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Introduction

This report has the objective to create a better understanding of research skills in healthcare and analyse what methods can be used in the field, what are the steps to follow in writing a research, and how to use these skills in future academic or work environments.

Research is created in order to unravel still hidden information that has not been presented yet to the public. The topic of research should comprise all the important areas of your research and create an interest in the society. Many pieces of research receive funding from external sources due to the chosen field and topic.

The importance of technology in health care has been highlighted in the recent years, and many institutions are focused on implementing suitable technology in order to improve their performance and quality of work. When people choose a healthcare institution, they often look for good patient care, safety, and quality. According to Schoville and Titler (2015), a very important factor for workforce is to sustain the implementation of new technologies in these environments as a routine to promote cost-effective, safe, quality care.

The aim of this study is to understand what technologies have been implemented in the recent years and how these technologies have impacted the healthcare department. In order to complete this report, multiple sources of secondary data will be analysed and the findings will be reported accordingly.

The use of technology in medical settings has been seen in a better light since the beginning of the Covid-19 pandemic, and there have been drastic changes in medicine and healthcare in this short period. As face-to-face doctor appointments were very hard to come by, GP practices and other institutions offered more options for patients, such as video calls, phone appointments and chats with professionals.

We have to also look at the healthcare marketing which has become one of a norm in recent years by the intense use of social media and the internet of things (Sadiku et al, 2019).

The interactions people have on social media regarding health problems is amazing, with more and more individuals sharing their stories and experiences. This helps others to feel like they belong in the community more. This more applicable for mental health issues, which has become the focus of the current society. Another trait of it is the positive impact that social media has on the quality of life. Professionals have stated to the use of online tools by patients have made a positive impact on their well-being as well.

Research Objectives

In order to have a valid and reliable research, certain methodologies and strategies have to be used, such as primary data collection and extensive resources of secondary data.

The two main objectives of the research have been a point of concern for the academic and professional environment, as not only patients, but the staff as well are facing difficulties in accepting technology being implemented widely in their lives.

1. We will evaluate the recent technological implementations in healthcare and understand how it has been perceived by professionals
2. A comprehensive literature review will analyse how the implementations have impacted the healthcare system.

Having the answers to these questions might offer a better understanding of the healthcare system and its need in terms of emerging technology and artificial intelligence.

The reason of choosing to explore the topic of emerging technology in health and social care is to highlight the need for both professionals and patients to adapt to it in a much easier manner and build their confidence and trust in technology. Historically, healthcare has been developing at a high rate and often professional find themselves going through extensive training and practice, which is very time consuming. By understanding the necessity of technology in the field, more educational programmes can focus their energy and resources in developing and maintaining long lasting equipment and inventions.

Literature Review

In a study conducted by Morill et al., (2017) it has been discovered that physicians truly believe that e-health has a positive impact on improving the quality of service offered to patients. The study involved more than seven hundred physicians and the method of research was a cross sectional survey administered online.

Implementing technology in healthcare institutions comprises many steps and a long process until it is ready to be used. A proper plan has to be created, which involves identifying the need for it, considering what options are available, completing training plans and financial reports, and ensuring the maintenance of the new system.

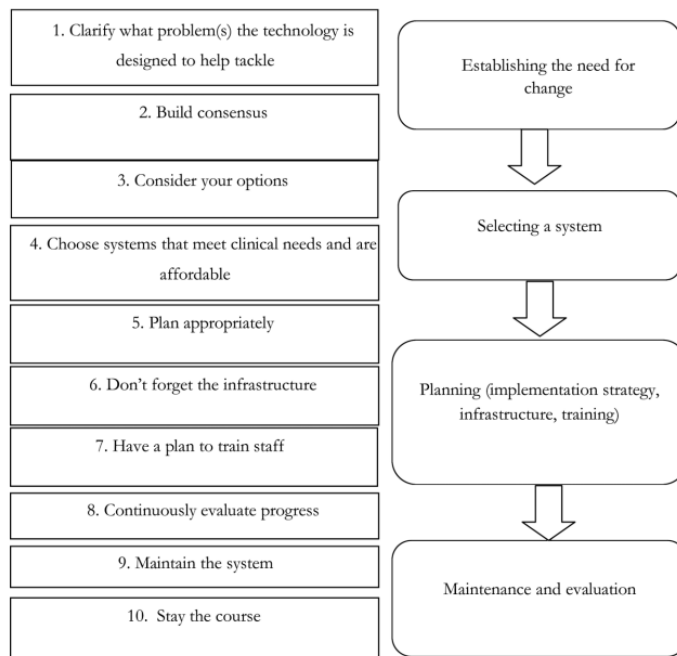


Figure 1. Summary of the lifecycle stages of health information technology and the ten key considerations (Cresswell et al., 2013).

