to link two or more organizations (Agbenyo et al., 2018; Gebre-Mariam, 2018). Most of the implementations used cross-organizations characteristics of STS. However, the use of Interorganizational Systems

Implementations has been successful in several industries, and its adoption in healthcare was acceptable. Based on the use of IOS, the adopters of the technology indicated that the system enabled the implementers to learn from early adopters and it also enabled them to evaluate process implementation and comprehend the lessons learned and the real as well as perceived value of the system (Feldman et al., 2014).

According to Heeks (2002) and Kuziemsky et al. (2016), the evaluation of any particular information system collaboration needs to be approached from multiple dimensions. The adoption of a particular technology requires that multiple stakeholders can be entrusted with the responsibility of holding potential skills of creating new and better systems and one that can improve the value offered to the public (Kieny et al., 2017; Santos et al., 2017; WHO 2017; WHO, 2018). According to Agency for Healthcare Research and Quality (AHRQ, n.d), the adoption of HIE requires multidimensional perspectives to ensure that it can work and meet the requirements of healthcare organizations and patient privacy and confidentiality to an individual's health information. The adoption of several other technologies also come with different challenges, and HIE has its own. The use of nationwide HIE impacted the United States in diverse ways, which affected the decision to either adopt the system or discard its use (DeSalvo, 2015; Devine et al., 2017; HealthIT, 2020; Posnack, 2015). For instance, different states reported different outcomes of the cost of the system. On the same note, however, there were no significant amount of studies on the impact of nationwide HIEs. As each State terminates their agreements to cooperate with the federal government, the stakeholders, particularly the policymakers should understand the impacts of IOS, its challenges, successes, and practical lessons derived from an early system implementation. Moreover, it is essential to understand how to connect public hospital HIE and private hospital HIEs.

Several measures should be taken in the implementation of HIEs. However, the synthesis of documents analyzed revealed that it is a complicated task to evaluate HIE, partly, since there is no specific HIE model (Sridhar et al., 2012). It was noted that measures to implementation of HIEs mainly depend on the value that stakeholders obtain from the use of the system. Consequently, an evaluation of the system should consider the operation of the system as well as determine how well the system works to meet the specific needs of users in particular settings. Thus, the measures of HIE implementation should consider multiple levels of abstraction, which include technical, organizational, and governance.

Based on the analysis, it was revealed that technological implementation of HIE concerning technical and organizational aspects are based on the degree and type of data usage, level of complexity of business processes, completeness of information, resistance to change, unintended consequences, and facilitators and barriers to HIE implementation (Feldman et al., 2014). Furthermore, the organizational and governance aspect of HIE implementation comprises of communication, trust from the patients and the maintenance of such trust based on the system shielding from security threats, organizational structure, the sustainability of the systems, roles and power relationships that exist among stakeholders, the commitment of various levels of leadership and representation and motivations of all the stakeholders (Centers for Medicare & Medicaid Services, 2020).

Table 7 below shows a critical summarized version of key findings based on systematic strategic qualitative document analysis based on the government health portals, reports, and databases.

Table 7

Summary of Document Analysis of Government Data

Research Questions and Corresponding Main Themes	Years of public ation	Database and Citation Source	Summary of Critical Findings
Research Question 1: *What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?*	2016 to 2020	U.S. Department of Human Health Services; U.S. Center of Medicare and Medicaid; U.S. National Institute of Health; U.S. Office of National Coordinator Health Information Technology; World Health Organization; Public Health Agency of Canada; U.K. National Health Services AND European Health Management Association.	Heterogeneity of individual country's financing mechanism and health system has affected the implementation of HIE system because of adoption of such systems in political; A governance model for HIE implementation is needed to ensure that all the stakeholders were involved in the implementation of the project; HIE implementation includes required customization, sustainability, optimization, and quality improvement; HIE system depends on policies that are made at the governance levels, especially at the state policies; structural barriers, financial and political considerations are significant factors that hinder HIE implementation at the institutional level; Implementing HIE requires restructuring of care and reorganization of the care services; There are some gaps that exist in the adoption of global HIE despite being supported and funded by the national and local governments;
Research Question 1 (Continued) **Main Theme*:*** *HIE Implementation*		*Please refer to* ***APPENDIX H*** *for the complete list of the database and actual citations used to complete the strategic/systematic document review process.*	The existing IT systems require to be upgraded regularly to help in minimizing resources, boost adoption levels and facilitate care coordination in a centralized manner using a single IT system; low level of training may hinder global adoption of HIE, as such, healthcare leadership; there should be information technology security systems to ensure that the patient's information is not hacked and shared in public; there was a substantial risk that existing legal frameworks were not adequately supporting HIE's .....etc...

Research Questions and Corresponding Main Themes	Years of public ation	Database and Citation Source	Summary of Critical Findings
Research Question 2: *How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?*	2016 to 2020	U.S. Department of Human Health Services; U.S. Center of Medicare and Medicaid; U.S. National Institute of Health; U.S. Office of National Coordinator Health Information Technology; World Health Organization; Public Health Agency of Canada; U.K. National Health Services AND European Health Management Association.	The healthcare management requires each healthcare worker to possess several qualities that make them suited for their jobs; healthcare professionals must be industry conscious as the health sector is extremely competitive; healthcare professionals, especially those that seek to be in the management positions must strive to attain higher academic credentials for them to be qualified to hold such positions; the healthcare management plays a significant role in inspiring the healthcare workers to pursue their professional development; Adaptability is one of the critical attributes that are common among the healthcare leaders, especially during challenging time as one that the world experiences as a result of COVID-19.
Research Question 2 (Continued) **Main Theme:** *Healthcare Management and Professional Development*		*Please refer to* ***APPENDIX H*** *for the complete list of the database and actual citations used to complete the strategic/systematic document review process.*	Healthcare management and professional development occur through several bodies within the United States of America; the National Association of Healthcare Access Management (NAHAM) ensures that it promotes best practices in healthcare settings, thus ensuring that each facility or healthcare system maintains a high standard of health; Different governments finance these professional bodies to help healthcare workers to find all that can enable them to enhance their professional development...etc....

Research Questions and Corresponding Main Themes	Years of public ation	Database and Citation Source	Summary of Critical Findings
Research Question 3: *How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?*	2016 to 2020	U.S. Department of Human Health Services; U.S. Center of Medicare and Medicaid; U.S. National Institute of Health; U.S. Office of National Coordinator Health Information Technology; World Health Organization; Public Health Agency of Canada; U.K. National Health Services AND European Health Management Association.	The main benefit from the usage of HIE is that it acts as a vehicle for improving the care quality as well as ensuring the safety of patient care since it reduces errors in medication and medical services; HIE "offers providers and payers a window into the complete patient record. HIE offers providers services including encounter notification, a portal for querying patient medical history, and encounter reporting."; that HIE helps to stimulate consumer education as patients' involvement in their health care; HIE helps to ensure patient privacy and confidentiality of information as it adheres to the all the state Privacy Acts; HIE increases efficiency by eliminating unnecessary paperwork; the technology can help to facilitate effective deployment of any emerging technology that can help in enhancing healthcare services; the use of HIE offers the organizations with a backbone of technical infrastructure that ensures that both the federal as well as the state-level governance can initiate any particular operation, policy, or regulation;
Research Question 3 (Continued) **Main Theme:** *HIE Systems are Beneficial for the Operation of the Healthcare Organization*		*Please refer to* ***APPENDIX H*** *for the complete list of the database and actual citations used to complete the strategic/systematic document review process.*	Using HIE helps to provide the primary stages of interoperability among different electronic health records that are maintained by any specific caregiver or facility; Properly adopted EHR system as part of HIE dramatically improves the healthcare providers ability to diagnose a correct form of diseases, thereby reducing the occurrence of medical errors, which increases patient care; 75% of healthcare providers report that fully adopted HIE system creates opportunities for delivering quality of patient care...etc...

Research Questions and Corresponding Main Themes	Years of public ation	Database and Citation Source	Summary of Critical Findings
Research Question 4: *What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?*	2016 to 2020	U.S. Department of Human Health Services; U.S. Center of Medicare and Medicaid; U.S. National Institute of Health; U.S. Office of National Coordinator Health Information Technology; World Health Organization; Public Health Agency of Canada; U.K. National Health Services AND European Health Management Association.	Several technological approaches can be used to adopt HIE in any particular healthcare organization or the entire system of the country; Interorganizational Systems Implementations is one of the mainly used IT-based systems, which help to link two or more organizations; Most of the implementations used cross-organizations characteristics of STS. However, the use of Interorganizational Systems Implementations has been successful in several industries, and its adoption in healthcare was acceptable; Based on the use of IOS, the adopters of the technology indicated that the system enabled the implementers to learn from early adopters and it also enabled them to evaluate process implementation and comprehend the lessons learned; the evaluation of any particular information system collaboration needs to be approached from multiple dimensions; The use of nationwide HIE impacted the United States in diverse ways, which affected the decision to either adopt the system or discard its use;
Research Question 4 (Continued) **Main Theme:** *Technology is the Critical Factor*		*Please refer to* ***APPENDIX H*** *for the complete list of the database and actual citations used to complete the strategic/systematic document review process.*	The synthesis of documents analyzed revealed that it is a complicated task to evaluate HIE, partly, since there is no a specific HIE model; that measures to implementation of HIEs mainly depend on the value that stakeholders obtain from the use of the system; technological implementation of HIE with regard to technical and organizational aspects are based on the degree and type of data usage, level of complexity of business processes, completeness of information, resistance to change, unintended consequences, and facilitators and barriers to HIE implementation....etc...

Chapter 5: Discussion, Implications, and Recommendations

The current study ventured to fill the knowledge gap on an understanding of the adoption of the healthcare information exchange (HIE) System and the role of healthcare leadership in the implementation of the project that leads to such adoption of HIE. The current study used systematic document analysis to various literature published in the context of the current research so that the study may strengthen the knowledge base of the development and adoption of healthcare information exchange based on the existing health information technology standards and health information management principles and practices.

The first chapter of this research was dedicated to the introduction of the topic, developing the context of the current study, setting up the study into its appropriate area of application and research scope, the definition of the problem statement and formulation of research questions that guided the data needed for the current study. Chapter Two provided the outcome of the analysis in healthcare leadership, information technology leadership, and globalization of IT in healthcare. Chapter Three of the current research was a summary of the methods as well as procedures used to organize this research and put it in the right context, the relevant instruments used in the data collection, analysis, and presentation. Chapter Four presented the outcomes from the coded, compiled, and analyzed research results. In the current chapter, the consideration of the analysis and research outcomes were presented. Consequently, this chapter encompassed the primary substance of the research conducted and elucidation of the conclusions drawn from the research findings and what these might imply. Based on the implications and understanding of the knowledge gap filled by the current research, recommendations were provided, and future research proposed to strengthen further the knowledge of the issues in the area of interest in the current study or areas affiliated to it.

Research Problem

HIE may effectively improve the quality of care if the designers and policymakers can balance and model its settings to ensure that all the aspects of the technology are optimally functional. When healthcare professionals have sufficient access to their healthcare information and that of their clients, they can make informed decisions that can improve their patients' health outcomes. Moreover, such a system can empower the patients to choose the kind of treatment approach they would wish to have and can track their health in a much easier way. However, the existence of the barriers in both organizational leadership, national governance, and the healthcare workplace environments can impede the realization of such positive outcomes from using HIEs. Williams et al. (2017) indicated that organizational policies are some of the hindrances to the achievement of effective HIE implementation. However, technological barriers also exist, thus impeding the progress of a particular HIE implementation. According to Golden et al. (2017), the security of a healthcare organization in the future market depends on the facility's retention of its patient healthcare information, since these organizations believe that the retention of such data grants them a competitive advantage over the other healthcare facilities. There is significant support data on the return on investments to companies that use HIEs.

Moreover, different facilities may use different platforms, making it challenging to exchange patient data between the organizations. However, the management's viewpoints need to be changed to realize the broader picture of HIE's benefit on the national and global health outcomes as the technology might be integrated or merged so that all the hospitals and medical centers can use a specific HIE platform. Such mentalities impede the success of the HIE implementation and, to a greater extent, result in poor public health.

Moreover, other possible HIE platform challenges may hamper collaboration between the relevant stakeholders who implement the exchange platforms. Vest and Kash (2016) points out

that there are several vendors, community, and enterprises that deal with HIEs platforms, it becomes difficult for healthcare stakeholders to collaborate, as each of these groups uses varied fundamental design. Wager et al. (2017) indicate that it is possible to find that any stakeholder can access community HIE, yet those that use enterprise HIE do not focus on the need to compete based on the platform. On the contrary, vendor HIEs support their clients only. Fundamentally, it is challenging for healthcare management to incorporate all these systems into a similar platform that can be accepted by all the caregivers. As a result, there a need to determine the potential avenues that stakeholders can employ to enhance collaboration across the different HIE platforms.

The current research assessed the implementation of the various HIE platforms and how different healthcare information technology and management principles affect the implementation of such platforms. Though challenges exist, the principles of leadership and collaboration among various stakeholders have led to the failure to integrate and adopt the universal HIE system. The government, as well as healthcare organizations, have put a significant amount of resources into the research on this part, and a large body or recommendations have been put forth. However, the issues remain in that there are still failures in the adoption of successful electronic systems for patient healthcare exchange. Even though the current research does not bring the issue to a conclusive point, it provides an approach that addresses most of the significant concerns that fail the adoption of HIEs. Specifically, the study addresses the main factors that result in better health outcomes, indicating that the adoption of these practices and improve current operations.

