ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 9, Issue, 02, pp.47087-47088, February, 2017

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

ENVISIONING MEDICINE OF TOMORROW

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ARTICLE INFO

Article History:
Received 18th November, 2016
Received in revised form
20th December, 2016
Accepted 15th January, 2017
Published online 28th February, 2017

Key words:
Health Science, Medicine, Advanced Concepts

ABSTRACT

The era of elementary medicine where there were primitive methods of health practice has undergone changes by leaps & bounds. Today, the ever changing world of medicine and science is full of ideas and concepts in a mind-boggling array. The inroads of scientific & evidence based research into medical practice in terms of diagnosis, management & even perception of medical treatment are changing the future of medicine.

Citation: Dr. Noopur Managoli, Dr. Mansa Ravath, C. J., Dr. Sujit Londhe and Dr. Shailesh Gawande, 2017. "Envisioning Medicine of tomorrow", *International Journal of Current Research*, 9, (02), 47087-47088.

INTRODUCTION

Ancient medicine had a base that relied on misconceptions, rituals, traditions, and the nature. Various medicinal materials, herbs and so on were discovered but they did not help in curing all the diseases. Things started changing with micromechanics, electronics, and other technological advancements. Earlier the examination of a patient externally was possible, thanks to the X rays now, that the internal organs also can be examined[1]. Enormous changes in the technology, both in medicine and health care are heading our way. These will have a huge impact on the medical professionals, patients, researchers, medical students and consumers[2]. Innumerable areas of medicine are going to shape the future of health care in the next few decades. These can be roughly categorized into two segments or divisions. The first one includes the medical trends underway today, and the second one includes those that are many years away or are still in progress, but are foreseen. These various technologies should be purposefully and consciously re-designed and studied meticulously[3]. The most dreaded disease is cancer today. Novel methods that are beyond chemotherapy, surgical management and radiotherapy that will regulate the patients immunity to combat cancer ae being developed. Research on DNA directed vaccines which target cancer cells to eradicate tumors and help in reducing their recurrence rates are underway. One has to be all set for the future[4]….

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Medicine tomorrow

Dr. James Canton predicts that the various medical innovations will be a common place in the next two decades[5]. The way a physician practices is changing and its only accelerating. Over the last few years the capital money has moved on an exclusive focus on developing new therapies to portfolio that now has HCIT (Health care information technology) and various other service companies[6]. Sir Ray Kurzweil says that technology is speeding up at a lightening pace. It was concluded by Sir Peter Thiel, that technology alone will not solve the issues that the health care sector is facing globally today. And also, the human touch solely will not be sufficient any more. Thus, this demands for a meticulous balance between the use of disruptive innovations, yet keeping a balanced human interaction between the patients and health care givers[7]. A few of the developmental aspects are enlisted as follows.

These are those medical advancements that can be a reality of tomorrow.

- **Gamification of health:** This could be a combination of fun and games incorporated into many health care apps. This will create a positive impact on the patient and can help to keep a track of daily activities of a patient which can improve health care.
- **3D technology:** This magical technology can make revolutionary changes in the field of medicine. This technology will manufacture medical prostheses, stents, organs, equipments, drugs etc.

- **Machine man**: Skeletons will aid in the series of complex interactions between man & machine. Such machines will be challenged to design such a device that will almost mimic the hand and leg movements of an individual. Also, this will gradually create a communication between brain and the exo-skeletal prostheses.
- **Changes in the medical curriculum**: Here the use of textbooks can be replaced by digitalized innovative technology. This will help generate a better understanding between the medical students and health care. Also there will be an easy access to the current medical information.
- **Genomics and body sensors**: Analyzing the DNA might become the gold standard while prescribing any therapy. Here, data regarding the patients metabolic background should be gathered. Body sensors will comprise of trendy electronic clothing coupled with sensors, such that they don't hamper ones daily activities[3].

Some other futuristic events in medicine could be production of artificial organs, improved senses, synthetic immune system, all cure capsules etc[8]

Robotics and Health care

Microbots to personal assistant robots, aiding in patient care, are transforming the face of health care. As per the Da Vinci Surgical system approved back in 2000, the surgical system has conducted not less than 20,000 surgeries and have carved a niche for robotics. Magnetic robots perform various operations like plaque removal from the patients arteries. Several other robots help in day to day lives of patients like helping them to eat, walk and so on. It is expected that in the next few years these robots will enter the health care sector, carrying a loaded tray of medications and also will be a replacement to 3 full time employees on an average, reducing the labor cost[9]. Bacillus Calmette Guerin (BCG) is a vaccine used for Tuberculosis 100 years ago, now this vaccine seems to be a solution for this problem too. During an announcement, it was said in the 75th Scientific sessions of American Diabetes Association that people with type 1 diabetes are going to receive this vaccine. Patients injected with this vaccine previously showed that the T cells were destroyed and also few began with secretion of insulin. Now the goal is to make a long lasting medicinal response with people of type 1 diabetes and also for more advanced and severe diseases. Sir Robert Sobel, assistant professor, North Western University is skeptical because methods to repopulate or to preserve the beta cell mass need to be formulated. He added that the test of time will speak more about this vaccine[10].

Evolving and Revolving medicine

Noted by Sir Joseph Pizzorno ND, founding President of Bastyr University said in a recent interview that, Naturopathic medicine, Integrative medicine and Functional medicine have made an attempt to revise the Western medicine. Sir, James Maskell, the host of the Evolution of Medicine summit postulated in a recent interview that Western Medicine has a slow pace because the required medical structures for acute and chronic diseases are different and infact opposite. He also further stated that prompt care is given for acute disease after its onset, whereas in case of a chronic disease a proactive approach has to implemented. He hence interpreted that it is not only necessary that there should be an evolution of medicine, but medicine has to revolve too. We should allow the conventional medicine to do what it best does and also introducing newer options based on newer paradigms too, simultaneously[11].

Conclusion

The advancements in the most vital field of our times, healthcare, will bear fruits in unimagineable measures in the coming days. The use of technology must be made in a way where the quality of service is not compromised in the pursuit of cost effective ways. The importance of these merits reaching all the strata of society where affordable healthcare is available for all should be underlined & a reality in the near future.

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