In the UK, the NHS is fully financed by public funds, which means implementing new technology can sometime be challenging. The budget has to allow not only the implementation, but also the training of staff. The public authorities play an important role in the adoption of new technologies in the healthcare department. This means that investments are covered by public funding and decisions in adopting new technologies are made through public decision-making methods (Isomursu et al., 2011).

According to Skar and Soderberg (2017), one of the main challenges in healthcare today include an increase in older population, which leads to a bigger number of patients with chronic illnesses and reduced resources in health care. The international interest in using eHealth services to improve the quality and safety of health care and to reduce healthcare costs has increased greatly in recent years.

The notion of eHealth is often describing the use of digital technology to treat patients, diagnose diseases, conduct research, support health education, inform and communicate with patients or other healthcare providers and gain an overview of public health in society (WHO, 2005).

Emerging technology and artificial intelligence are the newest inventions in the healthcare system and only a few have been implemented yet, such as robotic nurses, healthcare apps, tracking devices, or 3D printing. Emerging technologies in healthcare include information technology, nanotechnology/nanomedicine, biotechnology, cloud computing, Internet of things, augmented/virtual reality, GPS, RFID, voice search, chatbots, social media, blockchain, personalised medicine, biometrics, electronic health records, wearable computing devices, drones, robotics, and artificial intelligence. One of the most used technology at present is the blockchain, which is an easier transaction of medical records between medical institutions, with all the data having a central location. Using a blockchain it allows professionals to store and distribute data across many networks concomitantly. This implementation is mostly used for clinical trial records, regulatory compliance, and medical records (Sadiku et al, 2019).

Nanotechnology is being replaced in high volumes by nanomedicine in healthcare, by using the first one in finding diagnoses and treatment of diseases. Nanotechnology was already a well-developed field on its own but helping supply chain, and now extended to the production of medicine, that is meant to be more effective in applying treatments. The greatest objective of it however is the treatment of cancer, which is projected to be possible in the near future. Going through a global pandemic, the need for creating and implementing new technology has been crucial. Another important innovation in the field was the Remote Patient Monitoring, which involves placing a few sensors on the patient's body, which allows healthcare staff to monitor things like blood pressure, heartbeat, or body temperature. These innovations, along many others have made headlines in mass media, as scientists managed to build technology that we couldn't see happening this fast, such as the Covid-19 vaccines that have been created in a very short timeframe. The evolution of technology is at its peak and organisations across all fields understand the current need of it.

Methodology

The methodology used in this research will be focused on secondary data and literature research. Secondary data is information, reports, articles, and other kinds of literature already published by other researchers. The data has been obtained from primary research and converted into findings and theories.

The reason for using secondary data is the inaccessibility to primary data in the field. Secondary data is very important for research, as it comprises the collected data from multiple sources and allows researchers to make their own conclusions.

In contrast with gathering primary data, secondary data has a few benefits, such as time and cost saving, and provides a bigger range for comparison for research. On the other hand, in collecting secondary data, researchers have to ensure they find the most updated information, which is also valid and accurate. Literature related to implementing technology in the healthcare system is available in previous published work, as well as being validated by primary research and evidence.

For example, it has been reported that 3D printing might be able to produce human organs in the future, after the technology managed to help the supply chain in the past two years and produce medicine and pieces of medical employees worldwide. Secondary data research can be conducted when the data available is relatable to the subject and the amount of sources are not scarce.

In choosing the topic of a research, one must consider more than one strategy, understand what resources they have available, how easy is to access the information, what methodology will they use, and what they want to find out from studying the field. It is very important to decide on the methodology and methods before initiating the work. For instance, one example would be when the researcher has set on a specific topic and intends to use primary data in the study but in the process realises the targeted population is not accessible or very hard to find.

In conclusion, studies have to find an answer to the research questions formulated by the researcher. In order to answer the questions, suitable methods should be used. In the chosen topic, secondary data will answer both of the research questions by conducting a literature review.

Conclusion

The healthcare industry, both public and private have showed great innovation ideas and have implemented technology across all departments. According to multiple sources, emerging technology and other innovations are essential in time saving across healthcare staff, especially during the pandemic, when almost all countries have encountered shortness of staff and high morbidity rates.

The resources studied have shown that healthcare facilities provide a range of excellent innovation, mostly in developed countries. The information published suggests that several organisations are investing in emerging technology across all departments and the world is moving at a fast speed towards great evolution in terms of technology and artificial intelligence.

Processes and methods used are suitable for the research and will create a good comprehension of the implementation and use of emerging technology in healthcare. The forecasted findings will most likely support the belief that technology in healthcare is the right path towards many benefits, such as better patient care, reduced costs, avoiding preventable events, improving the quality of life, developing new treatments and medicine, and improving public health in general. However, we will look if there are negative effects and risks of these great innovations, as found in several sources. Some of them could be inadaptability to technology, security and privacy risks, greater expenses to produce it, and unsuitable training programmes.

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