Research Questions

The current study used the following research questions:

Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and for the success of HIE?

Question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?

Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?

Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?

Overview of the Research Approach

The first research question sought for the study to understand the role that healthcare leaders play in ensuring that various teams can collaborate and thus successfully implement HIE systems. This particular question addressed the need to have the management as well as policymakers in the healthcare sector to find alternative ways through which professionals from different relevant fields can contribute their knowledge and collaborate towards implementing an HIE system that can address the existing problems. The other research questions built on the first by providing the specific approaches that the healthcare leaders and stakeholders can take to ensure HIE's success. They also offered advantages that can result from the adoption of such HIEs.

Discussion of the Research Findings Based on the Research Questions

The current research utilized a systematic document analysis method, where the research questions informed the type of data to look for in the chosen documents. Moreover, the research

questions guided the approach taken in the literature review, which built on the understanding of healthcare information technology and the standards, principles, and practices of healthcare managers based on their interaction with different professionals such as system developers, vendors, financial advisers, and patients. The systematic document analysis resulted in four main themes that the current study analyzed.

The Literature Review in Brief

In the second chapter of this research, a review of several types of research was conducted. The current study reviewed aspects of global leadership in the adoption challenges of healthcare information exchange. The literature revealed that leadership is one of the most significant factors that define the success of an organization, particularly in its phase of globalization. Warren et al. (2016) indicated that global and local healthcare practices should anchor on the new strategies that may assist in solving the variables within the healthcare system. HIE is one of the most effective approaches for realizing better health outcomes at both local and global levels as it provides a variety of useful tools for handling patients and medical records. Even though the current platforms pose challenges in that they cannot be integrated into one, Eden et al. (2016) asserted that a universal HIE system could provide a way for all the healthcare facilities and providers to be connected and exchange their patient health records.

Consequently, this made it easier for patients to have their health history tracked from the system, making it easy for clinicians to decide on the best approaches to dealing with their current cases. Most healthcare systems in the United States, Canada, the United Kingdom, China, and Japan, among other developed countries, have healthcare systems that are quite structured and organized. It was revealed that the success in HIE implementation in these countries does not rely on the stability of their systems but leadership practices within their organizations. The

revelation underscored the critical part that leadership plays in the implementation of any particular project.

The theoretical framework adopted for the literature review informed the primary step of the approach of the system of HIEs. In the framework, the significant areas were projected, particularly those that enhance the understanding of leadership roles in the adoption of global HIEs. Based on this, the literature review discussed various leadership theories to help understand the most appropriate leadership practices necessary for healthcare leaders to possess while collaborating with other professionals, which might help create the desire for HIEs to meet an organizational need. Transformational theory ensured that there were adjustments in individuals and social systems. This leadership theory enabled each leader to assess their situation and allowed the input of other stakeholders to ensure that they became successful. Moreover, the transformational leadership style was focused on mentoring younger leaders, which essentially implies that leaders who used this style were likely to encourage other healthcare professionals to advance their knowledge and became fit for leadership positions in the organization and other higher ranks of leadership. The understanding of leadership styles enabled the researcher to review the literature on various practices among healthcare leaders, IT leaders, and global governance.

Methodology Used

The current study was based on a qualitative systematic strategic document analysis by reviewing documents from various healthcare databases and various government resources. The methodology adopted in the present research stressed the techniques utilized to meet all the research ethics. Also, the documents were selected using a high-priority approach that ensured that the current study factored quality assurance essence. The use of secondary sources was the most fitting in the current research context in that it provided a broader scope for data collection.

Moreover, the systematic codes used in identifying main themes in the selected documents ensured that the findings were consistent with the research objectives and answered the research questions.

Summary of the Research Findings

The data analysis of coded document reviews obtained from 50 documents for each of the research questions resulted in the following four main themes:

- Projects implementation and continuous collaborative communication
- Healthcare management and professional development
- HIE systems are beneficial for the operation of the healthcare organization
- Technology is the critical factor

One of the main points evident from any of the articles analyzed was that HIE is the current technology that should be adopted in the healthcare sector as it results in better health outcomes in both local and international settings. Most of the researchers and task force teams agree that the implementation of HIE in any particular hospital can improve performance. Moreover, all the stakeholders, in patients find the systems quite useful. However, due to the differences in the technologies adopted by different vendors, communities, or organizations, scholars articles, and task force reports differ on the approach that should be taken to ensure that the all the stakeholders might collaborate to create a particular HIE can be universally used by all the healthcare facilities, government, and health providers and funders such a Medicare and Medicaid. Since all the documents analyzed revealed the current need for HIE, the most interested was vested in understanding the other themes that answered the present research questions.

The implementation of projects relies mainly on leadership practices, capital, and state or federal, and organizational policies. Based on these differences, several complications

accompany the implementation of a particular healthcare information exchange approach. The technologies used by different vendors make it impossible to integrate the existing systems. The difference in technology comes explicitly from the diverse kinds of programming skills and techniques, and contributor perception as well as the desire of a particular hospital. Based on this point, the vendors and designers try to make an electronic health record system tightly fit the demands of their clients as much as possible.

The implementation of a particular system or project requires enough teams to address the various phases of the project. However, it is noteworthy to realize that most of the healthcare organizations do not have enough staff, or may experience other issues that relate to staffing, technical hitches, poor governance, and insufficient funds to run the project implementation from the beginning to the end. It is noted for an organization effectively to implement its project; in this case, a facility's HIE, then it is imperative that the organization should have a sufficient team and members who can collaborate to share their ideas that enhance the success of the specific objective. The collaboration of teams depends so much on the communication between the teams involved in the implementation of any project as well as on the effective planning of each of the phases of the project. When these vital elements lack, the project may experience escalated costs, delays in the functionality of the system, midway halt, or even a complete shutdown. Thus, to avoid such misfortunes, the leadership should guide the relevant teams to respond to each of the project need.

As pointed out in the literature, leadership styles played a crucial role in the subsequent successes of an organization. The healthcare management should focus on motivating the workers and healthcare professionals to advance their careers as well as their leadership skills to make them more useful to the organization. For instance, it was revealed that transformational leaders hive due guidance to the junior employees and finance their education to become more

relevant to the organization and problem solvers. Moreover, good leadership provides for a diversified workforce so that all the teams can be incorporated into providing a solution when a problem arises. It was revealed that doctors need to have talented members in multiple areas, including information technology. Apart from talent management and mentorship on the juniors, a successful company also focuses its employee capacity-building by increasing the number of areas where each person can be useful.

The difference in terms of the HIE systems relies mostly on the vendors' techniques using the different technological approaches. As technology advances in other sectors of the economy, healthcare is not left behind. Healthcare is one of the most advanced industries where technology is core. However, healthcare information has not advanced to the extent that HIE can be used globally without hitches. However, the progress is positive as the use of technology in the current setting enables the healthcare facilities to meet most of the clients' needs and address most cases. The present health pandemic of the COVID-19, for instance, was determined due to the sharing of information on healthcare cases. The use of technology has, to a greater extent, enhanced the way different healthcare facilities responded to the pandemic, making it moderately manageable. Even though there are several systems for health information exchange, the decisions made about the acquisition of a particular system relies on the collective decision of the various stakeholders who can indicate the extent to which the chosen system meets their needs.

There are several benefits of operating an HIE system for a particular organization. Healthcare professionals benefit from the use of the system in that it provides them with both medical data of a patient, such that, relying on such data, the clinicians can make more informed decisions on the current medical need of their patients. Also, HIE helps medics to be more organized, neat, and have power to a large volume of resources at a click away. The technology

saves time for both the client as well as the doctor in that the patient does not have to take time to fill in their details as well as their medical history as they can be directly retrieved using the patient's healthcare number. Healthcare information exchange platforms also act as a depository for all medical operations. The essence of this depository is that it can lead to enhanced medical research on a particular disease. For instance, in the current wave of COVID-19, different doctors from different parts of the world can indicate the symptoms of a specific patient diagnosed with the coronavirus, thus helping other clinicians to be aware of such symptoms when assessing their patients in other locations where such information can be retrieved. The government also benefits from HIEs because it can retrieve useful information from the healthcare facilities to assist in making various healthcare policies. When there is a particular outbreak of disease, the government can analyze such cases with medical professionals' help, thus formulating specific plans to curb the issue, as it happened with COVID-19. Moreover, researchers can benefit from HIE when they can have access to particular data on particular issues, without contradicting the patients' privacy and confidentiality. As such, these researchers can help bridge the gap in a specific area of disease knowledge, like understanding patient recoveries, the effect of medical practices, rate of infection, the impact of hospital visits, inpatient treatment, and outpatient treatments on the healing process.

Synopsis of Data Analysis

Research questions used for the current research were formulated to lead to the understanding of the role of leadership in the adoption of HIE, implementation strategies, the role of management in creating a team of professionals, and the benefits that accrue to an organization as a result of its adoption of HIE.

Projects Implementation

Technology is an ever-dynamic element, and as it evolves, technology comes with data management, storage, and retrieval. Data forms the main idea behind HIE. In this case, data does not make sense until it is accessed, retrieved, analyzed, valued, and shared among the potential individuals or organizations that intended to use such information. In the healthcare industry, in particular, the needed collected and stored within an electronic system need to be analyzed and should make meaning. HIE increases both the chance and the ability to store and exchange any particular data desired by any healthcare professional, researcher, or the government. Also, the ability to store and exchange patient healthcare data empowers patients to receive better medical care irrespective of their location as long as they can reach a health center, which is the main idea behind healthcare interoperability.

Interoperability enables systems to electronically exchange health information, making it understandable to the user, thus can make it usable in the treatment of a patient. HIE incorporates the exchange of all health-related data such as lab reports, clinical summaries, medical records, medication, and any other information that can be useful to the patient. In the present hospital settings, healthcare professionals and organizations enhance the use of electronic health records, thus making interoperability easier, even though several gaps still exist in the way the system operates. When such gaps are filled, the doctors and other caregivers and healthcare providers can have access to all the required information at the point in which they care for a particular patient. On the contrary, lack of some data at the point of care can result in time wastage as the clinician tries to obtain such information from the patient.

Interoperability can help to solve several issues in healthcare. Such issues include patient identification using special characters, name, or fingerprints, or social security numbers. Secondly, interoperability enables the use of specific standards for sending, managing and

retrieving patient information among healthcare organizations connected in a particular system. Thirdly, interoperability makes it easier for healthcare professionals to measure, analyze, and improve a specific health outcome since the system can initiate point-to-point communication within the network, thus analyzing or monitoring the changes, thus making the issue to improve much faster. Finally, interoperability discourages vendor information blocking, making it easy for patients and healthcare professionals to have access to the desired healthcare information.

Interoperability also helps to solve several issues among patients. First, it ensures the security of patient data as the information is transitioned through secure channels and encrypted formats - secondly, interoperability results in the improvement of patient experience as well as care coordination. Thirdly, patients who consider the use of interoperability with their information pay less in their health spending and have better productivity as the system enables them to save time.

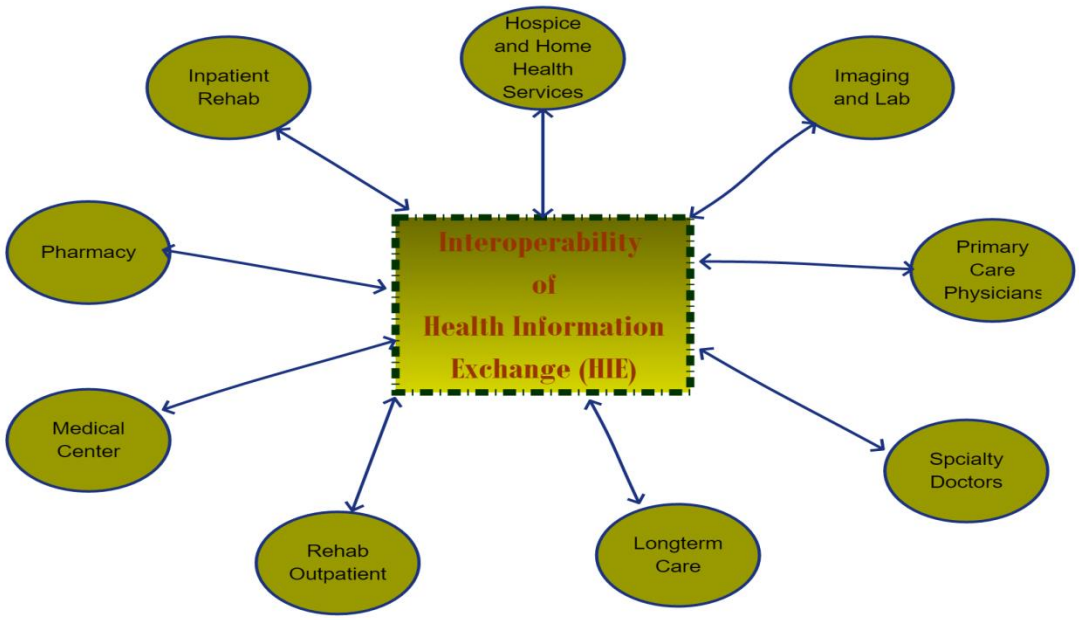
HIE is one of the essential components of healthcare information technology. It enables sending, retrieving, and integrating information required by a healthcare professional. As such, HIE becomes a pivotal step towards technological support in the exchange of patient healthcare data among different healthcare organizations, making such data meaningful, harmonious with the clinician's workflow, and increasing patient-centered health practices. Thus, the adoption of HIE can increase focus on healthcare outcomes and a reduction in the cost of seeking healthcare services and enhance other factors that drive the use of HIE in the global markets.

