

Role of Information Technology in Medical Sciences

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ABSTRACT

Today, technology is improving the global environment and moving us toward a more complex technological world. IT's growing significance in medical science has a significant influence. In healthcare, information technology provide enormous potential for innovation. Web-, mobile-, sensing-, computing-, and bioinformatics-based treatment and care coordination systems hold great promise for allowing fundamentally new forms of healthcare both within and outside of traditional systems of care, and have the potential to have a significant public health effect.

Keywords-Healthcare, Services, Information Technology, health information technology

INTRODUCTION

Continuous advancements in information technologies (IT), such as the Internet, ambient devices, and intelligent computer systems, have resulted in an increased usage of these technologies in medical practice and treatment. This has raised significant concerns about the societal implications of medical technology.—"[1] IT's can help bridge the information divides that have emerged in the health sector in developing countries—between health professionals and the communities they serve, and between the producers of health research and the practitioners who need it—by developing databases and other applications that provide new and more efficient ways of accessing, communicating, and storing information.[2]

We are always surrounded by networks through which information travels, whether we are aware of it or not. Our perceptions of time and place are shifting; the globe

appears to have transformed into a 'global village,' with distance no longer acting as a barrier to economic or social interaction. In the health-care industry, the use of IT infrastructure has become commonplace. The increased usage of computers in hospitals exemplifies this trend. Hospitals' daily routines have been taken over by technology, allowing nurses and physicians to operate more effectively with sufferers and each other.'[3] IT's have the ability to lower the cost of patient-centered healthcare, improve quality of treatment and information exchange, educate health professionals and patients, generate a different type of engagement between patients and health providers,. Because the healthcare system is becoming more reliant on technology for the adoption of new instructional resources and the renewal of learning approaches, and gaining technological knowledge. [4]

Healthcare is one of the most significant social and economic concerns that any country has, and today's healthcare executives, doctors, researchers, and other field practitioners are under increasing pressure from both public and private sector demands. While growing medical costs have a significant impact on people's quality of life (especially in the case of chronic diseases), population expansion and ageing have an impact on health care needs and necessitate the development of new and more advanced technological solutions.[3][4] The healthcare industry has benefited greatly from information technology. The introduction of electronic medical records is one example of a big improvement that IT has offered to hospitals (EMR). Medical data may be converted into a single database using this method. Not only does this technology save money on paper, but it also allows healthcare practitioners to quickly access important patient information including medical history, prescriptions, and insurance information.[5]

IMPORTANCE OF INFORMATION TECHNOLOGY IN THE HEALTH CARE INDUSTRY

In the healthcare business, information technology plays a critical role. The main purpose of information technology in the health-care sector is to enhance the population's overall health by providing patients with better treatment and peace of mind.

Managing millions of hospitals and patients in today's world would be difficult. Because the world's population is continually increasing, the demand for quick answers is increasing. Daily duties must be completed on schedule and without delay. Information technology makes dealing with patients simple, quick, and convenient for health care administrators. Additionally, it has supplied the patient with improved

health care facilities. Technology has also made managing easier.

The use of IT in healthcare may be divided into four categories:

Health and education; These are the two areas where individuals may readily search, access, study, and interact with others in the Technological age. Health education raises public understanding of communicable illnesses, health status, preventative strategies, and current diagnostic and treatment processes. This offers individuals the option to pick the best hospitals and specialists to go to for treatment and to live a healthy lifestyle.

Hospital Management System; ICT also aids management in improving patient safety and happiness, staying current with new technology, having a clear understanding of population health and data, and staying on top of legislative demands. First and foremost, the workplace may be improved.

Health Research; We can locate innovative diagnostic technologies that saves time and money. Many people's lives are saved as a result of this since therapy is given ahead of time. Traditional healthcare systems can be removed and new models for effective, high-quality care can be established using ICT.[6][1]

Health Data Management; Information technology (IT) may help improve the healthcare system in a variety of ways. Healthcare must make better use of ICT to bring about further improvements and raise healthcare to a far higher level, which is crucial for the country's growth.

MERITS OF IT

We wonder how information technology has altered our lives. But we know deep down that if we don't have it, everything would come to a halt. Individuals, students, patients, and everyone of us benefit from their apps, which make our lives easier and more convenient.

1. Access to Information

The World Wide Web, abbreviated as www, has transformed the world into a communal village. That is because the internet makes information from all around the world readily available. Although much of the news you read on social media is just factual, you may also see pictures for specific events. Not only is there more news accessible, but getting access to all of it is also simple.

