

Telehealth: Where Technology Meets Healthcare**Farheen Ghani****IT 191-A01****May 26, 2019**

"By placing this statement on my webpage, I certify that I have read and understand the GMU Honor Code on <http://oai.gmu.edu/mason-honor-code/> and as stated, I as student member of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work. In addition, I have received permission from the copyright holder for any copyrighted material that is displayed on my site. This includes quoting extensive amounts of text, any material copied directly from a web page and graphics/pictures that are copyrighted. This project or subject material has not been used in another class by me or any other student. Finally, I certify that this site is not for commercial purposes, which is a violation of the George Mason Responsible Use of Computing (RUC) Policy posted on http://copyright.gmu.edu/?page_id=301 web site."

Introduction:

Over the past few years, dramatical growth in the field of technology has given rise to a new platform, Telehealth. As the world's healthcare needs are becoming overwhelmed and an increase in demand of physician productivity, Telehealth makes healthcare accessible over long distance. This cost-effective technology also provides a basis for professional health related education and public health administration. The aim of this paper is to describe the potential benefits that comes with telehealth innovations, to present some legal and ethical issues that may accompany this field and also to address security concerns and social problems related to it.

Potential benefits:

One of the main benefits of this modern innovation is its cost effectiveness. It makes it convenient for people who are unable to access healthcare due to lack of time, limited mobility or geographical considerations. It also sparks an educational domino effect across the globe as through these means of communications, researchers are able to conduct researches on a global level. Medical information and consultations are being delivered in a blink of an eye across wide geographical areas. Integrated system management systems provide patients with chronic diseases an efficient way to engage in consultations, patient education, health monitoring and follow ups (White 2001). For example, patients are now able to use resources such as specialized apps that enable retinal photo screening, blood glucose monitoring from the comfort of their homes.

Additionally, ICU telemedicine is another remarkable approach designed specifically to improve survival in critically ill patients. Many people especially those who live in rural areas lack access to intensive care due to absence of such resources in small hospitals. ICU telemedicine enables trained intensivist clinicians in regional hubs can monitor patients at remote hospitals in assistance with bedside care teams (Kahn, 2016). A large-scale study conducted by the Department of Critical Care Medicine examining morality before and after the introduction of ICU telemedicine effectiveness in a large number of hospitals revealed that patients in ICU equipped with telemedicine services were discharged from ICU 20 percent more quickly and saw a 26 percent lower mortality rates (Kahn, 2016). Although, this technological advancement offers endless benefits however like any other, it also comes with some drawbacks.

Legal and Ethical issues:

Telehealth with many benefits, can also involve some legal and ethical pitfalls. Telehealth undermines the therapeutic importance of a doctor patient relationship. Lack of eye contact may be a big hurdle when it comes to treatment. A doctor may miss out on certain things that he cannot take in account vis electronical communication. Additionally, another major ethical issue is the lack of information in how to use the technology right. According to the American Medical Association, “Patients differ dramatically in their adoption of new devices and software. Text messaging may work well for one patient but not for the other. Even a patient-reported outcome questionnaire may be reasonable for taking a medication and family history, but less appropriate for end-of-life discussions (Mehta, 2014).” Therefore, it is very important to make sure all these issues are kept under consideration. Now let’s move on to one of the biggest concerns that is the major concern regarding this advancement.

Security Concerns:

Although this innovative technological advance offers many promising solutions to health care industry however, just like any other it involves a major issue: privacy and security risks.

Patients when engaged in online communication may not know with whom or where is there personal information is shared. The information may be available to a large number of devices which further increases the risk for potential breaching. The unauthorized access may occur while transmission or in storage of personal information. For example, a patient health monitoring device may reveal home sensitive information and activities that patient wishes to keep private. Although, there are many security software and apps to provide a safe corner however due to the rise malware, hacking and security breaches those may not serve sufficient. Existing regulations such as the one by HIPAA are also insufficient as they provide protection to only the covered entities (Hale 2014). These privacy concerns if stay unaddressed may adversely affect people's trust in telehealth and may also potentially out-weigh the benefits and accessibility it offers to healthcare system. Therefore, it is very important that certain measure is taken to minimize these threats and improve this advancement.

