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Technology in Healthcare

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Why I Chose the Topic

I chose this topic because technology has improved humans' living standards not only in the medical space but across the entire world. Numerous advantages have resulted from the introduction of technology in healthcare. From the invention of advanced clinical procedures and X-ray machines and many others, technology has increased life expectancies, and humans are now much healthier. As time progresses, new technologies are being realized to cure illnesses, improving the quality of life. Additionally, in the healthcare sector, the dependence on health technology cannot be inflated. Therefore, as an outcome of these excellent innovations, healthcare workers can invent new means to advance their service delivery. Better clinical procedure, enhanced patient care, and diagnosis, influence this choice of topic.

Additionally, clinical technology is an extensive field where invention plays a key part in supporting health hence making technology in healthcare become my choice. Jeon & Park (2015) argues that areas such as, biotechnology, IT, manufacture of medical apparatus and devices to mention a few, have made an immense contribution to improving people's health all over the world. From innovations that are considered less significant such as ankle supports, to much more complex technologies, for example, Magnetic Resonance Imaging (MRI) machines together with robotic prosthetics limbs, and synthetic organs, technology in health has had an incredible impact without a doubt.

Current Relevance of Material

The movement towards EHRs has been a big advancement in the medical world. It can facilitate limitless improvements in medical diagnostics and cure. Hospitals had dissimilar information systems that were unreliable in their ability to transfer and share patient information.

With the introduction of electronic health records, systems are interconnected, allowing for quick transfer of information and highly integrated and efficient care (Jeon & Park, 2015).

Consequently, 3D-printing has brought positive wonders in all facets of healthcare. Printing artificial limbs, bio tissues, blood vessels, and pills are now possible. Researchers have been able to print the most sophisticated human parts such as the skin and blood vessels. This technology proves vital for burn victims and skin grafts. Also, the pharmaceutical sector has benefited from this technology. The FDA accepted 3D-printed drugs and researchers are currently working on polypills. These pills assist patients in observing their therapeutic plans.

Telemedicine referring to methods of advancing healthcare using telecommunications technologies also comes in. This technique is becoming more popular in areas where there is limited access to healthcare services and hospitals. Notably, patients can meet doctors virtually on their smart devices. The cost advantage associated with telemedicine is considerable.

Again with remote monitoring tools patients can avoid unnecessary visits to physicians when they monitor their health from home. Rath & Pattanayak (2019) suggests that pacemakers for patients suffering from heart complications can automatically send information to remote healthcare facilities. Besides, patients with other chronic ailments are also taken care of because these devices and tools allow systems to monitor the patient's vital health signs from afar.

In the recent past, wearable technology has become popular by the day. Wearable devices gather information, which helps practitioners and patients monitor and assess the health of the individual wearing the device. Therefore, it is easier for the wearer to monitor their vitals and report incidences to detect normal body functioning changes. This technology has encouraged a more personalized treatment approach and can be achieved by analyzing an individuals' data and presenting health recommendations, care, and coaching. The approach precisely addresses

individuals' conditions and goals using this technology. Furthermore, it is important to understand an individual and draw their motivation, which guides physicians in providing solutions specific to the individuals' lifestyle in precise and manageable procedures.

Last but not least, DNA sequencing and drug transformation development have also contributed immensely towards quality healthcare delivery thanks to technology. DNA sequencing is termed as figuring out the order of DNA nucleoids that make up an organism's DNA. Scientists have learned the DNA patterns of diseases and viruses coming up with effective vaccines and medications through technology. Currently, the world is battling the Covid-19 pandemic. Thanks to technology, scientists have studied the DNA pattern of the virus and developed a ninety percent effective vaccine to prevent an individual from contracting the virus. On the other hand, the current process for creating new drugs costly and takes a long time. Nonetheless, technology has introduced new ways that improve drug development with approaches ranging from AI to in silico trials. These technologies are projected to dominate the pharmaceutical landscape soon. In silico drug, trials are another promising technology. These personalized computer models create a regulatory estimation of a medical device, intervention or product. Whereas the current biological understanding and technology do not allow fully computer-generated scientific trials, a major improvement in this sector has been realized. There are organs-on-a-chip, which have already been implemented. Furthermore, artificial models have been created by various institutions that are used to study osteoporosis and heart diseases (Krick et al., 2019).