Implementation of interoperability technology occurs in several steps, leading to the adoption of HIEs. Interoperability makes unrelated healthcare information technology systems and the organizations that operate such systems to work together by exchanging data in real-time. The implementation of such systems occurs in three stages, including foundational

interoperability, structural interoperability, and semantic interoperability. Figure 5 below is a graphical display of a fully interoperable HIE system.

Figure 6

HIE Interoperability Flow Diagram



Implementation of systems anchors so much on the leadership of an organization. Mukhiya et al. (2019) noted that effective leadership and collaboration with the stakeholders are some of the critical approaches that result in the successful implementation of HIE projects at any level, which agrees with the assertion by Hassidim et al. (2017). Leaders who cooperate across the teams can realize benefits that result from the response from other professionals working with the organization. In particular, transformational leaders can initiate and effect change through listening and collaborating with other professionals, hence involve in a discussion that can eventually lead to the implementation of a project that a particular company desire.

Stakeholder participation is critical in the implementation of HIE in any organization, and particularly in the adoption of a global platform for information exchange. Clients need to understand the need of the system, how it works, and its benefit on their healthcare and that of the community. The system can be of no use if the main clients targeted by the system do not show interest in the exchange platform. Since electronic health information exchange deals with personal data, such information must be treated with care and given willingly to the system administrators without coercing the clients. Based on this revelation, as Hyppönen et al. (2019) and Hodgkins (2017) indicated, all the stakeholders, including the public, should be involved in HIE's design and implementation. Therefore, as Dong et al. (2017) pointed, healthcare leaders should lead their teams and engage them in equal measures to ensure that each of the team members feels part of the implementation process.

The state, as well as the federal government, play crucial roles in the implementation of HIE. Zaccagnini and Pechacek (2019) revealed that healthcare leadership at the national level is mainly concerned with the development of policies and laws that shape the improvement of healthcare provision in each country. As such, these leaders provide an enabling environment for different healthcare professionals as well as for the adoption of a particular project. It is also important to note that the policies created at the federal and state level do not affect all the hospitals or organizations in the same way. Schmit et al. (2018) confirmed the role that policies play in implementing HIE projects. According to the authors, “laws can be barriers to or enablers of HIEs” (p. 637). The current study confirms that the national policies do not favor all the healthcare organizations with the policies that relate to the adoption of HIEs, which is why most organizations may not be ready to consider going the global way in terms of patient information exchange. However, Elshaug et al. (2017) help to dissect this conflict as he indicated that the constant monitoring and feedback analysis could help the national leadership to create the

essential guidelines for the various healthcare providers and stakeholders so that all the guidelines may assist the leaders in the lower levels to improve their healthcare services for the patients across the nation.

Healthcare Management and Professional Development

The healthcare industry is currently one of the fastest developing and most evolving sectors in any economy of the world. In developing countries, for instance, the healthcare sector is rapidly changing, but at the same time faces many challenges in all areas. Problems in leadership and professional development affect each organization or industry. However, healthcare providers try as much as possible to understand as well as respond to the current dynamics in the healthcare organizational management, advancement in the healthcare information technology, policy formulation, and implementation, and professional development strategies among the healthcare workers.

The success of a healthcare organization requires effective management that comes from multiple areas of knowledge. Effective healthcare management requires that health professionals should be able to pass through rigorous professional tests to ensure that each leader is suited for the responsibility they are given (Beauvais et al., 2018). When healthcare leaders develop their leadership skills, they become more rigorous in their work and more conscious of the healthcare sector, which is increasingly become completive. Each healthcare professional needs to be acquainted with the latest trends in the industry, as this enables them to make informed decisions in leadership management. The Commission on Accreditation of Healthcare Management Education (CAHME) indicated that those that seek to be healthcare managers must strive to attain higher academic credentials so that they can be considered fit to have such responsibilities (West et al., 2019).

Since healthcare workers may be mandated to have specific academic attainments for them to qualify for accreditation to certain leadership roles, it follows that management has to be in the frontline in inspiring and ensuring that healthcare workers pursue their professional development goals. The federal government provides platforms for healthcare professionals to develop their careers as well as further their credentials in healthcare management. Healthcare credentialing entities such as the American Health Information Management Association (AHIMA), the Center for Disease Control and Prevention (CDC), the American Association of Healthcare Administrative Management (AAHAM), the American College of Healthcare Executives (ACHE), the American Health Information Management Association (AHIMA), the Healthcare Financial Management Association (HFMA), and the National Association of Healthcare Access Management (NAHAM) are forefront organizations that ensure that healthcare professionals attain specific credentials in their career growth.

The adoption of HIE requires both enhanced management skills at the nationals and organizational level as well as the professional skills in specific areas that comprise the operational definitions of the system. For instance, there should be dedicated professionals in healthcare information technology, healthcare finance, database management, networking, and system management. These professions enable the organizations as well the entire healthcare sector to have dedicated professionals that can address the HIE requirements of the local hospital or the national and global adaption of the HIE.

Healthcare management and professional development require highly trained human resource managers. AHIMA assists with the development of human resource practices by improving their professional development and opening new opportunities for the members to explore new technologies that may help build future economics (Primeau, 2017). This point illustrates the role of healthcare organizational leaders in career development among

professionals in a particular healthcare organization. Once leaders grow from corporate management to the national-level management, they tend to understand the challenges that exist at lower levels of management, hence lead others in the formulation of policies as well as structures and technologies that may result in better health outcomes.

Professional management is also enhanced through participation in professional networks. Such professional networks enable the healthcare leaders to engage in and adopt professional strategies that result in better healthcare services as a result of having a depository of quality information in all the areas that pertain to the healthcare industry or in the particular healthcare sector (Benetoli et al., 2018; NAHAM, 2020). Moreover, this agrees with Velásquez et al. (2018), in which it was revealed that healthcare professional networks increase the number of healthcare professionals that have access to contacts, opportunities, constructive healthcare dialogue, and collaboration among the various professionals in the healthcare department and its support departments.

HIE Systems are Beneficial for the Operation of the Healthcare Organization

Several studies have indicated that there are potential benefits that accrue to any healthcare organization that uses HIE. A study by Walker et al. (2005), as reported in APPENDIX E, the benefits that accrue to an organization that uses HIEs. The use of HIE in the management of healthcare operations helps both health providers and patients, and in particular, helps the healthcare in its strategies to attain value-based care from interoperability. However, the persistent issues in bringing the large-scale information-sharing networks to enhance the development of the HIE result in significant threats to the system's adoption. This increases the chances of dampening the optimism that could be developed towards the realization of the benefits of interconnecting the various healthcare organizations beyond the capability of the HIE systems (Floridi et al., 2018). Such issues include privacy and security protections, as the patient

data can be exposed to fraudulent people who may compromise the health of an individual due to the critical information at their disposal (Lal et al., 2017). APPENDIX E is a breakdown of an example calculation of Annual National Benefit from Level 4 Health Care Information Exchange and Interoperability (HIEI) between Outpatient Providers and Independent Laboratories showing the total annual national benefit amount between outpatient providers and labs to be around $32 billion.

Even though several challenges exist, the benefits of using HIE's far outweigh its drawbacks. The principles, as well as direction provided by several researchers and government portals, can be combined with the support provided by health providers, current health information networks, healthcare information technology developers, and federal agencies and result in the design of HIEs that can improve patient care, healthcare coordination, and the whole national healthcare outcome.

HIE is one of the strategies that the healthcare sector uses to improve rural health as its use results in the development of effective responses to public health issues. In particular, the rise of pandemics, such as the spread of coronavirus, is better enhanced by a system of patient healthcare information sharing. Besides, the system helps with overcoming issues that result in patient matching issues, ensuring that there is consistency in offering service to any particular patient.

The use of HIEs has also been confirmed to help improve the way Medicaid and Medicare operate with the hospitals. For instance, HIE allows organizations to expand their utilization, access to healthcare services, and enhanced telehealth practices, thus increasing providers' efforts to ensure the provision of healthcare services and use of funds. Also, the optimization of HIE can play a critical role in ensuring that members of the public get healthcare services whenever there are public healthcare crises such as natural disasters that can result in the

displacement of people, destruction of facilities, and forced evictions and immigrations. Therefore, the primary idea behind this system is to provide access to information wherever someone is at any time. The national government can understand the people affected in any particular area that has been hit by a natural disaster, and thus assess such calamities, which can also help in research purposes and formulation of health policies regarding specific areas.

HIE improves communication between doctors and patients. For instance, as suggested by some scholars, HIE can be integrated with smartphones to ensure that patients can access their health records, notifications, and updates by checking their online profiles. Some of the smartphone companies such as Samsung has come app with applications that can help an individual to track their health status and keep their health records. Specifically, Samsung uses Samsung health mobile application to help patients track their health progress, get updates and notifications, and create appointments, and reminders. It follows that a creative approach would be to ensure that the HIE created can be provided at the user end in the form of a mobile application.

Other benefits of HIE include the elimination of unnecessary paperwork, which indicates that clinicians do not have to carry loads of papers and files trying to check and retrieve the information of a particular patient. It also implies that doctors and nurses are saved from writing several details on the paper regarding patient history or drugs to use or the recommended lab tests (Abdulnabi et al., 2017). HIE also reduces medical errors. It provides supporting tools for doctors, nurses, lab technicians, and other healthcare providers to assist them in deciding from a knowledge-filled aspect, hence offering customized treatments and effective caregiving. Furthermore, HIE helps in the provision of primary interoperability stages used in diverse electronic health records in any specific caregiver or facility (Evans, 2016).

Technology is the Critical Factor

HIE's proliferation sets the foundation for informed clinical decision-making, resulting in better public health and patient care. HIEs that incorporate a massive network of contributors such as patients, providers, payers, labs, and pharmacies are more beneficial to healthcare organizations that face unsurmountable challenges to access patient information as well as medical history on tests and treatments. A key technology in the adoption of HIE is one that enables the system to have infrastructure and relationships that help to collect, reconcile, and disseminate patient data, hence improves public health management and quality interventions easier and more effective.

The adoption of HIE requires a well-understood interoperability Terry et al. (2018). When designing an interoperable system, the designers should have the end-user in mind, factoring the dynamics of the population understanding and use of such platforms (Tran, 2017). The most effective approaches to ensure an effective interoperable system that can result in an effective HIE includes foundational interoperability, structural interoperability, and semantic interoperability. Foundational interoperability enables the system to transfer data between different platforms; however, the receiving platform or network should not be able to interpret such data but store it until the clinician retrieves the document or information contained within it. The receiving clinician should then be able to enter the required updates. Structural interoperability occurs as an intermediate and defines the movement of healthcare information from one system to another. In this case, standards and principles of message formats have to be followed, ensuring that the data remains unaltered as it passes from one system to another. Also, structural interoperability ensures that the data within the system can be interpreted when it reaches a data field level. Finally, semantic interoperability is staged at the highest level of interoperability technology (Liang et al., 2017). At this level, two or more networks or systems

can effectively exchange and use the health information within the system. The system at the receiving end should be able to interpret the data as well as utilize it to achieve the intended health outcomes like improved quality care, information safety, efficiency, and efficacy of healthcare systems delivery.

Semantic interoperability helps to interpret aggregated data, which assists in identifying preventive care targets and implementing proactive treatments. However, a successfully sustainable HIE demands that all the stakeholders are incorporated in the initial development plans as well as the choice of possible supportive technology infrastructure. Technology forms the basis for HIE implementation. The HIE implementation provides the dexterity required for the system to survive, which has also been the primary goal of Health Information Technology for Economic and Clinical Health Act (HITECH), for over two decades to achieve a healthier population that is subjected to fewer to nil medical errors (Pletcher et al., 2018).

The current issue that exists in the adoption of HIEs relies heavily on the type of technology to be used globally. Several vendors and programmers exist in different parts of the world, and each organization has invested millions in HIE's individual, organizational development. Based on this idea, most of the organizations find it quite challenging to switch to a global system. However, the main issue occurs based on the type of technology to use to ensure that all the systems can be integrated into a network of interrelated systems. Most scholars suggest blockchain technology as the best approach to ensure that the existing technologies are not affected, and the organizations that have already applied different electronic health records systems do not have to discard them and invest in a different technology altogether. However, the most underlying principles on the choice of technology include the degree and type of data usage, level of complexity of business processes, completeness of information, resistance to

change, unintended consequences, and facilitators and barriers to HIE implementation (Feldman et al., 2014).

To attain these principles mentioned by Feldman et al. (2014), the technology adopted in the implementation of HIE should capture identity management, relationship registries, and best of breed approach. Identity management ensures that the technology adopted can accurately and consistently match patients with their healthcare information. Such information should not contain errors, duplicates, and incomplete data. Concerning the relationship registries, the adopted technology ensures sophisticated happening between the patient and the health providers, care teams, and events that result in continued care and should not alter such registries in different settings or when the systems change from one architecture to the other. Lastly, the system so adopted should ensure that it utilizes the best of breed approach. In this case, the adopted technology should consider multiple vendors and find the best system that can result in the intended outcome since no specific vendor can meet all the technological requirements for HIE.