Social problems:

Although, information and communication technology have paved the path for endless opportunities to redefine the healthcare industry, it also comes with some social problems. One major social issue is that with electronic communication, the needs of a patient may be unforeseen. Clinicians may not be able to implement their moral responsibility to heal the patient as they would if they do so in person. According to a practicing neurologist and chief medical technology officer, Dr. Todd Czartoski, "I know firsthand about the benefits of telemedicine for patients and organizations. I also know how important is to maintain the personal touch to comfort patients especially in our increasingly tech-driven system (Czartoski, 2019).

Additionally, unacceptance by many people to adapt to technology may also obstruct further advancements.

Conclusion:

Overall, if we look at the big picture, this technological have changed the health industry significantly. Telemedicine should be evaluated to see how effectively it works and whether it provides adverse effects (Mehta, 2014). If we address these issues and find appropriate solutions to the issues, we can further advance and implement this technology to whom it's inaccessible. Additionally, the new generation of physicians rising will be better able to understand the new technology and therefore better able to deal with the issues.

References

Hale, T. M., & Kvedar, J. C. (2014, December 01). Privacy and Security Concerns in Telehealth.

Retrieved from <https://journalofethics.ama-assn.org/article/privacy-and-security-concerns-telehealth/2014-12>

Kahn, J. M., Le, T. Q., Barnato, A. E., Hravnak, M., Kuza, C. C., Pike, F., & Angus, D. C.

(2016, March). ICU Telemedicine and Critical Care Mortality: A National Effectiveness Study. Retrieved May 26, 2019, from

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4752864/>

Mehta, S. J. (2014, December 01). Telemedicine's Potential Ethical Pitfalls. Retrieved from

<https://journalofethics.ama-assn.org/article/telemedicines-potential-ethical-pitfalls/2014-12>

White, L. A., Krousel-Wood, M. A., & Mather, F. (2001, January). Technology meets

healthcare: Distance learning and telehealth. Retrieved

from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3116779/>

Czartoski, T. (2019, March 20). Commentary: Telehealth holds promise, but human touch still needed. Retrieved May 26, 2019, from <https://www.modernhealthcare.com/opinion-editorial/commentary-telehealth-holds-promise-human-touch-still-needed>

Annotated bibliography

Hale, T. M., & Kvedar, J. C. (2014, December 01). Privacy and Security Concerns in Telehealth

This article addresses the privacy and security concerns in Telehealth. It contains information about recent researches conducted by Hall JL and McGraw, well known researcher. It is published on the American Medical Association journal of ethics. The article covers topics about security breaches continue to interfere with the implementation of the new technology. It also gives some solutions to combat the issues involving the main issue with concrete background information.

Kahn, J. M., Le, T. Q., Barnato, A. E., Hravnak, M., Kuza, C. C., Pike, F., & Angus, D. C.

(2016, March). ICU Telemedicine and Critical Care Mortality: A National Effectiveness Study.

This article provides results for a research conducted on a large scale by Jeremy M Kahn MD and his fellow colleagues. It involves the study of how ICU telemedicine has affected the mortality rate in patients. Furthermore, it accounts sufficient data to support their research and credibility. The study was conducted on a national level. It was published on a government certified website.

Mehta, S. J. (2014, December 01). Telemedicine's Potential Ethical Pitfalls.

This article addresses the main pitfalls that are involved in the use of telehealth. This article was also published on the American Medical Association website. Shivan Mehta MD an MBA

certified provides concrete information to support his stances. Topics included in the articles are some downsides that comes with telehealth. And also, what can be done to minimize these pitfalls.

White, L. A., Krousel-Wood, M. A., & Mather, F. (2001, January). Technology meets healthcare: Distance learning and telehealth.

The author White addresses many potential benefits that come with telehealth. Additionally, he explains how this technology has changed healthcare industry by providing sufficient information to support his stances. He also provides many statistics to support his stances and further validate his views. It specifies how telehealth is changing the lives of many who are unable to access healthcare due to lack of resources especially those living in rural areas.

Czartoski, T. (2019, March 20). Commentary: Telehealth holds promise, but human touch still needed. Retrieved May 26, 2019

Czartoski himself being him an active practitioner addresses the advantages and disadvantages that arise with telehealth. He explains in the light of his own experience about how it affects his relationship with patients.