Integration into Clinical Practice

Through information technology and medicine, IT has contributed majorly to the medical industry through mobile technologies, electronic medical records (EMR), and telecommunication

services. Both physicians and patients are reaping the benefits that come with this new technology. Moreover, technology in the medical space has advanced from familiarizing medical practitioners with new equipment to be used inside hospitals and remote practices, to connecting doctors and patients who are far apart through telecommunications. Through the initiative, patients have held video conferences with doctors saving time and money that would normally be spent traveling to an alternative physical location. The use of medical technology among hospitals and practices are becoming popular by the day. Physicians can easily access all the information they require- from research and studies, drug information, patients records and history- and much other information within a short period. Besides, carrying the mobile devices effortlessly around with them means that they readily have access to any information they may need. Also, applications that help find potential health concerns and probing digital information like CT scans contribute to medicine's benefits by information technology (Agbo et al., 2019).

Medical equipment technology has helped improve living standards becoming one of the main benefits of incorporating inventions in the sector. Better monitoring systems, minimally-invasive surgical procedures, and comfortable scanning apparatus technologies provide patients room to enjoy healthy lives spending minimal time in recovery. Robotic surgeries have also been created by integrating medical equipment technology and telehealth. In some of the cases, physicians may not be required in theatres with patients when the procedure is in session. Alternatively, specialists can perform the operations out of theatre. On the other hand, patients can have the surgery done in a clinical or hospital close to their hometown, disregarding the stress and hustle of travels related to health. However, some robotic operations are performed with the physician present in the theatre room operating the robotic devices. As a result, this

technology allows for a low-invasive process leaving patients with minimal scarring and considerably short time for recovery.

According to Krick et al. (2019), technology in medical research has helped physicians, and medical scientists continuously conduct research and try new procedures. The scientists aim at preventing, diagnose, and cure diseases and develop new medicines and drugs that can reduce symptoms or treat illnesses. In this case, technology in clinical research has enabled researchers to observe ailments on a small level and develop antibodies that fight and prevent these diseases, for example, the vaccines developed against dangerous diseases like polio. Malaria, MMR, and many more have prevented the spread of the diseases saving thousands of lives worldwide. According to Dye & Acharya (2017), vaccines save close to three million lives per year and protect millions of people from contracting fatal diseases and viruses.

The Law and Medical Technology dictate that the evolution of technology in healthcare has raised the need to establish rules and principles relating to its practice. These rules must be accustomed to adapt to the current ways of governing healthcare. Code of practice, such as HIPAA and its privacy and security Act, aims to address patient's information confidentiality and integrity and the procedures to be undertaken in maintaining privacy in the digital space. Therefore, medical practitioners and healthcare administration should be very careful in implementing new technologies and products into their services. They should also ensure that all the technologies are compliant with the relevant authorities before investing in implementation.

Lobbying for Funds

Lobbying legislators to provide funds to support technology in healthcare will not be an easy task due to the nature of their work and schedule. However, Awad (2020) argues that legislators in general hold powerful positions, which can help advance technology in the

healthcare sector. Consequently, to gain financial support from legislators, I seek to employ technology in the initial phases to get their attention. For instance, I would research and gather email links for several legislators and send them emails addressing the healthcare sector's current concerns and the possible technological mitigation measures to address these issues. Besides, I would suggest an increase in the funds allocated for the sector to increase technology distribution and train individuals. This phase is crucial because it would create a direct communication link between myself and the legislator.

Once I receive a response, I would schedule an appointment with the legislators in advance by calling their scheduler. I would present my firm view on why I wish to talk to them in person. If I had trouble getting time to see the member, I would talk to the staff chief about my desire for a meeting. Additionally, I would prepare and send my agenda beforehand, outlining the technological advancements that I would wish to discuss at the meeting and the members in attendance. The next cause of action granted the opportunity to meet the legislators and staff members in person or their assistants would be to develop a brief and detailed plan. That would convince the lawmakers to provide additional funding. This face-to-face approach proves to be efficient as it would provide personal contact with the legislators. Besides, I would use this opportunity to highlight the relevance and importance of technology in the current healthcare system. However, I would have to consider the legislators' tight schedule and try as much as possible to match these demands.

In summation, healthcare has no other alternative but to embrace the evolving technologies to stay relevant in the future because the future of healthcare depends on technology. The current healthcare system provides the opportunity for even further growth within the sector. Developing technologies such as Artificial Intelligence, Virtual Reality and

Augmented Reality, and many others continue to evolve not only in the healthcare sector but other industries in the world. The use of technology in the healthcare system is significant because of the influence to revolutionize the industry. Moreover, integrating technology in clinical practices has been possible by carefully assessing clinical works, the skills required, present, and future requirements. All these concerns can be comfortably addressed through the support of our legislators.

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