

DIGITAL SKILLS AND RESEARCH METHODS. CERTIFICATE OF HIGHER EDUCATION IN HEALTH AND SOCIAL CARE

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THE USE OF TECHNOLOGY IN HOSPITALS.

1.Introduction.

Medical technologies make it easier for us to obtain a diagnosis with more reliability and precision than previous methods (paper), which allows us to obtain better results. Thanks to technology we can replace, add and support organs or body parts that do not work or malfunction. The technology also allows remote monitoring of patient progress (MedTech Europe, n.d.).

2. History of technology in the field of medicine.

In the 1960s they began to consider how technology could improve practice in medicine. They believed that information technology would be of great help when doctors had to access data to make decisions about a patient. For public and private health users, it would also be an advance since digital alert and reminder methods would be implemented, making the disease easier and more bearable. The equipment they had at that time was unreliable and quite slow compared to the equipment we currently have, so the doctors preferred not to invest in these tools and continue with their autonomy.

In the 1980s there was an important improvement in technology, with all the developments they made in this field they needed to implement a data exchange protocol creating the Health Level (HL7) but despite this, hospitals had few sources of information. financing to invest in this material, although this would lead to an improvement in diagnostic results and reduce costs.

In 1991 the Institute of Medicine (IOM) created a patient registration document, an essential technology in health care.

And since then, everything has been improvements that have made medical care easier for both patients and professionals, taking into account that after having passed a global pandemic in which we have all had to familiarize ourselves with technologies in all sectors of our life, our life has changed drastically with respect to the use of technological devices for health care. (Ambinder, 2005).

3. Is technology important for health care?

The implementation of technology in health care in recent years has facilitated the improvement and precision in treatment and diagnosis of patients. This is probably one of the sectors most benefited by the use of new technologies. As a result, it has improved the quality of life of many patients and saved the lives of many others. (Institute of Entrepreneurship Development, 2020).

3.1 What benefits does technology bring to health care?

Information technology (IT) facilitates the storage and retrieval of data from each patient's health record. As a result, there will be less chance of medication errors. Storing all the information in databases reduces the risk of losing it or that health professionals do not have easy access to this information. It also helps improve patient health safety because patients can receive medication alerts, reminders and reports related to their diagnoses and treatments.

4. The great change in the world of medicine thanks to technology.

The health industry has had a good change in recent years. Many solutions have been proposed to improve and advance in the medical sector, which have finally been implemented thanks to technology, achieving very satisfactory results. Today, thanks to technology, we have better access to the treatment of diseases, technology also allows us to treat patients more efficiently and have better control of patients. (Rilind Elezaj, 2018).

4.1 Various specific ways enhanced through technology.

- 3D Printing: This technique consists of printing exact replicas of parts of our body (organs, bones, etc...) to be able to put them in place of the areas that have the problem.
- Big Data: There is a large amount of stored data that, when analysed, represents a great improvement in various areas of medicine. (e.g., it allows to obtain more precision in the diagnoses for the application of treatments to patients.)

- Remote Monitoring: It allows patients to be monitored in their own home without the need to move and without incurring any extra cost for transportation.
- Medical Experimentation: The way in which medical experiments are carried out has improved thanks to technology, this allows us to save a lot of time avoiding having to depend on volunteers for the experiments. We have been able to verify its efficiency and improvement in recent cases of viruses known as the Ebola virus.
- Mobile apps: Today it is possible to monitor our body and our health using mobile apps, we can check from our heart rate, steps taken over a period of time and even sleep patterns. We also have access to interact with doctors through social networks.

5. Use of technology in hospitals today.

The number of deaths currently in hospitals is alarming, only in one of the hospitals in England it is estimated that about 1200 patients die a year due to errors that could have been avoided, which represents a cost to the NHS of 2500 million pounds sterling year. (Cresswell and Sheikh, 2015).

Information technology has been designed to reduce these costs; many investments have been made believing in this assumption. Current HIT tools include:

- Data storage and management
- Decision-making tools
- All of them being very useful to facilitate remote care of patients.

5.1 Why is the implementation of HIT services in hospitals slowing down?

Many benefits can be obtained through the implementation of HIT; Many organizations have created their own systems to meet their own needs, but the implementation of these systems is very costly and that is why most organizations prefer to buy them instead of creating them themselves.

5.2 Strategic context

It has been verified that each health system has different HIT implementation strategies in accordance with the guidelines given by each government.

5.3 Consequences for professionals

As I mentioned before, the implementation of HIT systems in hospitals has many benefits in communication between professionals in the sector, but this can also be a disadvantage for face-to-face communication between doctors and other health professionals. They must make an effort to understand the wide range of possibilities and benefits that the use of these systems can bring them.

5.4 Challenges and changes.

Currently in countries like the UK, the application of HIT in hospitals is a tool that still cannot fully satisfy the needs of patients and professionals. Significant technological changes are proposed that are still being worked on.

6. How will technology affect the hospital sector in the future?

The future of healthcare includes technology that seamlessly blends data about a patient's medical history, real-time health, insurance coverage and financial information, all to support provider decision-making, improve patient health and reduce costs. This will begin by expanding access to patient health information (Greenway Health, 2019).