Implications of the Findings

The implications of the current research may be answered based on the different aspects of the healthcare industry, economy, and public health.

Medical Best-Practice for the US and the Global Healthcare Industry

The current research was narrowed down to studying the healthcare states in five countries: The United States of America, the United Kingdom, Canada, China, and Western Europe. The United States is mainly characterized by an increase in the magnitude of healthcare services within the country; hence many have considered its healthcare progress to be manifested by the era of improved technology (Painter & Lavizzo-Mourey, 2008). In the United Kingdom, the National Health Service (NHS) of the UK is responsible for spending large sums of money

on healthcare leadership development (Lecube et al., 2017). In Canada, healthcare leadership is primarily tasked with the maintenance and improvement of healthcare in the country, ensuring that the policies formulated at the national level are sufficient to provide useful and quality care given to the patients within the country (Jeyaraman et al., 2018). In China, the healthcare information system reconciles the health record of the patient in the points of services and supports the clinical questions that might be required by the health providers or the patients. (Ren et al., 2018; Şahne & Şar, 2017). As Wu et al. (2017) pointed out, the Chinese healthcare leaders suggested to design a simple method of representing the clinical documents and messaging the based protocols for the exchange of the healthcare information and to enhance the adoption of the international standards such as the CDA and IHE for the local application vendors. However, in Western Europe, the healthcare systems are multifaceted and recurrently changing across a diversity of settings and health service levels. More significant and major issues in the industry have not been addressed adequately by healthcare leaders. The current study found that leadership and technology play a crucial role in the adoption and implementation of HIE.

Consequently, this indicates that the United States, which concentrates on improved technology, performs way below the UK and Canada (Davis et al., 2014). An example of the US follows that the UK has the most successful healthcare system, followed by Canada, implying that leadership and policy formulations should be the main drivers of healthcare organizations. These findings also harmonize with the results conducted by the World Health Organization (2000) on The Overall Efficiency in all WHO Member States, as shown in APPENDIX C.

According to HealthIT 2010 for HIE benefits, HIE systems have helped healthcare providers improving their healthcare practice management practices by significantly reducing medical practice management errors, hence increasing efficiencies of these provider's practices. As healthcare efficiency increases medical practices, the cost savings for the same practices also

increases. Fully functional and interoperable HIE system reduces cost for medical practices in various ways; for example, it helps decrease medical transcription cost, it helps decrease paper documentation costs by transforming it by automated documentation capabilities. A fully integrated HIE system has the capability of proper disease management systems by providing ad hoc patient educational electronic charts, therefore creating automated clinical documentation. A fully integrated and interoperable HIE system helps create a fully functional hence the best medical system for any healthcare organization.

Based on various best healthcare standards related studies and according to World Health Organization, (2020), best healthcare industry standards are categorized as the standards that are providing clinical quality for patients, reduced medical malpractices by keeping patient safety at the focal point. Furthermore, based on strategic document analysis, according to Centers for Medicare & Medicaid Services. (2020), fully integrated HIE increases patient safety for patients by reducing medical errors, hence creating a prime example of the best medical practice scenario of any given healthcare facility. Thus, it is implied that the US should have a fully integrated and interoperable HIE system adopted nationwide by creating a technologically operable healthcare system that is capable of exchanging patient health information with full security and accuracy. Please refer to APPENDIX D to view a graph of overall healthcare rankings amongst various developed nations.

HIE and Public-GlobalHealth Pandemic (COVID-19)

COVID-19 has posed a more significant health challenge in the world and has affected almost every world economy. Different organizations have ensured that the coronavirus case is reported, the affected people are attended, and the public health is managed. HealthIT is currently one of the departments that are mainly concerned with the collection and reporting of the cases related to COVID-19 data (HealthIT, 2020). The department uses electronic health

information exchange helps to facilitate various effective strategies currently used to combat the disease. In particular, HIE is used in the surveillance of patients infected with the virus since the system can register the number of cases of those diagnosed with different symptoms associated with coronavirus, such as fever, flu, and dry cough, among others. Secondly, HIE enables public health reporting. For instance, when an individual believes that they are infected, they use the available HIE platforms with their organizations to report that they have symptoms that relate to the disease, making it possible for them to be traced, tested, and treated, where possible. HIE also helps with the laboratory tests of patients diagnosed with symptoms of coronavirus. Also, HIE enables hospitals to collect and report data regarding the number of confirmed cases, recovered cases, and deaths from the disease. In different parts of the world, the databases have been developed to enable each country to register such data and report them. HIE also allows for clinical COVID-19 case investigation and management. For instance, COVID-19 resembles some of the common cases of flu, hence, a patient whose medical history indicates that they have a history of flu, allergy, and other respiratory problems cannot be confused with one that is infected with the coronavirus.

Moreover, when a patient is identified as infected, their contacts and current locations can be traced from the system, making it possible to isolate all the potential contacts. Furthermore, the system helps to track and managed healthcare professional's safety and health. Finally, according to the Centers for Medicare & Medicaid Services. (2020) the announcement, for COVID-19 testing and treatment, hospitals and healthcare facilities across the U.S, are to notify of such treatments to the CMS.

In an effort to control the spread of COVID-19, guidelines of *contact-tracing* of infected patients have been suggested by the Centers for Disease Control and Prevention. (2020), in the US, and by the World Health Organization. (2020) globally. By tracing the contact of each

infected patient, these health organizations will be able to map out the flow and spread of this disease, which will enable these health organizations to apply protocols of disease prevention. In order to facilitate contact-tracing, a fully functional and interoperable HIE system will allow patient clinical information to be transferred securely across all health organizations, which in essence will result in mapping the contact-tracing of infected patients through sharing their health records across various health platforms.

ROI (Return on Investment) on a Fully Functional and Adopted HIE

The measurement of return on investment for an organization that uses HIE can be diverse. However, most economists consider improved productivity and efficiency, low disruption to workflow, and improvement in caregiving. The answers can be differ based on the organizations' operations. However, from classical analysis of different systems, it is sufficient to conclude that HIE has a significant ROI in the organizations that utilize it since it is impractical to use it when it can result in losses. It was noted in the reviewed documents that HIE failed in some countries and organizations due to leadership practices as opposed to system metrics. It was also noted that the success of HIE might mostly depend on the number of organizations using the systems, whereby the higher the number, the more effective the utilization. One of the approaches used by the Kansas Health Information Network (KHIN; 2020) is to compute the output of operation as a result of the addition of one patient per day. With this assumption, one added patient results in annual conservation of $10,000 ($50 x 5 days x 40 weeks). KHIN further indicates that if the approach is used for a case of three medics, then that would yield $30,000 of additional revenue each year. The implication of this idea is that a small healthcare organization can gain up to $3000 each year with a $10,000 one time-charge for basic interfaces. (Kansas Health Information Network, 2020). Based on this example, the first year of operation should result in a $17,000 gain, which is equivalent to an ROI of $1.30 when the organization invests

$1.00. In the second and subsequent years, the health organization using HIEs are supposed to gain $27,000, which is equivalent to $9 for an investment of $1.00. More information on HIE ROI has been explained by Walker et al. (2005) in APPENDIX E.

Reduction in Medical Malpractice

Medical malpractices can vary from the overestimation of costs to contravening medical practices. Paterick et al. (2018) indicated that "EMR-related issues contributed to less than 1% of all claims closed by the malpractice insurer to the Doctors' company from January 2007 to June 2014" (p. 559). The most common errors include user errors and EMR systems. Potential errors and malpractices, such as overcharging, can be overcome by using HIE systems. Moreover, doctors may be prevented from potential misdiagnosis of a patient, mismanagement of organizational funds, mismanagement or patient care, and insensitivity to practical healthcare professional practices.

Reduction in Patient Re-Admission Rate

Having access to historical medical data using electronic health records and information systems, as well as interoperable networks, can improve healthcare delivery and individual patient care in several ways. First, electronic health records (EHR) and HIE provide clinicians with a complete, accurate, and retrievable health data. Consequently, this makes such information available at the point of both diagnosis and care, equipping the medics with the power to make informed choices that improve the quality and reliability of healthcare delivery. Secondly, the systems mentioned above provide for more efficient and convenient healthcare delivery by ensuring that doctors and nurses do not have to waste time waiting for records or paperwork and without needing unnecessary or repetitive tests as well as procedures and to avoid unnecessary admissions and readmissions (Ben-Assuli et al., 2013). Ben-Assuli et al. (2013) further indicate that using EHR and HIE directly relates to clinicians' decisions to admit a

patient, thus forming the "constituent for the reduction in the number of seven days readmissions and single-day admissions for all patients" (p. 49). The implication is that some of the medical practices that can result in redundant admissions and readmissions can be avoided. Such methods may include a lack of viewing a patient's data, not being able or negligence to access a patient's medical information, and using incomplete or inconclusive medical records. HIE enables the clinicians to examine external patient records, which, according to Ben-Assuli et al. (2013), results in better patient examination than using local medical history. Such an analysis of the health of a patient helps avoids unnecessary admissions. For instance, if the patient was ever admitted for a case and released for home care, the current doctor may understand the implication of such decisions. As a result of examining the case of the patient, the present clinician can help facilitate the homecare interventions proposed by the earlier doctors or caregivers. APPENDIX F provides the result of unnecessary admissions and readmissions based on the study conducted by Ben-Assuli et al. (2013).

Benefits to the Medicare Reimbursements after HIE Adoption

Medicare provides funds to healthcare facilities, organizations, and individuals to meet healthcare needs. As stated earlier, HIE has several benefits: reduction of redundant admissions and readmissions, reduced medical malpractice, reduced testing, and less time spent at the hospital. By extension, Ben-Assuli et al. (2013) indicated that the use of HIEs reduces admissions and readmissions due to the availability and access to patient medical records. Since Medicare pays for the health of an individual patient, then cases of multiple payments can be reduced since the doctors and nurses would not charge for services that have already been delivered to the patient (Eftekhari et al., 2017). As pointed out by Eftekhari et al. (2017), the reduction in testing as provided by the use of HIEs can help to save millions of dollars on the Medicare expenditure, and particularly, estimates that Medicare could save $63 million annually

by reducing redundant testing in outpatient settings if physicians had access to cross-community HIE data.

Role of the Healthcare Leadership to Support HIE Full Adoption

The current study has confirmed the central role of leadership in HIE's adoption and subsequent implementation. To a greater extent, the success of any particular healthcare organization relies primarily on the leadership characteristics and practices from the local facilities to the state and federal levels. The national-level healthcare leadership makes policies that affect all the health facilities within any particular geographical setting, hence determines the success or the failure of healthcare organizations. More importantly, leadership skills and practices define how healthcare professionals relate with each other and their willingness and ability to contribute positively to the design and implementation of a system. Leaders must be able to foster relationships across different professional bodies as these make it easy for other professionals to respond with urgency and skill to solve the problem identified or faced by the clinicians yet have their solution in the information technology. The healthcare leaders should collaborate with leaders in other departments, share the necessary information or concepts, and listen to different experts' contributions before making a final decision on the implementation process.

Moreover, the final decision should be one that factors all the recommendations given at the various meetings or deliberations on the solution of the existing problems. The outcome of the study by the World Health Organization on world health systems put the United Kingdom ahead of others. It reiterated that the country is ranked higher due to its expenditure on leadership training. However, it is essential to note that the training of leaders as a priority does not undermine the need to have proper infrastructure. On the contrary, appropriate leadership training equips the management with the right skills and principles that help them decide on the

core needs of the organizations they lead and formulating policies that have more significant impacts on the healthcare outcome of a particular country.

Conclusion

The current research endeavored to answer the following research questions:

Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and HIE's success?

Question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?

Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?

Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?

The findings had indicated that the collaboration of healthcare leaders at various levels within the healthcare organization, with relevant stakeholders and professionals in different healthcare technology and core administrative fields, leads to the HIE systems design enhancements, which leads to the successful implementation of the HIE related projects. Secondly, it has been revealed that healthcare management should foster professional development to ensure that junior healthcare workers become more acquainted with the latest trends in healthcare organizations and the overall healthcare industry, such as new technologies, policies, and procedures. Healthcare leaders should invest in healthcare career development and continuing education programs for their employees. Additionally, with this intervention, healthcare professionals would be able to respond to the challenges that come with the

responsibilities they are given as newly developed leaders, including ensuring a successful implementation of projects such as the adoption of global HIEs. Thirdly, the current healthcare leadership trend in the world is to have a globalized system of patient health information exchange. Different vendors create different platforms for exchanging data, hence making it difficult to assemble and integrate all the various HIEs platforms into a secure working network. Adopting a particular standardized healthcare technology, such as blockchain technology, can help interlink all the vendor-provided HIEs and result in a global network on interoperable healthcare information exchange. Lastly, the current research has successfully revealed that the healthcare organizations that have adopted HIEs have seamless and reduced-erred operations resulting in a higher return on investments in HIEs used. Such organizations are efficiently geared and directed to provide a higher quality of healthcare as all the required patient information is available at the point of care, hence saving time, avoiding unnecessary admissions and readmissions. Also, HIE saves the costs of hospitalization and treatment, reduce chances of medical errors and malpractices, and helps to foster the interventions of healthcare funders such as Medicare and Medicaid by saving on the costs of care funded by such providers. Table 8 below displays all research questions and their corresponding answers based on strategic and systematic document analysis.

