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Deploying Electronic Health Record (HER) and Information Technology for Resolving Health Disparity Challenges

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Abstract

This paper examines the importance and function of HIT in the handling of the health disparities among the racial and minority ethnic population. From researches and investigation on the utilization of health care based technologies, there were discoveries that certain kind of population, in the minority, was affected. Recent and evolving use of Information Technology in the healthcare sector among the population that is in the minority and ethnicity in critically observed, stressing the areas that utilize IT in these population different from non-minority group and highlighting the need for newer form of social means of communication in the health education and delivery sector. In this paper, the author highlights the capabilities of resolving health disparities challenges using the electronic health record (EHR) and Information Technology and the subsequent impact of health information technology in the health care industry. Furthermore, the article also identifies the notable challenges in the implementation of the EHR among the minority population, and vividly explains the possibilities of Health Information Technology (HIT) in the handling of the disparities in health.

Keywords: Health, Health Care, Health Disparities, Electronic Health Record (EHR), Health Information Technology (HIT), racial, minority, ethnicity

1.0 Introduction

The notable monumental developments in the Information Technology (IT) are evidenced in the transformation of the society use line today. The health care sector has introduced changes also as a result of Information Technology, especially in the areas of the public health

biomedical research, administration and finance [2]. In view of these technological advancements, said that IT must play a prominent role in the re-design of the Information System in the health care for the enhancement of the quality of service to the patients. Moreover, the

stakeholders in the health care are interested in the potentials of IT in solving the health disparities being experienced among minority populations [1] [9] [14]. In the evaluations of the popularities of deploying IT into the disparities in the health care system, the hindrances and e- health solution to be better understood. Moreover, since the health is gradually being implemented in different settings, there is the need to identify the challenges and possibilities in these settings. These identified challenges and possibilities would enable an approach that is evidenced. Based on designing, the development, and in deploying relevant tools and program applications, there would also be the facilitation of various approaches to the development of the IT in the healthcare and enabling reasonable tracking and assessment of the cost, the processes and the outcomes.

2.0 Fundamentals of e-health records (EHR) and Health Information Technology (HIT)

2.1 Concept of Electronic Health Record (EHR)

Electronic Health Record is an emerging concept that can be described a standard way of gathering of all information about a patient or group of people electronically [11]. It can also be regarded as an electronic copy of information that can be distributed to all health care organization after necessary authentication. This sharing of information can be achieving by means of return based information systems interconnected by hardware infrastructures. The data transmitted may include statistical data, status of immunization, results of laboratory tests, and history of medical status and other relevant information about a patient. There should be the usage of the

acronyms EHR, EMR and EPR interchangeably. EMR is an acronym for electronic medical record, which is referred to as the record of patients in the hospitals or any other clinically based environment, that could be a source of data for the HER [12] [15]. EHR is for an institution or a regularly body which may include hospitals ethnics, an integrated information system network to allow access to medical records of patients.

2.2 Capabilities EHR in Resolving Health disparities

There are much notable potential that patients and healthcare professionals can adopt in utilizing technology to manage their health and other healthcare services. Some health regulatory bodies such as centers medicine and medical services emphasizing the need for health care services to go beyond face to face contacts, but it should adopt the use of information technology related tools to increase the access of patients to information and treatments especially in the managing of illnesses that are chronic in nature [2] [19] [20]. Conventionally, the focus had been on the role of personal patients would be allowed access to their health information. The main difference between the EHR and the PHR is that patients do not have the accessibility or capability to control the EHR or EMR (Electronic Medical Record) [20].

In a survey conducted by the California healthcare foundation, 7% of respondent used PHR [24], which implied the limitations of the adoption of the PHR usage was 11%, while was higher in the West and 15% in California. Majority of the users (64%) responded thus its usage helped them to ascertain the accuracy of their health information and approximately 50% said it helped in sending mail to their health providers and for online renewal of their prescriptions [24]. Moreover, over 50% of the users of

PHR said it helped to possess the knowledge of their health status and their doctors care for them. PHR users were younger, very literate and highly paid individuals, but the less educated whose income were lower and with chronic ailments derived their values with continuous consultation with healthcare professionals in the cause management of their health [24].

