MEDINFO 2007
HISA Ltd Australia
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Data Protection in Shared Health Records: Requirements and Challenges

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Abstract:

This short paper presents the evolution of electronic health records and focuses on their main characteristics and requirements. Furthermore, it also examines the conflicting goals of health information availability and data protection for shared health record systems.

Keywords:

shared health records, data protection, privacy and confidentiality

Introduction

One of the very first uses of computers in health care was for administrative and financial purposes [1]. Healthcare professionals have tried to find systems that would provide easy and intuitive access to the information which they need during consultations with their patients [2]. The advent of computers and computer networks offered us the capability to access medical information from anywhere and anytime[3,4].

The implementation of shared health records demands a satisfactory level of security. This is invariably achieved through applying and enforcing strict, and often quite complicated, rules and procedures in the access process, which perplex and confuse users. The current challenge is to implement a shared health record system, which is easy and secure to use, and satisfies all stakeholders, such as patients, health professionals, healthcare providers, and other groups in terms of legal or financial requirements.

Electronic health records characteristics and requirements

The new communication technologies offer clinicians creative ways to interact with their patients and to provide higher quality of care [2]. The Internet evolves and supports broadband communications, it becomes the technology of choice for linking medical experts with other clinicians and patients at a distance [5,6] Indeed today, distribution of biomedical information through the internet is increasingly commonplace and accepted [7].

Successful implementation of shared health records will have to meet the users' needs for acceptable levels security and privacy, and also to address some important legal issues.

The basic requirements of shared health records are:

- Comprehensiveness
- Confidentiality
- Accessibility
- Liability
- Authentication
- Flexibility
- Permission
- Accessibility in emergency cases
- Maintaining Integrity of the health record

There are some legal issues regarding health records such as:

- Jurisdiction
- Legally valid agreements
- Legal implications of shared practice of medicine
- Patient's right to review and release their records

Current and future challenges of data protection in shared health records

Some patients and doctors have expressed concerns about the use of the new technology in shared health care record services. Most of these concerns are related to data protection and confidentiality issues. Also some doctors are afraid that shared care record service will damage confidentiality.

Some issues should be considered while moving from a paper-based record system to a computer-based one, such as the needed time of transmission, resources, management and administration tolls and staff, and basic technology infrastructure. These factors often relate to technical challenges. Another risk is system failures. In case of system failure, stored information may be unavailable at the time of need. In this case, paper records could serve as backup until the computer system becomes available again [2, 8]. This matter of availability might be one of the major problems of security.

People will always try to destroy security systems, no matter how sophisticated they are.

Some people will find ways to get secure information by exploiting human weakness to bring pressure to bear on someone with legitimate access to health information. [8].

The concept of security is intrinsically correlated with other aspects of EHR, including legal, technical, social, political and financial. The nature of these relationships between security and other issues depends on the specific user of the electronic patient records.

Conclusion

In every generation of health records, their implementation has faced serious challenges. The most recent phase of EHR, based on internet technology, presents us with a number of critical challenges related to security and privacy.

The concept of information security, as a whole, comprises the three aspects of confidentiality, integrity and availability. The advanced technologies needed for implementing secure systems almost always make the use of the system more complex for the users. This complexity can reduce the benefits of using new technology and limit its advantages. The grand challenge for the future will be to provide a secure and at the same time user friendly electronic health record system.

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