Table 8

Research Questions and Answers Based on Findings

Research Questions	Respective Answers
Question 1: What roles do healthcare leaders play in enhancing collaboration amongst the various healthcare stakeholders in HIE implementation and HIE's success?	The collaboration of healthcare leaders at various levels within the healthcare organization, with relevant stakeholders and professionals in different healthcare technology and core administrative fields, leads to the HIE systems design enhancements, which leads to the successful implementation of the HIE related projects.
Question 2: How does healthcare management influence doctors, nurses, health IT professionals, and other key workers to adopt HIE?	It has been revealed that healthcare management should foster professional development to ensure that junior healthcare workers become more acquainted with the latest trends in healthcare organizations and the overall healthcare industry, such as new technologies, policies, and procedures. Healthcare leaders should invest in healthcare career development and continuing education programs for their employees. Additionally, with this intervention, healthcare professionals would be able to respond to the challenges that come with the responsibilities they are given as newly developed leaders, including ensuring a successful implementation of projects such as the adoption of global HIEs.
Question 3: How do healthcare leaders create seamless collaboration strategies with healthcare vendors and other healthcare stakeholders on the adoption of the best HIE systems that comply with global healthcare policies?	The current healthcare leadership trend in the world is to have a globalized system of patient health information exchange. Different vendors create different platforms for exchanging data, hence making it difficult to assemble and integrate all the various HIEs platforms into a secure working network. Adopting a particular standardized healthcare technology, such as blockchain technology, can help interlink all the vendor-provided HIEs and result in a global network on interoperable healthcare information exchange.

Research Questions	Respective Answers
Question 4: What types of competitive advantages do healthcare organizations have while using HIE systems within their healthcare organization? That is, how does a healthcare organization stand a favorable or superior business position as a result of using the HIE systems?	The current research has successfully revealed that the healthcare organizations that have adopted HIEs have seamless and reduced-erred operations resulting in a higher return on investments in HIEs used. Such organizations are efficiently geared and directed to provide a higher quality of healthcare as all the required patient information is available at the point of care, hence saving time, avoiding unnecessary admissions and readmissions. Also, HIE saves the costs of hospitalization and treatment, reduce chances of medical errors and malpractices, and helps to foster the interventions of healthcare funders such as Medicare and Medicaid by saving on the costs of care funded by such providers.

Recommendations

Based on the findings, the current research recommends the following:

i. The United States should reimburse additional educational funding to help in the training of healthcare leaders to become more resourceful to healthcare organizations. Such training will help with policymaking and successful healthcare project implementation.

ii. The local governments (both federal and state) should provide avenues for healthcare career development, particularly in areas that are core in the development of global HIE, as the world is directed towards the adoption of technology-based healthcare. Investments in this particular area will place the country at a higher level in the provision of such services to different markets in the world.

iii. The adoption of blockchain technology will help to merge all the different HIEs provided by different vendors.

iv. The State governments should provide the necessary support for the healthcare organizations that use HIEs to reduce the idea of competition based on the type of HIEs used by different

facilities. The benefits occurring as a result of utilizing the technology should be spread across the various platforms and hospitals to reduce competitive advantage resulting from the use of those HIEs.

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APPENDIX A

Pepperdine IRB Approval Letter

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

May 18, 2020

Protocol #: **051820**

Project Title: **Adoption of the Healthcare Information Exchange System and the Role of Healthcare Leadership.**

Dear Mo:

Thank you for submitting a "GPS IRB Non-Human Subjects Notification Form" for ***Adoption of the Healthcare Information Exchange System and the Role of Healthcare Leadership*** project to Pepperdine University's Institutional Review Board (IRB) for review. The IRB has reviewed your submitted form and all ancillary materials. Upon review, the IRB has determined that the above titled project meets the requirements for *non-human subject research* under the federal regulations 45 CFR 46.101 that govern the protection of human subjects.

Your research must be conducted according to the form that was submitted to the IRB. If changes to the approved project occur, you will be required to submit *either* a new "GPS IRB Non-Human Subjects Notification Form" or an IRB application via the eProtocol system (httpw://irb.pepperdine.edu) to the Institutional Review Board.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the IRB and documenting the adverse event can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* at https://community.pepperdine.edu/irb/policies/.

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval.

On behalf of the IRB, we wish you success in this scholarly pursuit.

Sincerely,

Institutional Review Board (IRB)
Pepperdine University

cc: Mrs. Katy Carr, Assistant Provost for Research
Dr. Judy Ho, Graduate School of Education and Psychology IRB Chair

APPENDIX B

List of Articles for Systematic Literature Review

Table 9

List of Contextual Strategic Articles Analyzed in the Literature Review

Author (References)	Type of publication	Summary/ Conclusion
Heath, M., Appan, R., & Gudigantala, N. (2017). Exploring Health Information Exchange (HIE) Through Collaboration Framework: Normative Guidelines for IT Leadership of Healthcare Organizations. Information Systems Management, 34(2), 137-156.	Web publication Article peer-reviewed	Health Information Exchanges (HIEs) hold the promise to integrate patient data residing across disparate information systems in various hospitals to improve care coordination, patient engagement, and provisioning of real-time information to physicians. This research posits that collaboration is the key to HIE's success. Drawing from the existing literature on collaboration, we discuss collaboration-related challenges that healthcare IT leaders are facing and provide normative guidelines that they can implement during the HIE
Kash, B. A., Baek, J., Davis, E., Champagne-Langabeer, T., & Langabeer II, J. R. (2017). Review of successful hospital readmission reduction strategies and the role of health information exchange. *International Journal of Medical Informatics*, 104, 97-104.	Web publication Peer-reviewed article	The article discusses how the United States has invested substantially in technologies that enable health information exchange (HIE). The use of HIE has helped to reduce hospital readmission rates in hospitals at the community level. The article focuses on the successful reduction of hospital readmission rates after the integration of HIE as a strategy. The study hypothesized that HIE initiatives would result in decreased hospital readmissions.

Author (References)	Type of publication	Summary/ Conclusion
Bao, C., & Bardhan, I. (2017). Measuring Relative Performance of Accountable Care Organizations: the role of health information technology.	2016) and focuses on the specific role of provider usage of EHRs as an important driver of ACO performance. Page 4 … Prior studies have used various proxies to represent healthcare facility size, such as the number of FTE employees (e.g., Gholami et al... Health IT and ACO Efficiency	Bao & Bardhan (2017) discusses the importance of EHRs in promoting Accountable Care Organizations' efficiency through resource mobilization. EHRs are recognized as an important driver of ACO performance and model of addressing excess expenditures, inefficient care delivery, and low patient satisfaction.
Wang, Y., Kung, L., & Byrd, T. A. (2018). Big data analytics: Understanding its capabilities and potential benefits for healthcare organizations. *Technological Forecasting and Social Change*, *126*, 3-13.	Web publication Peer reviewed	Wang, Kung & Byrd (2018) discuss the immense capability of big data analytics and benefits for healthcare organizations. The article shows how big data can foster an information-sharing culture in the healthcare setting.
Middleton, B., & Cheung, N. T. (2018). Health Information Technology and Value. Fundamental Advances in Clinical Informatics (pp. 99-114).	Web publication Peer reviewed	Middleton & Cheung (2018) reviewed the value of EHR in both financial and clinical terms in which the barriers to achieving their values were discussed. On the leadership, the value of clinical decision was recognized as managing clinical information. The authors acknowledged the importance of HIT in delivering value to the patient, society, and the health system.

Author (References)	Type of publication	Summary/ Conclusion
Adjerid, I., Adler-Milstein, J., & Angst, C. (2018). Reducing Medicare spending through electronic health information exchange: the role of incentives and exchange maturity. Information Systems Research.	Web publication Peer-reviewed	Adjerid, Adler-Milstein & Angst (2018) discuss the role of HIE in the reduction of Medicare spending through increased efficiency, improved clinical decision making, and access to health information.
Ayvaci, M., Cavusoglu, H., Kim, Y., & Raghunathan, S. (2017). Payment Mechanisms, Incentives for Adoption, And Value of Health-Information Exchanges (HIEs).	Web publication Peer-reviewed article	Ayvaci, Cavusoglu, Kim & Raghunathan (2017) discuss HIEs as a payment model and infrastructure for information sharing. The article highlights the importance of HIEs in reducing medical costs and improving the quality of care by coordinating care through information technology.
Williams, K. S., Shah, G. H., MStat, M. S., & Leider, J. P. (2017). Overcoming Barriers to Experience Benefits: A Qualitative Analysis of Electronic Health Records and Health Information Exchange Implementation in Local Health Departments. eGEMs (Generating Evidence & Methods to improve patient outcomes), 5(1).	Web publication Peer-reviewed article	This is a qualitative analysis of HIE and EHR adoption of local health departments. Williams et al. (2017) show the importance of technology in healthcare delivery by linking technology with clinical care.

Author (References)	Type of publication	Summary/ Conclusion
Klein, D. M., Pham, K., Samy, L., Bluth, A., Nazi, K. M., Witry, M., ...& Pfeiffer, L. (2017). The veteran-initiated electronic care coordination: a multisite initiative to promote and evaluate consumer-mediated health information exchange. Telemedicine and e-Health, 23(4), 264-272.	Web publication	Klein et al. (2017) discuss the importance of HIE in promoting healthcare delivery through information sharing. The article focuses on consumer-mediated HIE use at the community level.
Yu, K. (2017). *Getting Everyone on the" SamePage": Co-design for Health Information Exchange during Care Transitions* (Doctoral dissertation).	Web publication Doctoral dissertation	The article discusses the importance of HIE during transition from one clinical setting to others in the U.S healthcare system. The article highlights the role of HIE
Leider, J. P., Shah, G. H., Williams, K. S., Gupta, A., & Castrucci, B. C. (2017). Data, staff, and money: leadership reflections on the future of public health informatics. *Journal of Public Health Management and Practice,* 23(3), 302-310.	Web publication	Leider et al. (2017) discuss the importance of leadership in public health informatics. This article provides the link between the payment model, healthcare data, and the role of staff in healthcare improvement.
Akhlaq, A., Sheikh, A., & Pagliari, C. (2017). Health information exchange as a complex and adaptive construct: scoping review. *Journal of Innovation in Health Informatics*, 23(4), 633-683.	Web publication Survey report	This article recognizes the adaptive and complex characteristics of HIE. Also, Akhlaq et al. (2017) summarizes the role of HIE in healthcare management

Author (References)	Type of publication	Summary/ Conclusion
Kisekka, V., & Giboney, J. S. (2018). The Effectiveness of Healthcare Information Technologies: Evaluation of Trust, Security Beliefs, and Privacy as Determinants of Healthcare Outcomes. *Journal of Medical Internet Research*, 20(4).	Web publication	This article summarizes the effectiveness of healthcare information in delivering improved healthcare outcomes. The article highlights the importance of healthcare providers in ensuring medical records are secure through improved security, trust, and privacy.
Mello, M. M., Adler-milstein, J., Ding, K. L., &Savage, L. (2018). Legal Barriers to the Growth of Health Information Exchange—Boulders or Pebbles? The Milbank Quarterly, 96(1), 110-143.	Web publication	Mello et al. (2018) highlight the possible legal barriers to the development of HIE. Among the issue raised include HIPAA compliance to lower-level and liability risks
Vest, J. R., Greenberger, M. F., & Garnatz, A. (2017). Diverging views on health information exchange organizations. Learning Health Systems, 1(3).	Web publication	This article provides diverse views on HIE organizations and the importance of HIE in the improvement of the healthcare system.
Esmaeilzadeh, P., & Sambasivan, M. (2017). Patients' support for health information exchange: a literature review and classification of key factors. BMC medical informatics and decision making, 17(1), 33.	Web publication literature review	This article summarizes the role of HIE in supporting the decision-making process in the healthcare setting. The article highlights the importance of healthcare technologies such as EHRs and personal health records in promoting privacy, health data security, and confidentiality of personal health.

Author (References)	Type of publication	Summary/ Conclusion
Eftekhari, S., Yaraghi, N., Gopal, R., & Ramesh, R. (2017). The Impact of Health Information Exchanges on Physicians' Centrality in the Referral Network.	Web publication Peer-reviewed article	This article summarizes the value that Health Information Exchanges (HIE) creates in the referral process when implemented in U.S. healthcare. The author shows how HIE creates a competitive advantage for specialists. Also, the article shows how physicians who have adopted HIE can collaborate with a specialist who has also adopted HIE.
Martinez, D. A., Feijoo, F., Zayas-Castro, J. L., Levin, S., & Das, T. K. (2018). A strategic gaming model for health information exchange markets. Healthcare management science, 21(1), 119-130.	Web publication Peer-reviewed article	Martinez et al. (2018) summarize the role of HIE in the provision of management information. The articles show how HIE can be used to provide analytical data related to the hospital's objective function.
Mason, P., Mayer, R., Chien, W. W., & Monestime, J. P. (2017). Overcoming Barriers to Implementing Electronic Health Records in Rural Primary Care Clinics. The Qualitative Report, 22(11), 2943-2955.	Web publication	This article summarizes the barriers impeding the implementation of EHR in rural areas.
Khuntia, J., Mithas, S., & Agarwal, R. (2017). How Service Offerings and Operational Maturity Influence the Viability of Health Information Exchanges. Production and Operations Management.	Web publication	This article summarizes the importance of service offering for operational maturity in HIEs' viability. The article shows how digital transformation can bring efficiency in healthcare settings.