6.1. Four technologies that will change the hospitals of the future:

The health industry is constantly developing, which makes it possible to provide a better experience for patients and professionals in the sector. This has made technology increasingly critical within hospitals (Healthcare Facilities Today, n.d.).

- Augmented Reality (AR) and the patient experience: In the next decade, portable technology will increase, improving safety and patient orientation in the hospital. Through AR, health professionals will be able to identify patients and direct them to the correct area. Over time, current methods such as bracelets to identify patients will cease to exist, there will also be fewer logins by professionals thanks to the fact that they will be able to identify them through AR technology.

This technology will also allow doctors to obtain their data without the need to be looking at a screen, in this way they will not stop observing the patient at any time, this will be very beneficial for surgeons at the time of an intervention since they will be able to use both hands without leaving the patient.

Emergency departments will also benefit from AR technology since it will offer a biological repair unit for biointegrated devices that will allow you to measure all the changes that have occurred in your body.

- Artificial Intelligence (AI): This technology will prevent doctors from having to memorize a large amount of information, reducing the amount of human work and thus facilitating better accuracy and speed of diagnosis.
- Virtual Reality (VR): In the next few years these technologies will replace televisions in hospital rooms, this will bring many benefits to the patient such as comfort, social support and control (e.g., patients who cannot move will be able to simulate doing so through virtual reality devices). Thanks to this technology, patients will have less stress, it will combat loneliness and provide entertainment, also highlighting that thanks to virtual reality, communication between doctors and patients will be easier, as well as communication between professionals.
- Virtual beds and hospital at home: For patients who require less assistance, progress monitoring can be done from home, thus facilitating the lives of patients who do not have good mobility (e.g., patients who need rehabilitation after surgery). Patients will be able to connect through these new technologies with the health professionals assigned to follow their recovery process. AR, AI and VR and virtual beds will help doctors and nurses to provide quality patient care.

As a conclusion, we could say that new technologies will be the basis of care in hospitals.

7.Conclusion

In conclusion, I will say that after reading a large number of resources and analyzing them one by one to obtain precise information on this subject, I have come to the conclusion that although we have not used technology in the health system for many years, the use of These tools are making life easier for patients and professionals.

The implementation of these technologies is making us save time going to the hospital since we have a communication system with our doctors that does not require us to leave the house, in addition, the new devices speed up the obtaining of results and diagnoses related to any pathology or disease. that we may have, keeps patient data safe by making it easier to store and transfer this data in a more secure way. We are all clear that the implementation of these systems represents a great cost for governments in the case of public hospitals and private hospitals, also the personnel who work in these centers need to be qualified and trained to use the devices properly and thus be able to take advantage of all the advantages they have.

In my opinion, the most important conclusion is that the use of technology in hospitals and health centers is helping to save many lives.

8. References

- Ambinder, E.P. (2005). *A History of the Shift Toward Full Computerization of Medicine*. Journal of Oncology Practice, [online] 1(2), pp.54–56. doi:10.1200/jop.2005.1.2.54. (Accessed 31/08/2022).
- Cresswell, K.M. and Sheikh, A. (2015). Health information technology in hospitals: current issues and future trends. Future hospital journal, (online) 2(1), pp.50–56. doi:10.7861/futurehosp.2-1-50. (Accessed 31/08/2022).
- Greenway Health. (2019). The future of healthcare technology. [online] Available at: <https://www.greenwayhealth.com/knowledge-center/greenway-blog/future-healthcare-technology>. (Accessed 31/08/2022).
- Healthcare Facilities Today. (n.d.). *4 Technologies Shaping Hospitals of the Future - Information Technology*. (online) Available at: <https://www.healthcarefaciliestoday.com/posts/4-Technologies-Shaping-Hospitals-of-the-Future--27145>. (Accessed 31/08/2022).
- Institute of Entrepreneurship Development. (2020). *Importance of Technology in Healthcare*. (online) Available at: <https://ied.eu/blog/importance-of-technology-in-healthcare/#:~:text=The%20use%20of%20medical%20technology>. (Accessed 31/08/2022).
- MedTech Europe. (n.d.). *Value of Medical Technology - About the industry*. (online) Available at: <https://www.medtecheurope.org/about-the-industry/value-of-medtech/#:~:text=Medical%20technologies%20enable%20the%20early>. (Accessed 31/08/2022).
- Rilind Elezaj (2018). *How technology has changed the world of medicine - Geospatial World*. (online) Geospatial World. Available at: <https://www.geospatialworld.net/blogs/how-technology-has-changed-the-world-of-medicine/>. (Accessed 31/08/2022).
- Says, M.B. (2022). *Recent Developments in Health Technology*. (online) News-Medical.net. Available at: <https://www.news-medical.net/health/Recent-Developments-in-Health-Technology.aspx>. (Accessed 31/08/2022).
- Schatz, G.B. and Rosen, B.L. (1988). *The Role of Technology in Hospitals*. Medicolegal Library, pp.67–77. doi:10.1007/978-3-642-83301-4_11. (Accessed 31/08/2022).