Impact of Data Privacy and Confidentiality on Developing Telemedicine Applications: A Review Participates Opinion and Expert Concerns

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Abstract: Telemedicine refers to any health care delivery application using an active media such as internet, mobile platforms, or satellites to communicate the parties. Telemedicine can be as simple as patient-doctors phone call, or as complex as the remote surgery (tele surgery). Telemedicine applications required highly secured systems. In this study we will review the impact of data privacy and confidentiality on developing telemedicine applications. Moreover, we will support this review by short survey on 130 participants to support the literature evidence.

Keywords: Telemedicine, patient records, privacy, e-health, m-health, security, health informatics

INTRODUCTION

Websites are now a major vehicle through which health care agencies deliver information to the public, also known as e-health. When mobile platform deliver the medical information it becomes m-health. Through Information Communication Technology (ICT), particularly the Internet, e-health and m-health can deliver public services in a much convenient, cost-effective and altogether different and better way. Realizing the potential benefits of ICT, health care delivery agencies began actively posting information on the websites and other communication tools. In ensuring the success of e-health initiative, a level of trust is required from all transactions such as patient-doctors, doctors-public within health delivery agencies and between agencies itself. The issue of trust involves two special concerns to any online service, these are privacy and security (Jun and Hua, 2010; Tooram and Rahmeh Sharan, 2006; Kim and et al., 2010). In the telemedicine applications privacy is refers as a protecting personal information by the health agencies that collects about individuals whereas, security is refers as protecting e-health sites from attack and misuse. While e-health is working in an open environment (internet), the issues of privacy and security are of great concerns especially to decision makers and designers of e-health systems (Alam et al., 2008; Chen et al., 2010; Minz et al., 2009). Government around the world has invested a huge amount of money and time to ensure the security of electronic transactions by constantly enhancing the information security infrastructure (Alam et al., 2010; Alam et al., 2010; Zaidan et al., 2010). But, unfortunately many security breaches over health website still exist and the continuing emergence of attack and misuse can affect users' trust and confidence towards the e-health services and hinder them from using e-health services. Thompson et al. (2011) made a study on document and describe online portrayals of potential patient privacy violations in the social networks. In particular, Facebook profiles of medical students and residents. They found that (49.8%) of all eligible students and residents had Facebook profiles. There were 12 cases of potential patient violations, in which residents and students are posted photographs of care they provided to the individuals. Jones et al. (2011) stated researchers whom are using forums, blogs and online groups-based, they need to make sure they are safe and need tools to make best use of the data. Though it is about time to develop a security system than can truly effective in protecting the e-health sites and efficient in protecting individuals personal information.

THE IMPACT OF SECURITY ON TELEMEDICINE APPLICATIONS

Recently, Researchers have paid direct attention to the area of telemedicine applications (Sawhney and Mariani, 2010). Telemedicine is a broad word for any