Author (References)	Type of publication	Summary/ Conclusion
Hohmeier, K. C., Spivey, C. A., Boldin, S., Moore, T. B., & Chisholm-Burns, M. (2017). Implementation of a health information exchange into community pharmacy workflow. Journal of the American Pharmacists Association, 57(5), 608-615.	Web publication Peer-reviewed article	This article highlights the importance of HIE in enhancing community pharmacy workflow and how it results in inefficiency in the provision of healthcare services.
Andargoli, A. E., Scheepers, H., Rajendran, D., & Sohal, A. (2017). Health information systems evaluation frameworks: A systematic review. *International Journal of Medical Informatics*, *97*, 195-209.	Web publication Peer-reviewed source	This article presents the result of a systematic review of the literature on Health Information Systems to understand the available HIS frameworks.
Van, W. M., & Suino, P. (2017). *Leadership in public organizations: An introduction*. New York: Routledge, Taylor & Francis Group.	Web publication	This source provides information on organization leadership.
Harrison, C. (2018). *Leadership theory and research: A critical approach to new and existing paradigms*.	Web publication	The article discusses new and existing leadership models that are applicable to HIE implementation.

Author (References)	Type of publication	Summary/ Conclusion
Williams, K. S., Shah, G. H., MStat, M. S., & Leider, J. P. (2017). Overcoming Barriers to Experience Benefits: A Qualitative Analysis of Electronic Health Records and Health Information Exchange Implementation in Local Health Departments. *eGEMs (Generating Evidence &Methods to improve patient outcomes)*, *5*(1).	Web publication	The article summarizes the benefits and possible barriers in HIE and EHR implementation.
Barry, S., & Sloan School of Management. (2016). *Critical factors for successful electronic health record (EHR) implementation*.	Web publication	This article discusses the factors that determine the successful implementation of EHR.
Zizzo, N., Bell, E., Lafontaine, A. L., & Racine, E. (2017). Examining chronic care patient preferences for involvement in health-care decision making: the case of Parkinson's disease patients in a patient-centered clinic. *Health Expectations*, *20*(4), 655-664.	Web publication	This article discusses the application of HIE in the health-care decision-making process.

APPENDIX C

Overall Healthcare Efficiency of Member States (WHO, 2000)

Overall efficiency

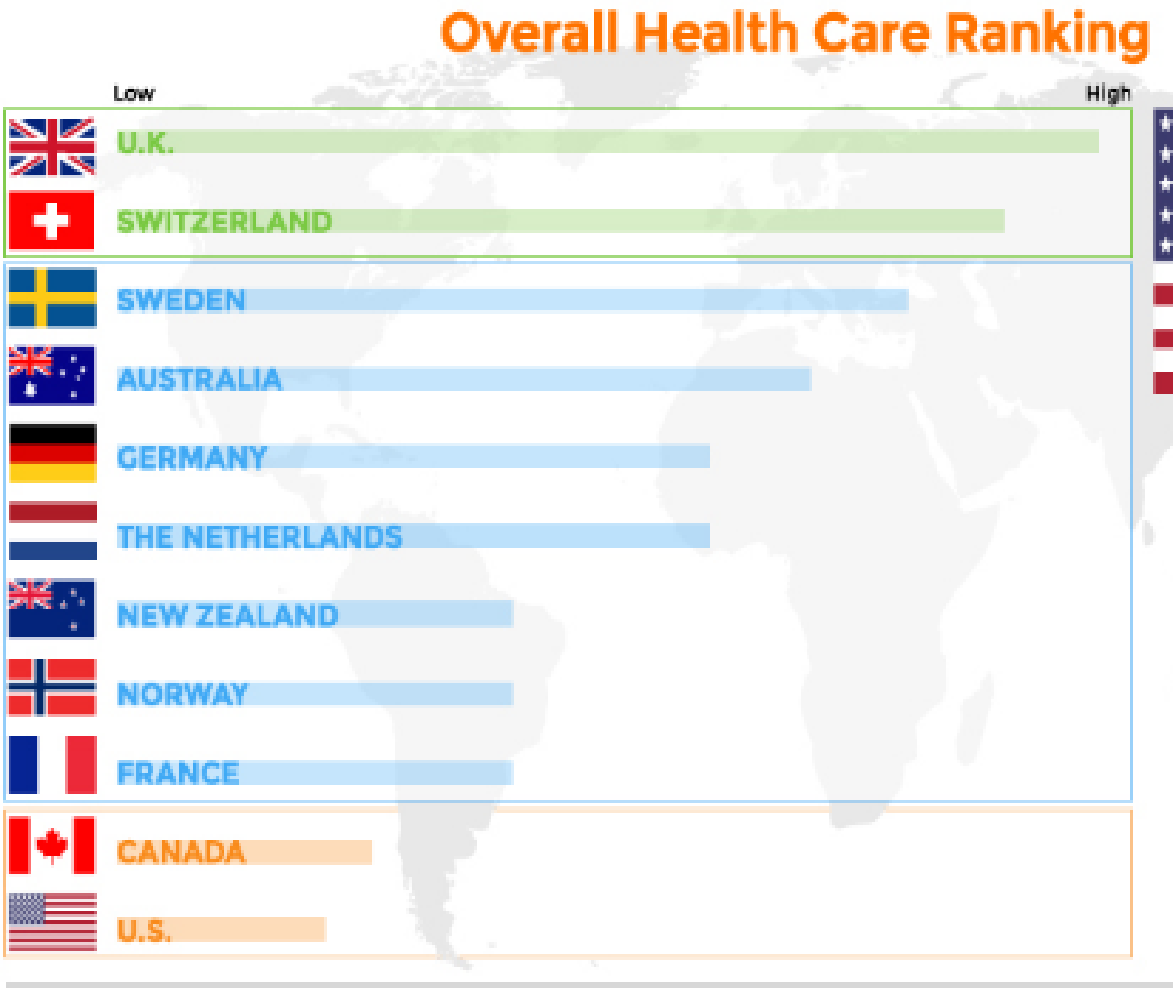
Rank	Uncertainty Interval			Member State	Index	Uncertainty Interval		
1	1	-	5	France	0.994	0.982	-	1.000
2	1	-	5	Italy	0.991	0.978	-	1.000
3	1	-	6	San Marino	0.988	0.973	-	1.000
4	2	-	7	Andorra	0.982	0.966	-	0.997
5	3	-	7	Malta	0.978	0.965	-	0.993
6	2	-	11	Singapore	0.973	0.947	-	0.998
7	4	-	8	Spain	0.972	0.959	-	0.985
8	4	-	14	Oman	0.961	0.938	-	0.985
9	7	-	12	Austria	0.959	0.946	-	0.972
10	8	-	11	Japan	0.957	0.948	-	0.965
11	8	-	12	Norway	0.955	0.947	-	0.964
12	10	-	15	Portugal	0.945	0.931	-	0.958
13	10	-	16	Monaco	0.943	0.929	-	0.957
14	13	-	19	Greece	0.933	0.921	-	0.945
15	12	-	20	Iceland	0.932	0.917	-	0.948
16	14	-	21	Luxembourg	0.928	0.914	-	0.942
17	14	-	21	Netherlands	0.928	0.914	-	0.942
18	16	-	21	United Kingdom	0.925	0.913	-	0.937
19	14	-	22	Ireland	0.924	0.909	-	0.939
20	17	-	24	Switzerland	0.916	0.903	-	0.930
21	18	-	24	Belgium	0.915	0.903	-	0.926
22	14	-	29	Colombia	0.910	0.881	-	0.939
23	20	-	26	Sweden	0.908	0.893	-	0.921
24	16	-	30	Cyprus	0.906	0.879	-	0.932
25	22	-	27	Germany	0.902	0.890	-	0.914
26	22	-	32	Saudi Arabia	0.894	0.872	-	0.916
27	23	-	33	United Arab Emirates	0.886	0.861	-	0.911
28	26	-	32	Israel	0.884	0.870	-	0.897
29	18	-	39	Morocco	0.882	0.834	-	0.925
30	27	-	32	Canada	0.881	0.868	-	0.894
31	27	-	33	Finland	0.881	0.866	-	0.895
32	28	-	34	Australia	0.876	0.861	-	0.891
33	22	-	43	Chile	0.870	0.816	-	0.918
34	32	-	36	Denmark	0.862	0.848	-	0.874
35	31	-	41	Dominica	0.854	0.824	-	0.883
36	33	-	40	Costa Rica	0.849	0.825	-	0.871
37	35	-	44	United States of America	0.838	0.817	-	0.859
38	34	-	46	Slovenia	0.838	0.813	-	0.859

Overall Efficiency of healthcare ranking among developed nations, showing the U.S being at the bottom of the efficient ranking rankings list.

Efficiency ranking list from World Health Organization: https://www.who.int/healthinfo/paper30.pdf

APPENDIX D

Overall Healthcare Ranking (Davis et al., 2014)



The above healthcare ranking chart is displaying the health ranking of the US is being very low among other developed nations for healthcare ranking. A table published by *The Commonwealth Fund, June 2014*.

Healthcare Ranking Chart accessed on May 19, 2020:

https://www.commonwealthfund.org/publications/fund-reports/2014/jun/mirror-mirror-wall-2014-update-how-us-health-care-system

APPENDIX E

Health Benefit Calculation Chart

Annual National Benefit from Level 4 Health Care Information Exchange and Interoperability (HIEI) Between Outpatient Providers and Independent Laboratories (Walker et al., 2005)

Item	Amount
A—Lab fee billed per test	$40.00[a]
B—Provider administrative cost incurred per test (included in fee billed for visit)	$19.25[b]
C—Total cost per test to labs and providers (A+B)	$59.25
D—Lab test costs billed per person per year	$86.52[a]
E—Number of lab tests per person per year (D÷A)	2.17
F—Total cost of lab tests per person per year (C×E)	$128.57
G—Avoidable redundancy in testing, estimate one	20%[c]
H—Avoidable redundancy in testing, estimate two	8.6%[d]
I—Average avoidable redundancy in testing (average of G and H)	14.3%
J—Proportion of avoidable redundant tests that could be avoided at Level 4	95%[b]
K—Tests avoided at Level 4 (I×J)	13.7%
L—Tests avoided per person per year (E×K)	0.294
M—Costs saved from avoided tests per person per year (C×L)	$17.41
N—Remaining tests per person per year (E−L)	1.87
O—Proportion of lab test administrative costs that could be avoided at Level 4	95%[b]
P—Provider lab test administrative cost avoided per person per year (B×N×O)	$34.18
Q—Lab administrative cost incurred per test (included in fee billed for test)	$20.40[b]
R—Lab administrative cost avoided per person per year (N×O×Q)	$36.22
S—Total avoided cost per person per year, from avoided tests and avoided administrative costs on remaining tests (M+P+R)	$87.81
T—U.S. population	281,421,906[e]
U—Cost adjustment factor	1.286[f]
V—Annual national benefit of Level 4 HIEI between outpatient providers and laboratories (S×T×U)	$31,800,000,000

Annual National benefits chart from The Value of Health Care Information Exchange and Interoperability.

Chart: https://www.healthaffairs.org/doi/10.1377/hlthaff.W5.10

APPENDIX F

Patient Characteristics Chart

Comparison of HMO insured patients vs. other HMO insured patients (All sample and the admission subset) (Ben-Assuli et al., 2013)

Patient characteristics: Comparison of HMO insured patients vs. other HMO insured patients (All sample and the admission subset)

Characteristics	The main HMO	Other HMOs	Total study sample
Data on all referrals (Admissions and Discharges) – All Sample			
Number of Referrals	**n = 210,568**	**n = 71,182**	**n = 281,750**
Age (years)	48.6 (Quartiles: 27.6, 51.6, 69.9)	39.2 (Quartiles: 20.5, 36.5, 55.7)	46.3 (Quartiles: 25.4, 47.8, 67.3)
Male (%)	99,951 (47.5%)	35,683 (50.1%)	135,634 (48.1%)
Referrals when EHR IS Viewed (%)	68,851 (32.7%)	18,991 (26.7%)	87,842 (31.2%)
	Local: 58,468 (27.8%)	Local: 17,197 (24.2%)	[Local: 75,665 (26.9%)
Referrals when EHR IS Viewed [Divided by Interoperability]	External: 10,383 (4.9%)	External: 1,794 (2.5%)]	External: 12,177 (4.3%)]
Admissions (%)	89,473 (42.5%)	26,246 (36.9%)	115,719 (41.1%)
Additional Data Only on the Admissions' subset			
Number of Admissions	**n = 89,473**	**n = 26,246**	**n = 115,719**
Admissions When EHR IS Was Viewed (% from All admissions)	34,313 (38.4%)	8,717 (33.2%)	43,030 (37.2%)
Admissions When EHR IS Was Not Viewed (% from All Admissions)	55,160 (61.6%)	17,529 (66.8%)	72,689 (62.8%)
Readmission within seven Days (% from Admissions)	2,830 (3.2%)	911 (3.5%)	3,741 (3.2%)
Readmission within 30 Days (% from Admissions)	6,802 (7.6%)	1,823 (6.95%)	8,625 (7.45%)
Single-Day Admissions (% from Admissions)	18,449 (20.6%)	6,859 (26.1%)	25,308 (21.9%)
Admission Period (days)	4.4 (Quartiles: 2, 3, 5)	3.8 (Quartiles: 2, 3, 4)	4.3 (Quartiles: 2, 3, 5)

