

# Portable Digital Personal Health Record: To Bridge the Digital gap in Medical Information Storage of Individuals with Personal Health Records in Flash Drives

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## Abstract

The burgeoning awareness for the need for an optimum, easy accessible medical record in the past several years has resulted in upsurge in activity around the early adoption of electronic medical records among physicians and consumers. Several studies document that medical errors could be significantly reduced by utilization of digital medical records which further reinforces their necessity in modern health care industry. While digital records could provide significant benefits to the consumers, yet there is no standardized or user friendly solution in the market available today for the wide adoption of this technology. This review briefly focuses of some of the benefits of portable digital health record and the need for development of novel portable digital personal health records.

## CONFLICT OF INTEREST

Rahul Shetty is the founder of Mezocore Technologies Inc, an early stage biomedical venture. They are planning to develop electronic medical records solutions software in near future.

## INTRODUCTION

In health care industry unlike the other industries around the world, information technologies are not widely adopted. Today in medical field there is burgeoning growth of knowledge and also patient data. The huge quantity of information that a physician needs to handle every day makes their task extremely difficult. Added to these issues, many studies state that medical mistakes in hospital care settings could be prevented by optimum utilization of innovative medical technologies like digital personal health record (DPHR).

In health care industry, the adoption of information technology (IT) is around 5%. Unlike the local grocery store or McDonald restaurant which utilizes around 40% of IT. The resulting huge gap has increased the number of medical errors, which effects around 100,000 patients annually in US as was shown in the landmark study by Institute of Medicine in 1999 [1]. But, today medical errors have not diminished. It not only affects the patients but also has an increased financial impact on health care industry.

When we compare this to the aviation industry, it is akin to a small mid sized aircraft crashing down every day.

So how can technologies aid health care industry? Technologies have always played a significant role in patient-physician relationship. Previous innovations in communications like telephone and pager have significantly changed the way certain interactions between physicians and patients are performed and also have increased the ease of accessibility to health care providers' service. With the growth of computer technology new means of interaction and communication could be possible, but the lacuna in management of medical database has still persisted. Since, many health care records are not yet fully compatible with electronic medical records. Physicians continue to utilize the paper based records in current health care setting resulting in rise medical errors, which has not diminished since the last few years.

There is a solution for this ever growing problem, early introduction of a computerized portable personal record, which enables individuals to carry around their medical records in an offline stored digital format. These can offer benefits of timely and quick access to vital medical information. The definition of electronic record for individuals is according to US based The Markle Foundation's Connecting for Health collaborative, a public-

private endeavor “An electronic application through which individuals can access, manage and share their health information, and that of others for whom they are authorized, in a private, secure, and confidential environment.”<sup>[2]</sup>. There are different methods of storage and retrieval of medical information of an individual. The complexity of these ranges from online based systems to offline storage methods. Both offer significant advantages and also have some share of disadvantages.

## **PORTABLE DIGITAL PERSONAL HEALTH RECORD**

Despite the tremendous growth of internet over the past several years and also the ease of accessibility of internet services around the world today, there is always the risk of the network being not able to access the patient's records during critical times. Portable systems of carrying the records are an option as they offer rapid and easy method of accessing vital health information. The need for portable system of record is especially heightened during emergency medical situations. During these circumstances, the patient doesn't have the time or the ability to call a phone number and wait for a fax to retrieve their vital health information. There is an assumption that once the patient has a small portable device with their emergency information stored in them; personal vital information can be rapidly accessed from their storage device using any standard or portable computer with any operating system. The burgeoning growth of computer hardware industry has also decreased the cost price of the storage devices while increasing the memory capacity. These factors will make a broader segment of the consumer population prefer to have their complete medical record with them at all times in near future.

It is also of importance to note that the health information should be stored in a secure environment preferably with a pass word encrypted storage drive. An optimal individual record should carry within it, emergency information of an individual along with relevant demographic information in addition to all the medical and surgical history. A DPPR should contain the health care information about an entire individual's lifetime and should not only provide support to continuity of care, education but also ensure confidentiality at all times. This should be able to provide quality health care delivery to the individual. The portable device should have the health care records in a quick accessible, secure and highly user friendly format.

Computers are now widely used in the market, and many adult individuals have a basic working knowledge of a computer function. USB or Universal serial bus is the standard feature in many current computers. The training period for learning new software could be considerably decreased by using easy to use templates which are universally accessible by all the computers regardless of their operating software or processor speed. Individuals can store in their DPHR storage devices not only their illness information but also can maintain a wellness health record over a period of time.

Potential benefits of digital health records to payers and purchasers of health care include lower chronic disease management costs, lower Medication costs and lower wellness program costs <sup>[3]</sup>. The greatest area of benefit relates to the chronic disease management, where costs are typically high <sup>[4]</sup>.

## **CONCLUSION**

The electronic healthcare record will be a necessary tool supporting the individual centered shared care in the near future. There are many hurdles to overcome before it can be a standard feature. Security and common standard are some of the key issues. When these are settled it can offer significant benefits to long term patient care in reducing medical errors and also offering significant financial saving benefits to health care industry.

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