

In Which Ways Information Technology Could Be Useful In the Management of Hospitals and How It Can Contribute To the Reduction of Economic Costs in the Health Sector

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Introduction

Hospitals began investing in health IT during the 1960s and was initially used to support billing and financial services [1]. Efficiency, efficacy, effectiveness, accuracy, reliability, etc. are some key elements in managing the health of individuals, disease surveillance, preventive care and healthcare in general. The adoption of Information Technology in healthcare management has brought significant transformation in the healthcare industry. Electronic health system (E-Health) has become the game changer in the management of health with enormous benefits to both patients and healthcare workers. E-Health is defined by WHO as the cost-effective and secure use of information and communications technologies in support of health and health-related fields, including healthcare services, health surveillance, health literature, and health education, knowledge and research. In this light, many countries are increasing investments in this sector as they see it as more beneficial to the previous system which had many deficiencies. US investment in health information technology (IT) has risen substantially since 2008 while the focus on the national deficit and rising healthcare costs has sharpened [2].

The Government of Ghana launched the national E-health strategy in July 2010 stating that E-health holds a lot of promise for making the big strides urgently needed for improving the health of our communities, especially those living in rural areas. (MOH Ghana). Many health facilities in Ghana currently use the electronic system in delivering services to clients (out-patient consultation, in-patient care, laboratory, pharmacy, billing, appointment booking, etc.), generating insurance claims and administrative activities such as procurements, human resource management, staff attendance, accounting, internal communications, etc.

The emergence of IT in health has brought enormous benefits to healthcare management ranging from delivering reliable, faster and accurate diagnosis, patient monitoring to reduction of medical

errors, reducing patients waiting times, quality care and reducing the general economic health cost. Health Information Technology if properly implemented and widely adopted, would save money and significantly improve healthcare quality [3].

Aims

This essay aims at exploring the usefulness of information technology (IT) in hospital management and its contribution to the reduction of economic costs in the health sector.

Objectives

How can IT be useful in Hospital management?

How can IT reduce general economic cost in the health sector?

Methodology

The secondary research methodology was employed with data from journals, scientific papers digital libraries and books. Websites of national ministries of health, surveys and analysis of other researchers were beneficial in writing this essay.

Chapter One

Usefulness of IT in the Management of Hospitals

Managing a hospital/healthcare facility is a complex and require a lot of tact, times, efficiency and effectiveness. A hospital has many departments such as medical, nursing, laboratory, radiology, administration etc. which are all managed by the hospital management team. Hospital administration is faced with daily challenge of storing medical records of clients, maintain medical equipment and workers, ensuring patients' needs are met, etc., a task that was very difficult to execute in the old system of paper work which came with various problems until hospitals started investing in IT in the 1960s. IT in health strengthens client's security, data protection, reduces medical errors, reduces administrative and operation cost and improves quality of care. Healthcare information technology (HIT) has been defined as "the application of information

processing involving both computer hardware and software that deals with the storage, retrieval, sharing, and use of health care information, data, and knowledge for communication and decision making” [4].

Data Storage and Retrieval

Storage and retrieval of data has been made easy with IT. One of the biggest headaches of hospital management in the paper-based system was how best to store and retrieve client’s data, dealing with missing patients’ folders, missing laboratory results and the growing need of more room space to store such data especially in Ghana. Administrative, financing, departmental reports, etc. were piled up at offices making it take much time to search for a particular information. The introduction of electronic patients’ record and administrative software has made it easy to store and retrieve health data with ease within seconds. This has reduced the burden of missing patient information, retrieval of previous administrative reports, etc. Studies in primary care in the USA have found 13.6% of patient consultations have missing clinical information, with this adversely affecting care in about half of cases, and in Australia 1.8% of medical errors were found to be due to the unavailability of clinical information [5].

Data Security and Patient Privacy

Information Technology has reduced leakage of patients’ sensitive information and other important data to others. Data security is very important in health as data in wrong hands can cause havoc. With IT, hospital managers determine who has access to a particular data and can block an individual’s access if found to be misusing data. This increases patients trust, reduces leakages of sensitive clinical and administrative information and protects the image of the hospital.

Revenue Mobilization and Management

Information Technology affords hospital managements the ease to know the facility’s daily income and expenditure, financial losses, etc. Hospital management software come with inbuilt billing system where a client is automatically billed for service rendered and a report system where accountants and managers can access the cash in-flow with just a click on their computer. It has eradicated billing errors, made financial reporting easier and faster which in turns gives a clear direction on what/where the hospital needs to invest more money and plan on how to reduce financial losses.

Monitoring and Administrative Decisions

Information Technology helps hospital management to monitor staff activities (reporting times, productivity, etc.), patient management especially in-patients and makes administrative work much easier. Effective managers always prefer efficiency, accuracy and make decisions based on data and IT can be very useful in gathering relevant data to aid in decision making. It makes it possible for hospital managers to known the finances, clinic attendance, client satisfaction based on surveys and helps analyze the data making

decision making much easier. After decisions are made, IT helps management to communicate decisions in coded language to staff easily.