2. New Jobs

Every day, new possibilities arise as the demand for IT workers grows across sectors. Several rising economies throughout the world are currently establishing new records

in this discipline by improving their capabilities. Computer programming, system analysis, testing, producing software and hardware, and designing online applications are all becoming increasingly popular.

3. Saves Time

we've all experienced these challenges when relocating. Whether on a work trip or on vacation, modern technology makes it easier to enjoy your journey by allowing you to get anywhere quickly. One can look for a certain location and then figure out how to get there. The show does take a break.

4. Entertainment

We now have limitless access to a variety of entertainment channels thanks to widespread internet use on computers, tablets, smartphones, iPods, and other gadgets. Remember when folks had to wait for the Friday night broadcast or a special presentation on television? You may now download and purchase music, movies, TV series, and games with ease. ngle turn and will also display you the current traffic status along your journey.

6. Fun

We now have limitless access to numerous entertainment channels thanks to widespread internet use on computers, tablets, smartphones, iPods, and other gadgets. Remember when you had to watch the Friday night broadcast or a special presentation on television? Music, movies, TV shows, and games can now be downloaded and purchased with ease.

7. Communication

It is undeniable that modern technology has supplanted older technologies. We can't picture our lives without that replacement.

8. Learning Technique

The majority of applications and technological gadgets are used to aid in the education of students. The most basic example of a calculator may astound a person. The solution is simple to use and includes various calculations and binary operations.

9. Disabled are Empowered

Almost everything is now feasible thanks to contemporary science and technology. Brails that function on electronic pulses have recently been discovered. Artificial limbs, smart sticks, and other gadgets People who are handicapped are no longer disabled. They are undoubtedly successful alongside the conventional ones in the long term.

10. Globalization

Through their sharing ideas and possibilities, digital technology has broken down physical borders between nations. The growth of social media has facilitated communication, and the usage of Facebook, Twitter, and other social networking platforms has allowed individuals from all cultural backgrounds to communicate. Users of social media are increasingly becoming "global" individuals.

11. Improved Banking

Nobody could have envisaged paying in bitcoins rather than dollars less than a decade ago. Cryptocurrency has lately gone widespread due to its use. No one will have to stand in line to pay their utility bills any more.

12. AI (Artificial Intelligence)

The new artificial intelligence paradigm is rapidly expanding in popularity. This is explained by the fact that it will bring in a new era of transformation. People will no longer have to be concerned since an AI system will most likely be concerned with how it may be improved. It will provide a respite to mankind and may be one of contemporary technology's biggest benefits to civilization.

DEMERITS OF ICT

The world has altered as a result of information technology. Communication is considerably more rapid, and worldwide trade is becoming more straightforward. Although the advantages of information technology make it appear ideal, it also has significant drawbacks, which are outlined below.

1. Expense of Implementation and Maintenance

Installing an information technology system in a house or company may be quite expensive. Software training might eat into your budget as well. Information technology systems, like any other piece of equipment, require periodic maintenance and repair. IT systems, however, come with expenditures for maintaining and upgrading.

2. Job elimination

Tasks require less time when IT systems are implemented into a firm, and employees have more time during the day. Paperwork is instantly processed and submitted, reports are prepared at the press of a button, and financial statements are automatically generated. Companies are discovering that they can combine jobs and function with a lower personnel.

3. Security Vulnerabilities

When data is stored electronically, there is a greater risk of security breaches. Hackers evolve in lockstep with technology, and they are never good. Security systems that were cutting-edge a year ago are now obsolete and in serious need of replacement. A security professional should be on staff to secure firm data.

While information technology is rapidly becoming a necessity, there are other things that keep us on our toes. Trying to keep up with the changes while still being able to afford the improvements might leave one feeling powerless and befuddled. However, if we grasp the many parts of information technology, we can achieve far more than we could before.

CONCLUSION

During the same time span, medical breakthroughs have resulted in an explosion of data that would be impossible to comprehend without the use of current information technology. The advancement of digital technology and their application in education has accelerated in recent years. We are increasingly employing web-based networked computer systems for education, as opposed to prior small and micro computer systems in classrooms, libraries, and at home.

The impact of technology on medicine and education is undeniable. However, there are still many areas that need to be addressed before we can fully utilise IT. Finally, no matter how advanced technology becomes, it will never be able to replace the relationship that physicians and students require with patients, as well as the clinical judgements that distinguish outstanding doctors. As a result, we must be careful not to disregard doctor-patient connections in our quest of new technology.

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