Computing for Human Services

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Authentication Enhancement for Medical Data Centers

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28.1. Introduction

A data center is a facility used for housing a large amount of electronic equipment, typically computers and communications’ equipments [1]. Healthcare context has undergone profound changes with the advent of the information age. Today’s healthcare professionals are information managers who collect and analyze data from myriad sources in caring for their patients. Computerization has also helped facilitate the measurement of the quality and costs of care. Not only it is simple to graph and chart patient data, but it is also easy to analyze clinical outcomes [2]. Computerization and electronic transmission of medical records facilitates the flow of medical information, but it also raises many questions and concerns about security and protection of patient privacy. Health care information privacy rights have been protected through the physician’s obligation of confidentiality. Today, new computer applications and IT enable increasing amounts of patient information to be readily accessible for physicians and other health care providers. If access to the data is granted, then this technology will also facilitate access to private patient information by utilization and quality reviewers, third-party payers, clinical and epidemiological researchers, but also to drug marketers, criminal investigators, and others [3]. Most health care organizations are now actively interested in implementing the security and privacy measures (HIPAA regulations) and are wondering how to get started with this complex, long-lived, and expensive task. HIPAA includes many regulations and one of these regulations is about Authentication. Biometrics is a promising technology that is being touted as the solution to these kinds of problems. More and more businesses and corporations are recognizing the efficiency of such an application. In hospital settings for instance, there is more and more interest in using biometrics for user authentication to assure the confidentiality and privacy of patient information. A single sing-on is a common way to access systems or data within the system. In other hand, not all medical data has the same level of importance and sensitivity. Therefore, not all data requires the same level of security. An integrated and multi-level authentication system is proposed in this study for medical data centers.