In another study of enrollees of Kaiser Permanent, the enrollees observed racism and ethnic disparities among those registered for the PHR. The data distributes those registered is as follows: African Americans (30.1%); whites (41.7%). Normally, those that have access to internet and of higher educational attainment would likely be higher in number. Nevertheless, the disparities in education, internet access and income were not accountable by race when observed in the disparities for the PAR registration [20].

The adoption rule of the utilization for the tools of health IT by which patients and healthcare provides may not provide the accurate data required. Despite this fact, there are some evidences that some of these patients and health provides are accessing health information systems developed by other organs whose core competence is not the health care. According to [17], about 160 million of American citizens have utilized health-based tools online. In view of the evidence, an average American obtain information from online resources in the diagnosing and treatment of various ailments, implying that the internet-based resource is the most accessible health information resource [3] [17].

The collection of the various tools used for this purpose is referred to as the consumer health informatics the (CHI) [4] [6] [5] [8] [7] [13] [10]. Despite the fact that these available tools are not distinguished at the moment, 33.3% of

the users confirmed positively to the value of information accessed through this resource, and reliable facts abound that the tools have helped in the curing of some ailments in the patients [10].

There is no evidence yet on the assessment on the use of CHI among on the patient's minority (ethnic and racial) nationally. Nevertheless, there is some level of disparity in the digital usage of the CHI tools. Within the period 2000 to 2010, the number of use of the internet among the blacks and Latinos is almost twice the original value, from 11% to 21%. Within the same period, there was less of African American that access the internet. In the same way, the African Americans are behind the whites in the use of the broadband links at home and also less in number in the acquisition of desktop PCs (African American – 51%, whites- 65%) [22]. There is a measure of identity in the use of broad band based internet among the Latinos (US-born) and the whites, while the Latinos who are foreign- born do not have the same usage of the facility with their US-born counterparts. (US-born – 81%; Foreign-born -51%) [16].

Lastly, the emergency of the social media can be seen as a powerful resource in the health care sector. With the development of Web 2.0 in 2004, there are positive features that help in the finality of both the consumer and the application [18]. With web 1.0, there was a one way of communication of resources on the internet web 2.0 has the capability of permitting the user to include the content on the WEB, thereby enhancing sharing capability and collaboration [18]. Therefore, social networking is used in the description of the application program and tools in Web 2.0.

Potentials abound in the usage of the social media in solving the disparities in the health care when it is properly examined by race. Ministry of the

Americans are higher users of the mobile devices in the accessing of internet a research study conducted by Pow research center, “Nearly two-thirds of African-Americans (64 percent) and Latinos (63 percent) are wireless internet users, and minority Americans are significantly more likely to own a cell phone than their white counterparts (87 percent of blacks and Hispanics own a cell phone, compared with 80 percent of whites). Additionally, black and Latino cell phone owners take advantage of a much wider array of their phones’ data functions compared to white cell phone owners” [23]. The health care sector has witnessed the entrance of the social media in different aspects. There is the need to understand that the demands of consumers in the health sector by entrepreneurs can lead to aggressive business creativity [21]. Online- based patient sites or groups are evolving very rapidly in the social networking. There are many hospitals and medical center of academic institutions that are utilizing social media with over 300 channels of you tube and twitter ales which can be viewed online. According to [21], there is the irrigation of notable, hospitals from the use of experiments to specific utilization of social media in the recruitment of patients.