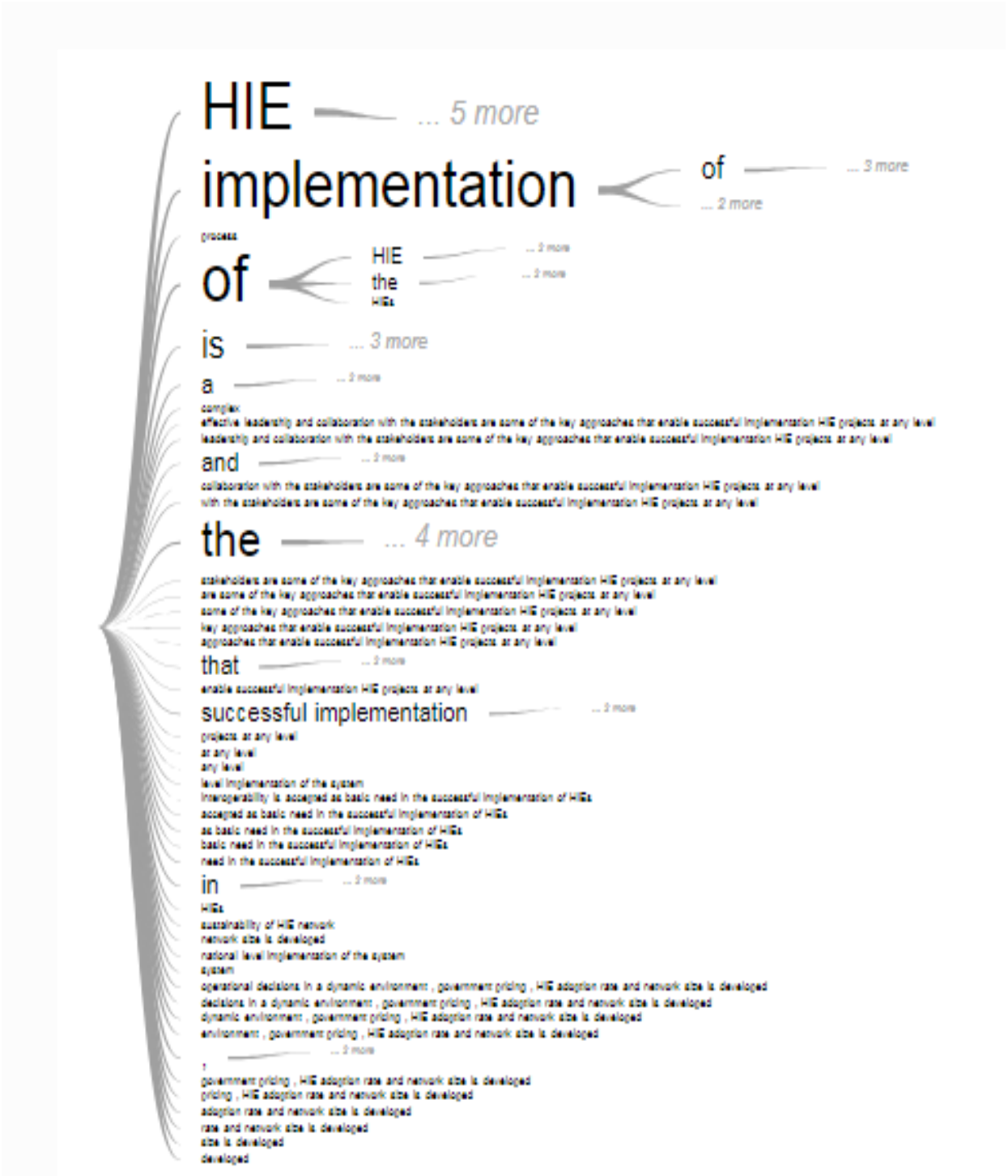
HMO Insured patients vs. another HMO insured patient chart.

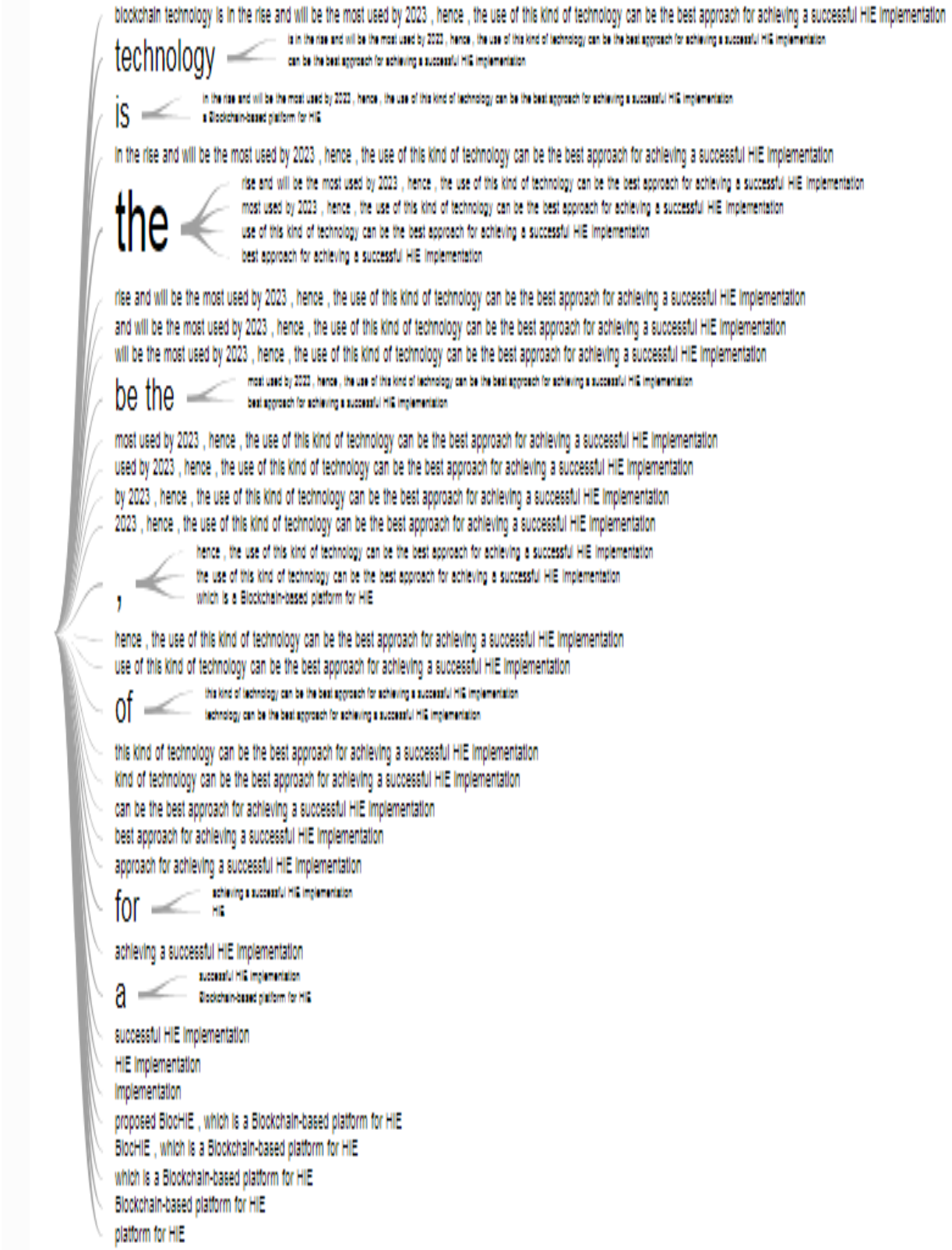
Chart: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3651728/

APPENDIX G

Sample Themes Screenshots from NVivo-12 Software

i. HIE Implementation

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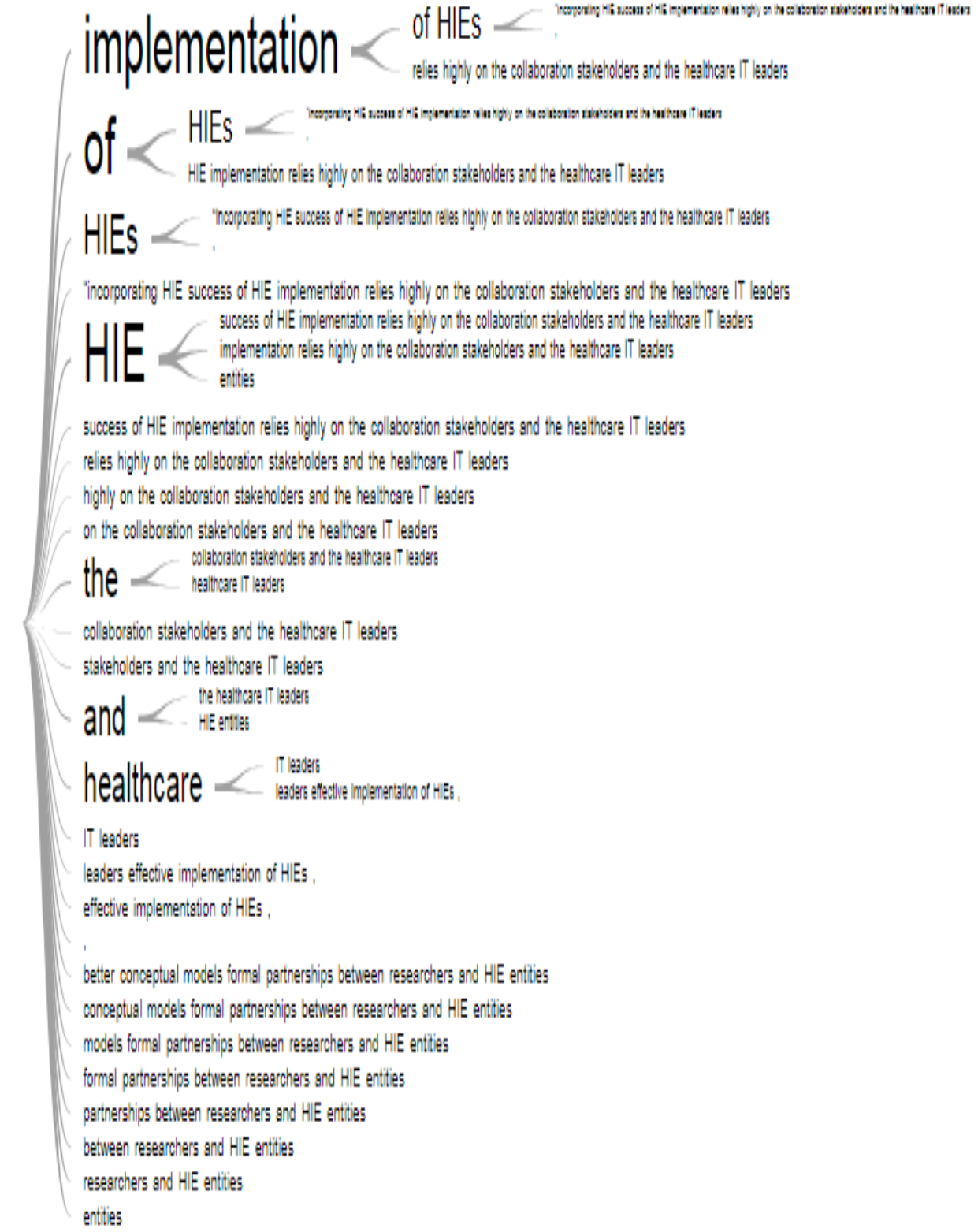
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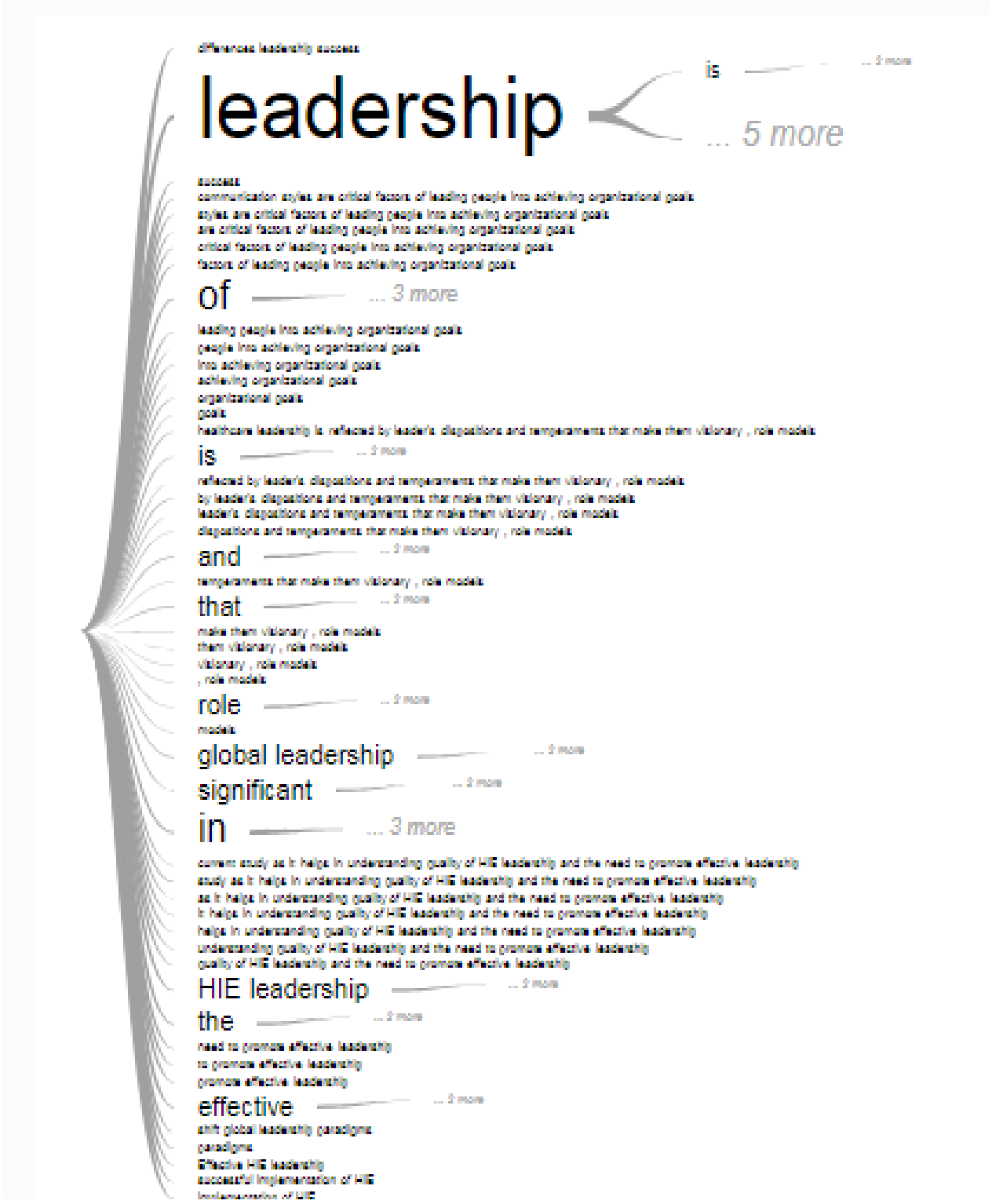
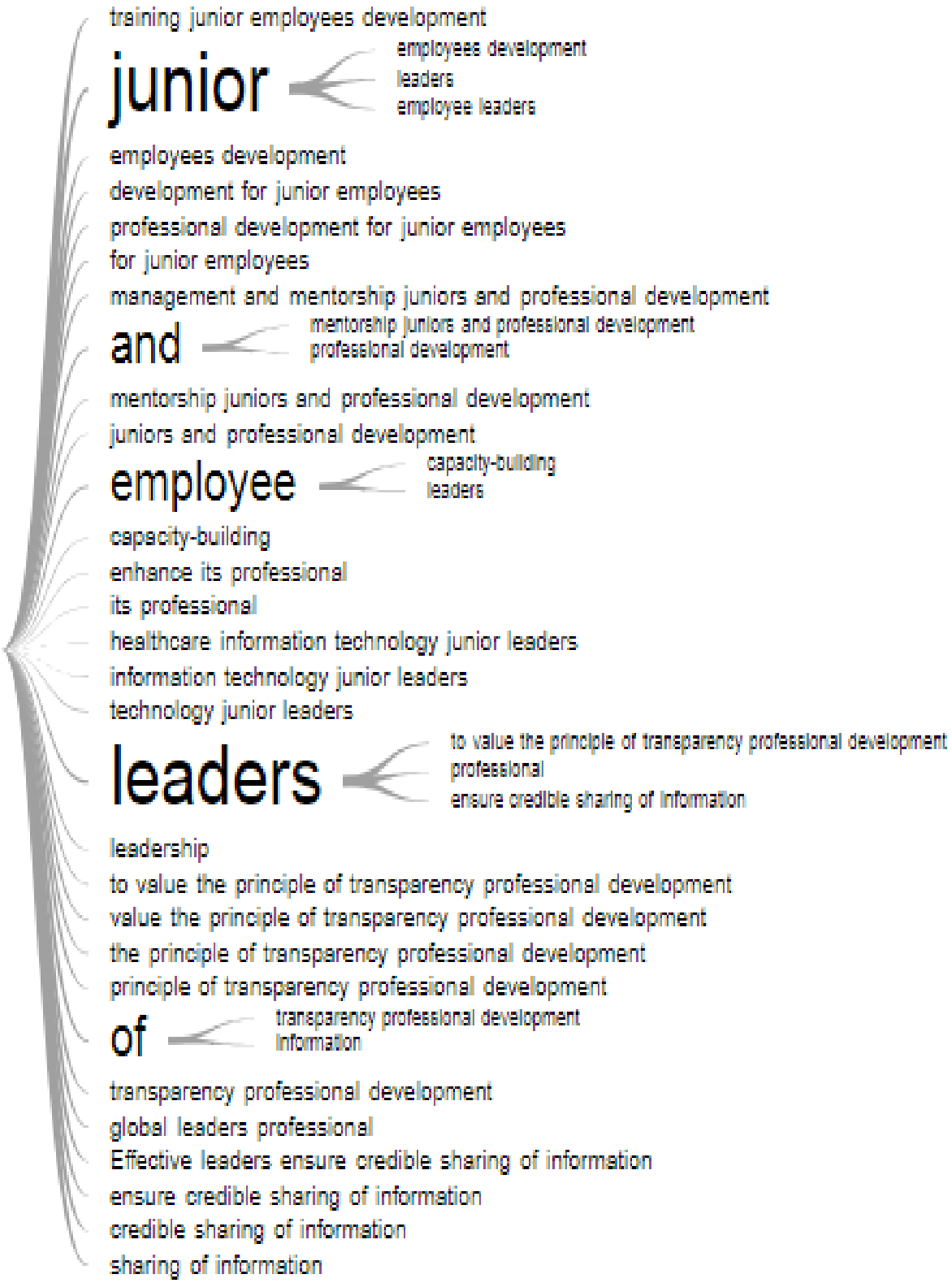
ii. Healthcare Management and Professional Development

