E-Medicine: An Overview

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Introduction

With the Boom in the information Technology (IT) sector, the e-medicine business is also flourishing all over the world. Many forms of e-medicine have been introduced such as e-diagnosis, e-pharmaceutics, e-Health Care, telemedicine, telehealth, etc. From the beginning of 21st century, Healthcare sector has been one of the top priorities all over the world. Information and Communication Technology particularly plays the most important role in promoting Health Care [1].

According to The World Health Organisation the e-health may be defined as "...the cost effective and Secure use of Information and Communication technologies in support of Health and health related fields including Healthcare services, health surveillance, health literature and health education, knowledge and research..." [2,3].

The developments in the field of application of various methods of ICT to Healthcare can be termed as information medicine. ITC has helped to introduced novel technologies in Healthcare system. The considerable example is digitisation of the various processes carried out on day to day basis in small, medium and large sized hospitals. In a hospital, thousands of processes are carried out/operate simultaneously at any given time. Does to improve efficiency, efficacy to reduce errors and downstream time there is a constant need to provide complementary solutions. Some of the examples from this category include integrated health records, Smart cards, radiofrequency tags to track patients and medication management.

In this modern era where Healthcare is the top priority of countries that medicine can alone fill the gap between the richer and the poor sectors of the society. This Revolution called the 'Revolution of information medicine' will soon be very patient friendly and easily accessible to the common man [3-5].

Needs, requirements and easy accessibility to the patients

From the day of Adam to the day of atom, every model advancement has been focused for the benefit of the human society. It is rightly said that 'need is the mother of all inventions'. Decreased mortality rate and increased natality rate has been the positive consequences of the 'revolution of information medicine' [5].

Medicine has four basic functions:

1. Disease prevention (examples including cardiovascular disease, AIDS, STDs)

2. Disease diagnosis (Examples: Interview diagnosis of diseases like depression and anxiety diagnosis; Instrument diagnosis like MRI, PET scan, etc.; Collective diagnosis)

3. Disease treatment (medicine prescription, counselling, surgery)

4. Health consultation (pregnancy consultations, child/infant Healthcare, consultations before surgeries).

Sr No.	Terms	Meanings
1.	Telemedicine	It is the use of communication technology to overcome the distance barriers so that improved Medical Services can be provided to the rural communities. It does not require the in-person visits.
2.	Teleconsultations	It is the consultation generally for the purpose of diagnosis treatment of a patient at the site removed from the patient or primary physician.
3.	E-Healthcare	It is one of the Pharmaceutical activities which mainly aims in imparting knowledge related to health and health issues. Using the communication Technologies and internet for decreasing the spaces between professionals and patients
4.	Tele surgery	Surgical operations carried out by surgeons with the help of a computer or satellite connection and a robot.
5.	Tele monitoring	Monitoring patients from a far-off distance using information technology.
6.	E-medicine	Advancement in internet digitisation provides health care and counselling. Being a broader term, it includes- telehealth, telemedicine and other e Healthcare
7.	E-pharmaceutics	It includes management, manufacturing, prescribing, dispensing, Packaging of biomedicines with digitisation.
8.	E-diagnosis	Clinically testing of the medical condition of the patient and focusing of analysis of his / her medical state

Table 1: Taxonomy of the E-medicine system.

A general case study: E-medicine for diabetes

What is diabetes?

Diabetes is a continuous state of high blood glucose level. With the lesser secretion of Insulin hormone by Beta cells of islets of Langerhans in pancreas. Blood glucose level in the blood is not controlled and it rises. This leads to diabetes. Some symptoms of Diabetes are- polydipsia, polyphagia and polyuria.

Diabetes management

Because of improper secretion of Insulin, diabetic patients need to be parenterally given Insulin so that glucose metabolism in the blood can be maintained. A strict monitoring and care to diabetic patients is necessary. Measurement of blood glucose level before and after injecting Insulin and tracking a record in the diary is a very tedious process and a difficult self-morning routine. With the use of e-medicine and telemedicine this process becomes relatively easier.

Services provided by telemedicine for diabetes

Following services has to be provided to the diabetic patients on a regular basis-

- Regular patient visits and personal therapies to be provided.
- Diagnosing the patient and storing the data instantly.
- Monitoring patients according to the regular reports stored as data on the system and treating the diabetic patients accordingly.
- Teaching the skills to treat the diabetic patient themselves.
- Interaction among systems in E-Medicine system.

Sr. No.	Website	Details
1	eMedicine.com	Online clinical medical knowledge base
2	https://www.1mg.com/	Online medical store
3	https://www.medicines.org.uk/emc	Up to date, approved and regulated prescribing and patient information for licensed medicines
4	https://www.drugs.com	Medicine information website
5	http://www.who.int/medicines	-
6	http://www.ema.europa.eu	-
7	https://e-estonia.com/	e-Health Records: nationwide system integrating data from Estonia's different healthcare providers to create a common record every patient can access online. e-Prescription: centralized paperless system for issuing and handling medical prescriptions.
	https://www.medicinenet.com	Online, healthcare media publishing company. It provides easy-to-read, in-depth, authoritative medical information for consumers via its robust, user-friendly, interactive website.

Table 2: *Some of the important websites.*

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