2.3 Health Information Technology (HIT) & Its Impacts

HIT is the interchange of information on health in an electronically-based environment [25]. The extensive usage of HIT in the health sector would enhance the class of care, prevention of medically-based errors, and reduction of costs, improve efficiency in administration, reduction of paper-based work, and enlarge the access of the people to healthcare that is affordable. There is also the need to ensure the privacy and protection of all the electronic data since

the transmission of this information is carried out electronically.

The use of HIT in the management of an individual’s health information is a pertinent aspect of the dynamicity in the healthcare system. With HIT, the physician could manage the health of the patient by improved means of communication between the two of them. The uses of computers with other peripherals make it easier for the doctors, the patients and the providers of health in the storage, sharing, and accessing of individual’s health information. Therefore, the use of computers in this manner can be regarded as HIT.

The benefits of HIT include: reduction of paperwork by the elimination of handwritten of data on patients; reduction of unnecessary medical-based errors because information can now be transmitted electronically; reduction of costs incurred on healthcare through the decrease of repeated laboratory tests being requested from different doctors and the elimination of space and time in filing of the physical medical records; and improvement of quality healthcare and the assurance of the accuracy of all medical information being accessed by the healthcare providers. Despite the fact that HIT has numerable uses, there are 3 types of HIT that may be affected as the development continues. They are personal health records, electronic health records, and electronic prescription.

3.0 Challenges to Implementing EHR among the Minority

3.1 Notable hindrances to e-health implementation

It is an established fact that there are disparities while adopting and utilizing the varieties in health information technology. For better understanding of the disparities, the possible barriers or challenges to the adoption and utilization

of the HIT need to be carefully considered from different viewpoints: 1) the perspective of the healthcare system and the solution developers; 2) the patients, household and the health-carers; 3) the effect of technology; and 4) the environment where there is the usage of technology and the delivery and reception of care. In view of these, any challenge in any of these areas could affect the adoption of the health IT, its utilization and finally the outcome. Furthermore, if the challenge is of a natural phenomenon, for example, a particular group of people may benefit more than the other technological development.

The way of interacting of electronic gadgets by human beings in an environment that is challenging is an area of human based factor engineering that needs to be noted. The relationship of these interactions with people, the jobs to be done, and the environment with the technologies utilized for this purpose which are totally different for the minority patient. In order to cut health care costs, there is the deployment of many electronic gadgets into homes today, implying the increase of human-based environmental issues.

There are notable barriers that would make the physicians not to adopt the e-health implementation. They include: negative attitudes of the physicians towards technology and the information system to be deployed; the negative effect of HIT on the workflow in the clinic and lack of competent technical staff to help the office staff and doctors; lack of communication between the electronic health record and the HIT systems; and lack of absolute discussion whereby the providers can share their ideas, thoughts, information by writing or by speech, or through their professional medium, with the use of the social media.

Among the underserved population, there are notable barriers to the adoption

of the e-health implementation. These include: the need to understand the positive effect of HIT for the patients and clinicians; the perception that the implementation could create additional work for the patients thereby making it cumbersome to accommodate this new idea of HIT; lack of confidence in the electronic gadgets to be deployed, technical challenges, mix-up in the educational materials or contents, limitation in accessing IT-based devices, anxiety in the use of the technology. In case of minority patients, the barrier is the additional responsibility of caring for the family. Other barriers include poor knowledge of computer usage and the irrelevance of culture, lack of privacy and confidence in those that would handle the information supplied.

3.2 E-health solutions for Healthcare Disparities

HIT may impact the determinant of the disparities of healthcare service providers. The aim of the provision of health IT-based tools for the care of the patients is to make available the information in a simplified way that the patients would embrace the technology. When this is achieved, the patients would believe in the accuracy of their health information instead of the manual manner in which the medical records have been kept. Moreover, once the patient's information is found to be accurate in the electronic health record (EHR), there would be an increase in usage of the information, and there would also be reliance on the data. When this is consistently done, the resultant effect of the promotion of this reliable information would be admired and disparities among healthcare providers would be minimized.