Chapter Two

It Contribute To the Reduction of Economic Costs in the Health Sector

Health economics is the branch of economics which is concerned theoretically and practically with the health sector and related subjects such as e.g., the market for medicine and medico-technical equipment [6]. Many factors such as longer in-patient stay in the hospital, rise in cost of pharmaceutical, laboratory and other products contribute to the rising cost of healthcare around the world. Many people especially the poor are unable to access the best care due to cost even with the introduction of various national health insurance. By 2008, the USA annual per capita healthcare spending had risen to \$7681, with a total for the nation of over \$2.3 trillion, three times the 1990 estimate with numerous causes of high spending, including the fee-for-service payment system, the lack of a national single-payer system, the continued embrace of high technology testing and treatment modalities, and the well-documented geographic disparities in age and income-adjusted utilization and expenditures, etc [7]. Although the cost of installing information technology in a health facility is huge, it can be the game changer in the reduction of economic cost in healthcare.

Reductions on Patients Bills

Evidently, health IT systems has impact on quality and safety as it integrates relevant automated decision-making and knowledge acquisition tools for practitioners, supports medical, nursing, prescription and other clinical errors reduction. In Ghana, the issue of patients repeating laboratory investigations due to missing results and records, repeated visits to physician due to poorly managed condition and poor in-patient monitoring and error which increases the patient’s stay on the ward which in turns increases patients bills, insurance bills, etc. is rampant in many health facilities using the paper-based system. With IT, previous data of patient can easily be retrieved, enhanced patient monitoring is assured with reduced frequency of clinical errors thereby reducing out-patients visits due to poor quality of care, reducing length of hospitalization and curbing misuse of drugs especially antibiotics thereby positively impacting on economic cost of healthcare.

Reduction in Cost of Monitoring

Introduction of wearable health technologies reduced the cost of chronic disease patients on frequent hospital visits with its high cost of service as their physicians can monitor their condition at any location and with telemedicine, these patients can be given instructions on what to do at any point in time. On the national scale, the cost of general health monitoring especially in public health can be reduced significantly with IT as managers can sit at their office and receive public health data on spread of infections like covid-19, recoveries and vaccine uptakes and also monitor activi-

ties of staff/professionals across the nation without huge spending on travels.

Administrative Cost

The paper-based health system has huge financial burden of health-care management. The daily cost of purchasing attendance books, records books, patients' folders /files, and the amount needed in processing and analyzing health data can decrease with IT. Health IT software reduces the resource needed in collecting, analyzing data and transporting it to for decision-making. This increase effectiveness and efficiency as data can be sent to authorities across the globe in a flash without long hours of costly travels to present such data. Data on covid-19 has been easily shared across the globe due to IT with less cost.

Conclusion

This essay explored ways information technology is useful in hospital management and its contribution to the reduction of economic costs in the health sector. The adoption of Information Technology in healthcare management has brought significant transformation in the healthcare industry. Electronic health system (E-Health) has since been the game changer in the management of health with its numerous benefits to both patients and healthcare workers.

It found that IT can be useful in many ways in hospital management such as strengthening data protection thereby reducing misuse and leakage of confidential information, reduces medical errors, reduces administrative and operation cost and improves quality of care. IT makes data storage and retrieval easy and faster putting an end to missing reports and relevant information [8-13].

Again, revenue mobilization and management at the hospital has been made easy with automated billing thereby reducing overbilling, underbilling and wrongful payments. It also helps managers to monitor hospital's finances and decide the aspects of the hospital that needs more investment. Also, IT reduces the burden of hospital management in terms of monitoring, data management and decision making.

IT gives hospital management the needed efficiency, efficacy, effectiveness, accuracy, reliability, etc. which are some key elements in management, helping improve quality of care, improve the patient safety and satisfaction, supports professional to be updated to the latest trends of disease management and technology.

Furthermore, implementing IT in health is expensive, its positive economic costs reduction is enormous and cannot be overlooked although there are few data and research concerning such. The essay found that IT can curb certain factors that increase healthcare cost such as longer in-patient stay in the hospital, rise in laboratory and other products cost, etc. thereby reducing patients bills. Also, IT use reduces administrative cost as IT software reduces cost by processing and transporting data faster and helping in decision-making. Again, the introduction of wearable health technol-

ogies also can reduce the cost of chronic disease patients. Also the cost of general health monitoring especially in public health can be reduce significantly as needed data can be sent via the internet without costly travels. IT again can reduce clinical errors, thereby reducing in-patient length of stay and repeated out-patient visits which positively affects cost.

Finally, I recommend more research into the relationship between IT and reduction in health economic cost so as to strengthen the promotion of the adoption of Health Information Technology.

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