



ASSINGMENT # 2

Student ID: 2025166681

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Electronic Medical Record and Electronic Health Record have potential to improve quality of care (introduction, scenario in develop countries and developing countries, opportunities, challenges)

I. INTRODUCTION

Traditionally, health records were written on manual registers in separate files and stored in racks, with just a copy available. The personal computers become more popular in the late 1980s and early 1990s with the introduction of local area networks, powerful, affordable, and compact hardware, and the Internet, which provided easier access to medical information and pioneered the use of web-based health data recording (1). The record-keeping procedure has altered drastically in the era of computer technology. An Electronic Medical Record (EMR) includes information about patients' health history that created, managed, and maintained by single health care organization. On the flip side, an Electronic Health Records (EHRs) are simply digital versions of paper records (2). Patients' information is being used by health care practitioners during their hospitalization, over time, when referring to another facility, and across care settings by collecting hospital health data (3). When physicians prescribe current medications and specific illnesses such as high blood pressure or low blood sugar, an EHR may play a role in public health outcomes by allowing clinicians to view patients' data more effectively.

The physical condition and location of medical records kept in manual registers become increasingly significant. There are numerous types of costs connected with manual patient records. The key limitations of manual health records are duplication of the record, assembling, retrieving, distributing, storage, mishandling, handwriting, searching, filling time, accessibility, and paper longevity, which can result in inadequate and inaccurate healthcare data collection. Paper records are fragile and do not persist indefinitely in terms of quality. Patients updated, accurate, and complete information at the point of care (4), enabling quick access to patient records and improving efficient care, and securely sharing electronic information with patients and other clinicians, the EMR/EHR contributes to higher quality and safer patient care.

Every health ministry in the world, including South Asian countries like Singapore and Hong Kong, has developed strategies to use electronic platforms for patients' information management. Bangladesh's government has previously declared ICT as one of its strategic industries. According to the Directorate General of Health Services (DGHS) most recent reports, there are roughly 678 public hospitals, 482 Upazila and Union level hospitals, and 196 secondary and tertiary level hospitals. There are also 2,983 private hospitals and 5,220 private diagnostic clinics available in Bangladeshis (5). The electronic health record was successfully implemented in November 2015, and it was first used as an experiment in the Kaliganj Upazila under Gazipur district in March 2016 and the MIS department of DGHS has been rolling-out this platform (OpenMRS/Bhamni) in 30 more district level tertiary hospitals. Many of the leading private health facilities have been automated their entire work with an integrated hospital solution.

II. SCENARIO IN DEVELOPED COUNTRIES

The developed countries, such as the United States (69%), Australia (92%), Norway (98%), the Netherlands (98%), the United Kingdom (97%), and New Zealand (97%) have growing and robust healthcare infrastructures that receive significant funding and support from their governments and they believe it can help to improve healthcare quality and their healthcare industries (6). These countries are linked to both the most expensive (the United States) and the least expensive (Singapore) healthcare systems (7).

III. SCENARIO IN DEVELOPING COUNTRIES

Good health is vital not only for individuals but also for governments because it plays a key role in long-term economic development and resource efficiency (8). Unlike affluent countries, developing countries have been attempting to comply with electronic platforms in healthcare settings over the past few years. Many developing countries have difficulties because of a lack of adequate healthcare facilities, civil wars, epidemics, and natural disasters.

Advanced machinery, specialized doctors, nurses, equipment, access, systems and processes, information technology (IT), sustainability initiatives, and employees are all part of the healthcare infrastructure. Despite the introduction of automated systems for clinical care, several challenges

must be overcome, including hardware and software compatibility and standardization, competent manpower, a lack of quality control, and improved privacy, confidentiality, and security in developing countries.

Examples: For the last one decade, Bangladesh has made a remarkable progress in health systems development. Though the healthcare settings and other associated factors are very much complicated for introducing any health systems but interestingly with strong leadership of the Ministry of Health and Family Welfare, it has possible to implement about 114 different web, desktop and mobile applications across the country, benefiting everyone from the community to tertiary health facilities.

IV. OPPORTUNITY

The healthcare system and consumers of developed countries are getting patients satisfaction whereas in developing countries, internet facilities and information technologists are gradually improving hence it is the perfect time to introduce electronic medical and health records platforms. The in-country software developers can play an important role in this area to optimize cost and time. Finally, clinicians and patients will be able to access data via web and mobile platforms, while health managers will benefit from decision support for drug ordering, dispensing, improving legibility of clinical notes, reminders & notifications, warning abnormal laboratory results, reports monitoring & budgeting, and clinical research.

V. CHALLENGES

Language, cost, culture, security, confidentiality, dependability, low-cost technology, interoperability, data migration, maintenance, staff opposition, capacity development, attitudinal & organizational constraints are just a few of the hurdles that must be addressed to deploy EMR/EHR. Developing countries, particularly governments and public health facilities, are challenging to deploy EMR/HER due to a lack of sufficient funds, greater repair costs, and long-term maintenance plans. In Bangladesh's public hospitals, there are several challenges associated with implementing EHR systems. There is a large patient load, yet there are insufficient human resources and information technology resources. On the other hand, some people believe the

system is ineffective. People in rural areas lack understanding and trust when it comes to employing technological methods. Aside from these issues, hospitals are also hesitant to implement this strategy because it will necessitate human and ICT resources.

VI. CONCLUSION

Developed countries have already adapted and are reaping considerable benefits, whereas low-middle-income countries are attempting to change both in public and private health care. The overall obstacles can be mitigated with a strategic plan, partnership, strong leadership, timeliness, enough training, and expert involvement.

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