The EHR would provide the doctors with relevant information on various options available for treatments, with an aim of the provision of clinical support,

thereby making the clinician to offer a classical treatment. This tool could also help in the provision of an effective decision-making support in the generation of feedbacks on the performance of the clinicians by generating reminders, standardized reports, or clinical assessments. The reminders and the standardized reports would provide feedbacks to the health-providers on the standard or classic of healthcare provided to such a patient. When specific indicators on disparities are included in the report, this kind of information could reduce any form of disparity by the exposition of unacceptable practices in the clinic that is not of the standard expected and this would help in noting the performance of such provider over patients serviced. When such information is made available to the providers, the identified areas of disparities would be handled by the providers, thereby attending to areas of improvement.

There is the possibility of the synergy between the HIT and the physician-patients connectivity. Tools to be used for the connectivity are email, electronic means of consultation (known as e-consultation), electronic prescription (known as e-prescription) and EHR systems in enabling the providers in connecting with their fellow professionals. With these tools, there would be the facilitation in reducing disparities in healthcare. Moreover, there would also be the provision of standby access to the needed expertise in facilitating improved diagnosis and curative decisions. Other tools that could reduce the healthcare disparities are telemedicine, remotely-controlled monitors and sensing devices, patient's email, and the use of Internet-based social media, in connecting healthcare providers and systems to the patients and health-cares. Furthermore, the use of these HIT tools would reduce disparities by

providing care, educating them, or supporting the disparity people and assisting them to have access to care that is not available. If these tools are not evenly utilized across different population, disparity is evitable.

Ensuring the increase way of regular checking of the pertinent parameters in the clinic among the minority (racial and ethnicity) patients would enhance the connectivity between the providers and the patients, which could impact disparities in healthcare. Due to the poor self-management of some patients in failing in the monitoring of their health status, technology-based devices such as patient-sensor can be remotely-enabled to monitor and deliver results to a compatible device or to an electronic health record (EHR). There could be the facilitation of enhanced management of clinical and disease-control case, which would result in fewer cases of complication, and ultimately reducing disparities. The above-stated IT tools could help in the facilitation of stabilized relationships between the providers and the patients by enabling the patients to have undistorted means of communication, access to care, or ensuring the provider relationship is maintained. Moreover, these tools would also help in the promotion of care for the patients, facilitation of a shared form of decision-making, and an enhanced patients' centrally-controlled form of care, which sum up to good quality of care.

Finally, the use of HIT tools offers a futuristic promise in the support of the behaviour of the patient's health. When the social assistance and means of interaction are enhanced, the usage of these tools would increase the engagement of the patients, especially among the population in the minority whose use of mobile devices as a means

of communication and social media are higher than the population of the white.

4.0 Conclusion

There is a great potential and futuristic promise in HIT usage among the minority population (in racial and ethnicity). Yet, there is a dire need to overcome all the challenges (technically, practically, and humanly). To evaluate the success or the failure, there is need to conduct a research on the surveillance and observance of progress made nationally. Moreover, due to the different forms of technologies, user-types, and the environment for the deployment of such information system, it would be a great challenge to collate the accurate information on the adoption and the use of such systems. With the effective usage of the HIT by the providers, there is the possibility to monitor its utilization by the providers among other participating health

providers. In addition, with the usage by the patients to access, manage, and use of their health information, there could be the need of developing a meaningfully patient-use form of criteria.

Sequel to these developments and usage of HIT, there could be the need for certification of all the hardware and software for standardization and consistency in its usage among vulnerable group of people. Once these challenges are handled, there could be the need to develop patient-provider oriented-based HIT tools and other devices. As at now, most of these tools are designed and developed not in the healthcare settings. Therefore, as regards the potentials of HIT in handling the disparities in the healthcare, is whether there would be the acceptance of the evolving of HIT opportunities so as to achieve the aim of a better system of healthcare and a society that is healthy.

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