UDGAM VIGYATI, VOLUME 2, 2015, (NOVEMBER)
Online ISSN 2455-2488
Page No. 136-139

"NEW MEDICAL TECHNOLOGY AND LIFE VALUES"

Prof (Mrs.) Smriti G.Solomon
(Principal Indore Nursing College)

ABSTRACT
Innovations in Medical technologies help people worldwide to improve health, save lives, live longer, healthier and more productive lives. Medical technologies improve the efficiency of health care systems through earlier disease detection and more effective treatments that reduce the economic burden of disease and the cost of care. Many individuals who previously may have been chronically ill, disabled, or suffering chronic pain can now look forward to leading normal or close-to- normal lives. There are many new medical technologies that help people to stay healthy and productive for themselves, family and society but we discuss some of them.

INTRODUCTION

Innovations in Medical technologies help people worldwide to improve health, save lives, live longer, healthier and more productive lives. Medical technologies improve the efficiency of health care systems through earlier disease detection and more effective treatments that reduce the economic burden of disease and the cost of care. Many individuals who previously may have been chronically ill, disabled, or suffering chronic pain can now look forward to leading normal or close-to- normal lives.

There are many new medical technologies that help people to stay healthy and productive for themselves, family and society but we discuss some of them.

INFORMATION TECHNOLOGY

Information technology has made significant contributions in medicine and in life of the people and thus helping people to improve life value. With the increased use of Electronic Medical Records (EMR), Mobile Technologies like Tablets and Smart Phones, Telecommunications, Video Conferences benefit the lives of the physicians and patients both in many ways.

ADVANTAGES

1. Send health information instantly to any specialist or doctor in the world.
2. Physicians can now have access to any type of information they need from drug information, research and studies, patient history or records, and more within mere seconds.
3. Save time and money normally spent on traveling to another geographic location.

MEDICAL EQUIPMENT TECHNOLOGY

Improving quality of life and human life value is one of the main benefits of integrating new innovations into medicine. Medical technologies like minimally-invasive surgeries, better monitoring systems, and

UDGAM VIGYATI, VOLUME 2, 2015, (NOVEMBER)
Online ISSN 2455-2488
Page No. 136-139

more comfortable scanning equipment are allowing patients to spend less time in recovery and more time enjoying a healthy life.

- **Smart Phone Ultrasound**

Microsoft, experts at the Washington University in St.Losuis integrate a USB-based ultrasound probe with a Smart phone. It is simple hand sized "Ultrasound device " that enable doctors in to image a patients kidney , liver , bladder , eyes , veins and arteries so that they can easily detect any infections and help in saving lives. This type of device is very useful in developing countries to save the lives of people as doctors without boundaries can use this mobile ultra sound to help out many patients in remote areas.

- **Computed tomography (CT) scanner:**

Modern medical imaging scanners now use X-rays to view the internal structures of the body. Computed tomography (CT or CAT) scanners take hundreds of images and combine them to form a virtual slice through the body. If a sequence of images along the body are stacked (a bit like slices in a loaf of bread), then a 3D image can be created.

- **Magnetic Resonance Imaging (MRI) scanner**

A very strong magnetic field is generated within the large donut-shaped scanner. These magnets make hydrogen in water molecules line up with the magnetic field, when radio waves are applied to the body, energy is produced by the hydrogen and the signal is picked up by a receiving coil or antenna. Small differences in the water content of each body part create different signals. A computer is used to process this information and generate an image of the scanned region.

- **Joint replacements:**

The use of other technology to repair and replace broken body parts using medical implants. Medical implants used to:

  - Repair damage in the spine with artificial discs.
  - Replace faulty heart valves with mechanical designs.
  - Generate electrical signals in the heart using pacemakers.
  - Enable deaf people to hear again via a cochlear implant.

- Artificial Intraocular Lenses: Bring vision back to cataract sufferers with an artificial lens.

In most cases, the natural lens is removed and the artificial lens is implanted during the same surgery. The artificial lens is usually placed within the lens capsule, which is the small "sac" or membrane that once enclosed the natural lens and held it in place.

  - Restore circulation in blood vessels using metallic stents.
  - Enable people to walk via Hip and knee joint replacements.

These medical technologies continue in many different ways to enable people to once again live happy and healthy lives.

- **Robotic Surgeries:.**

In this method surgery is performed by using very small tools attached to a robotic arm. The surgeon is in the operating room and controls the robotic arm with a computer.