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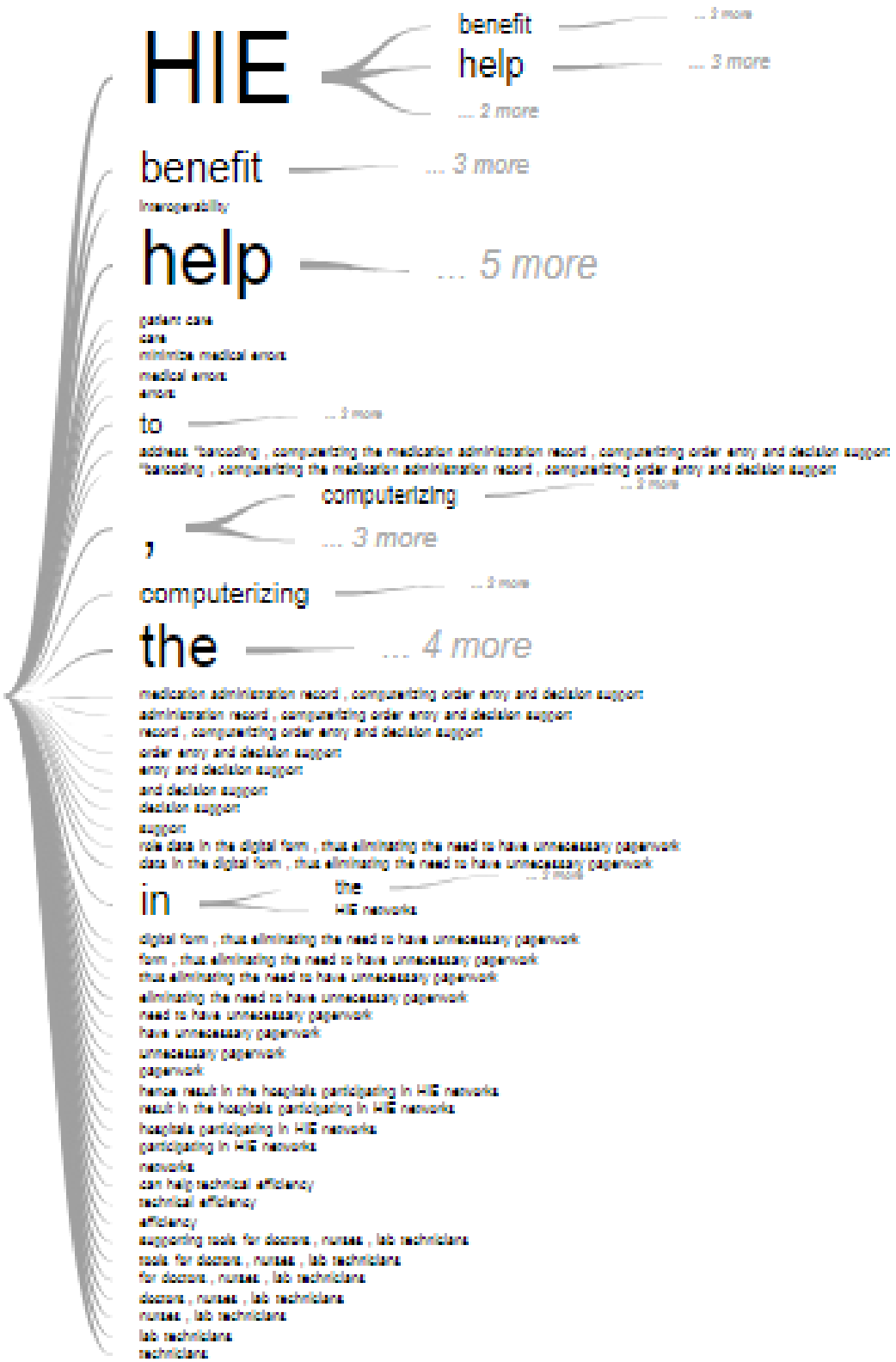
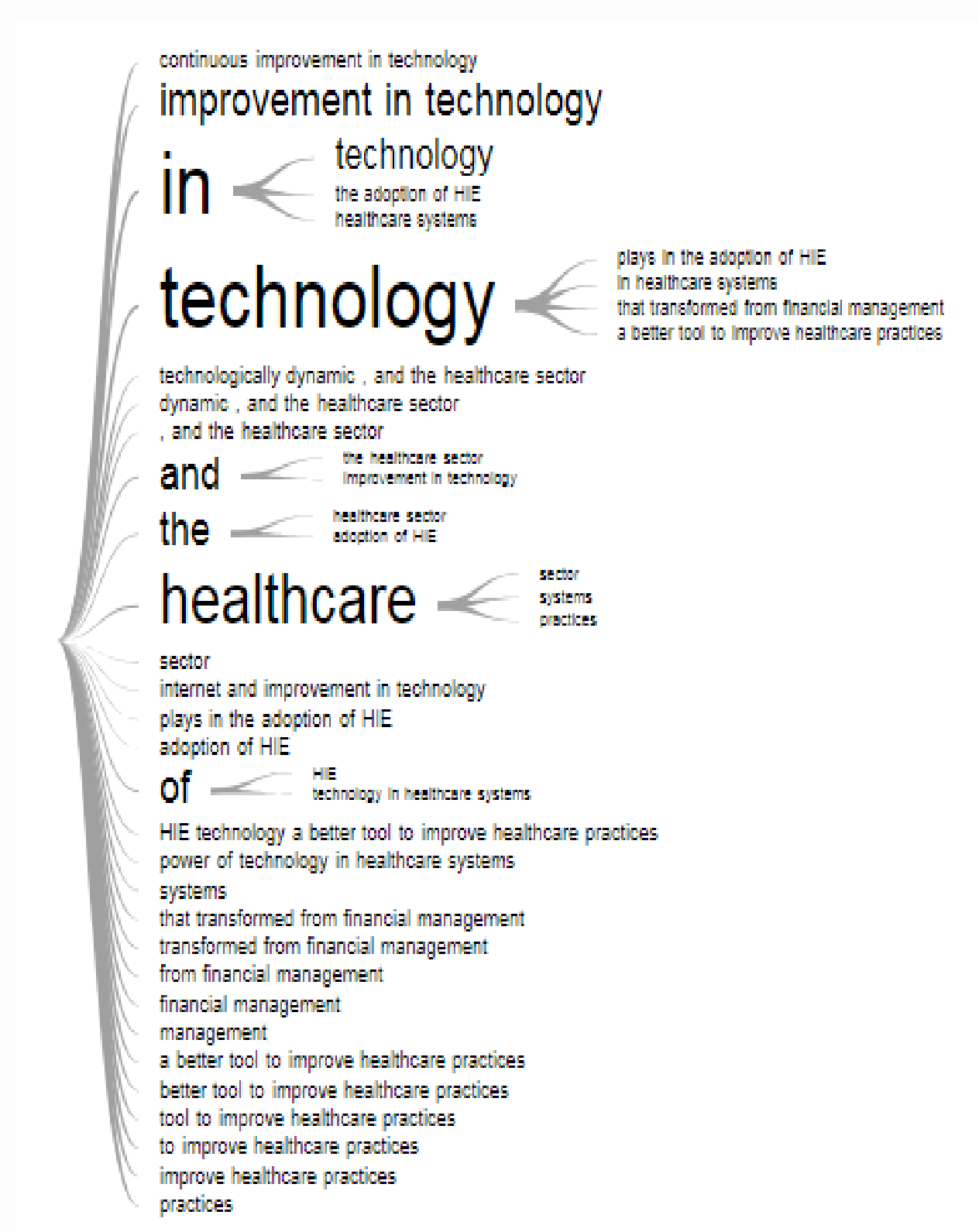
iii. Benefits of HIE



iv. Technology is the Critical Factor



APPENDIX H

Systematic Analysis of Databases and Gov Reports

Theme 1: HIE Implementation
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