Security and Privacy Challenges for Healthcare: Minitrack Overview

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Abstract

From a patient standpoint, security and privacy in healthcare is expected. While the regulation is addressing the overarching issues of security and privacy in relation to one's personal health data, challenges in keeping up with technology development, implementing rules and regulations from various regions, and creating safeguard mechanism against cyberattacks are still persist. This minitrack serves as an outlet for concerns, recommendations, and progress reports for advances in relation to security and privacy in healthcare.

1. Introduction

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This year, in spite of the coronavirus that forces the conference to move online, we received seven submission, several of which are high quality. We accepted three for publication, but one has withdrawn after the first revise and resubmit notification. Therefore, in our minitrack this year, we present two studies: "Medical Internet of Things: A Survey of the "Current Threat and Vulnerability Landscape" by McGowan, Sittig, and Andel and The Travel of Privacy Standards and Regulations in Healthcare" by Anderson, Baskerville, and Kaul.

2. Medical Internet of Things: A Survey of the Current Threat and Vulnerability Landscape

Internet of Things has started to become adopted widely in several industries. In healthcare, medical Internet of Things (mIoT) utilization has started to yield positive results in patients' monitoring and early intervention. In addition to the challenge of implementing mIoT, the challenge of keeping the mIoT private secure presents a pressing issue. In this conference proceeding article, McGowan et al. surveyed the literature and provided a broad view of the vulnerability landscape in mIoT. There are three aspects the authors found: security issues, unpatched devices, and authentication.

The article raises an important point of balancing two intertwined aspects: the aspect of privacy and the aspect of seamless information flow. The article also informs researchers and practitioners that there are current a gap of policy to effectively guiding the adoption and the implementation of mIoT. For instance, there is currently no mechanism to evaluate the efficacy and data safety of medical implantable devices.

Finally, the authors notice there is not yet a recorded harm on a patient due to security lapse in mIoT, and warn against such a lax approach to security and privacy in the current mIoT adoption.

3. The Travel of Privacy Standards and Regulations in Healthcare

Anderson et al. discussed the implementation of HITECH Act, which revolves around creating Health Information Exchange (HIE) for ease and secure exchange of information, via various organizational policies across institutions. Using the translation theory, the authors delved into a longitudinal, qualitative study using an HIE called HealthEx. The authors provided a more nuanced finding in terms of how each idea are implemented through several hierarchy of localities.

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Localities may or may not pertaining to a geographic extent, as illustrated by the OECD and ONC localities. Rather, localities are the constructs that depict which entity has formed the regulations, and how it would affect the institutions that are included in that very localities. In conclusion, the enactment of any regulations in last mile are subjected to interpretation, and also might be different than the intended implementation when the regulations are created.

9. Conclusion

The challenge of preserving privacy and security in healthcare are always met with extra scrutiny. Much of the adoption and implementation of new technology are both back-looking and forward-looking, trying to anticipate and create mechanism for a safe and secure environment. No doubt the field is moving in a rapid space, and we hope to receive more groundbreaking, intriguing research that help propel the field forward.