- **Bariatric Surgery**

Over weight and obesity are raising medical problems. Weight loss surgery generally results in greater weight loss than conventional treatment, and leads to improvements in Quality of life and obesity related diseases such as hypertension and diabetes mellitus.

UDGAM VIGYATI, VOLUME 2, 2015, (NOVEMBER)
Online ISSN 2455-2488
Page No. 136-139

- **Nanotech Contact Lens:**

Professor Jin Zhang at the University of Western Ontario has developed contact lenses that would change color as the user's glucose levels varied. The new device is made by embedding nanoparticles into standard hydrogel. These particles react with glucose in the tears and change color. It could alert diabetics to dangerous sugar levels without the need for regular blood tests.

- **Mind-Controlled Headband:**

Muse headband, has embedded electrodes that sense brainwaves and translates them to instructions and gives users feedback via a device, such as a tablet, as to how calm (alpha waves) and focused (beta waves) they are. Viewing that data in real time can show if mind is wandering, relaxed, or in a state of intense concentration. Users can change their results by training themselves to control their brainwaves. Its current application aims to improve stress management and concentration.

TELE-CARE TECHNOLOGY

According to Professor Gail Mountain 'telecare' technologies are the Rehabilitation and Assistive Technologies (RAT). Telecare enable individuals to remain independent in homes by providing person-centred technologies to support the individuals or their care takers and help individuals manage their long-term health conditions. Individuals with long-term health conditions have frequent hospital admission due to problems of their illness, which can be avoided with effective and timely interventions through the use of person-centered technologies.

Personalized Self Management System

It is for people with stroke, chronic pain or congestive heart failure. Key to the system is the home-hub, a touch-screen computer that links up to a hand-held monitor which records the activity of the user. Information about their activity is relayed to the home-hub, which allows them to monitor and manage their condition. The device enables the user to check their current health status and provides a reminder of the agreed planned activities facilitates the undertaking of planned activities and provides feedback on progress.

MEDICAL TECHNOLOGY AND THE LAW

As technology in the world of healthcare continues to evolve, rules and regulations concerning its use must be established and adjusted to adapt to the new methods of administering care.

The Health Insurance Portability and Accountability Act (HIPAA and its Privacy and Security Act (2003)

It concerns about the confidentiality of patient information and the steps that must be taken to maintain privacy in digital world. Medical providers and healthcare administration must be careful when choosing to implement new products and technologies into their services, and should ensure that all technologies are "HIPAA compliant" before investing in their implementation.

UDGAM VIGYATI, VOLUME 2, 2015, (NOVEMBER)
Online ISSN 2455-2488
Page No. 136-139

Health Care Reform (March23,2010)

Health Care Reform bill, state the steps that must be taken by hospitals and other care providers to integrate medical technology into their practices.ie the patient protection and affordable care act.

THE FUTURE OF MEDICINE: TECHNOLOGY AND MEDICAL RESEARCH:

Artificial Uterus (or Artificial Womb):

An artificial uterus (or artificial womb) is a theoretical device that would allow for extra uterine fetal incubation by growing an embryo or fetus outside of the body of a female organism that would normally internally carry the embryo or fetus to term. The technology will help infertile couples, enable premature babies to survive, create an alternative to surrogacy when needed.

Anti-Bleeding Gel: Joe and Isaac develop Veti-Gel, it is a cream like substance that will instantly seal a wound and start the clotting process.

Printed Bones: Researchers at Washington State University have developed a hybrid material that has the same properties-the same strength and flexibility- as real bone and are tested on rats.

CONCLUSION

Technological innovations in the medicine has improved the state of global healthcare through technology's integration with areas like disease prevention, surgical procedures, better access to information, and medical telecommunications and increased the life values of the people and will continue to help people to live happy and healthier.

REFERENCES

1. http://www.healthcarebusinesstech.com/medical-technology/
2. http://www.useoftechnology.com/technological-advancements-effects-humanity/
3. http://advamed.org/page/74/value-in-medical-technology
4. http://www.medibank.com.au/bemagazine/post/wellbeing/get-to-know-your-medical-technology/
5. http://www.eucomed.org/medical-technology/value-benefits
6. http://singularityhub.com/2010/01/15/nanotech-contact-lens-monitors-diabetes-by-changing-color/
7. https://en.wikipedia.org/wiki/Bariatrics