Student Ethical Viewpoint Paper

The Need for Preparing Medical Students to be Digitally Responsible in Addition to being Socially Responsible

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INTRODUCTION

Doctors must be socially responsible when it comes to treating patients. After Tim Berners Lee built the WWW, the way we shared information was revolutionized. The Guy from Harvard, better known as Mark Zuckerberg created the first social network from his dorm room, Facebook as we know today captivated us like nothing has ever before. The internet and social media have shaped the world in a completely different way. As you are listening me speak, one more discovery in the world would have taken place. We are in the peak of our quest to find new things.

Omar N Breadly said - "Ours is a world of nuclear giants and ethical infants." We can very well replace the word 'Nuclear' with 'Technological' considering the pace with we are bring in new technologies in our world. With all these advancements one question remains unanswered- How can we teach Medical students to be more ethically responsible while handling these new Technologies. I have had the privilege to be born in an era stated by many 'as the greatest one to be alive' and will be sharing my thoughts on how technology is shaping a medical students and a doctors life and how can we address that.

The smartphone usage of a college student is about 4-7 hours in a day [1]. This data includes the medical students as well. We, the newer generation of doctors will have technology deep rooted in their daily life. One way in which the new technologies are brought out in the market is 'Bio-Medical Devices'. We can consider that the medical innovations industry has 4 stakeholders- Manufacturer, Regulator, Provider, and Consumer. In future the Students would play the role of the Provider of the innovation. In other words, they would guide and help the patient to choose what's best for him.

The Biomedical devices bring ethical dilemmas with them. Let's take the example of "Electronic Medical Records".

Consider this- You are at the hospital. Using your Identity card the Receptionist access your previous medical records which contain information about the treatments you have received at various health facilities. This record is made available to the doctor whom you are going to consult. As the doctor elicits your new history he/she has in front of him/her all the necessary previous health records. Think for a moment how easier would it get to prevent misinterpretation of half maintained medical records and how creating and maintaining such a system would ease out the work of a medical practitioner? This is not as wonderful as it may sound to you. Remember the Harvard Guy that I spoke to you about in the beginning of my speech? I am sure you would also remember the various Law suits against him because he breached the data privacy laws.

Complete Digitalization of Records would make them vulnerable to the threat of being hacked or misused by people not authorized to that data. The privacy of the patients can be compromised. Mark Zuckerberg said "I think the mistake we made is viewing our responsibility as just building tools, rather than viewing our whole responsibility as making sure those tools were used for good." Thus only creating data privacy laws would not suffice. We as medical students and future doctors

need to learn to handle this data responsible. The concepts of medical informatics can be included in the curriculum to help the students be more familiar with the storage, retrieval and interpretation of the EMR [2]. This would help uphold the principles of `privacy` and `confidentiality`.

When the CDSCO made the Drugs and Cosmetics Act of 1940 they had not foreseen that in less than a century's time Medicines would be dispensed by online pharmacies as well. In an E-pharmacy a prescription is uploaded, and based on that drugs are supplied. To prevent dispensing of drugs on Fake/Photoshoped prescriptions, E- Prescriptions can be given by the doctor and directly uploaded on the E-Pharmacy website. But on the other hand the patient's autonomy in choosing his/her own pharmacy is lost. This might also pave way for E-pharmacies to create monopoly by giving incentives to the doctor. Moving on to another problem posed by E-Pharmacies. Let's suppose you have just bought anti-hypertensive medication. While surfing other websites you see an advertisement for a BP measuring instruments and other products that could be used by a hypertensive. The case would have been different if you were looking a smartphone and ads of Mobile phone accessories were shown. Here your personal data is being given to a 3rd party seller which is using it to show ads of products. Again the issue of breech in personal data privacy is being highlighted.

Contribution of artificial intelligence to diagnosis and treatment has generated ethical dilemmas over the extent of physician reliance on machine intelligence. Artificial intelligence has been used in Radio diagnosis [3-6], Pathology [5], Management of medical records [6] etc. Ethical and regulatory challenges that surround AI in healthcare, particularly privacy, data fairness, accountability, transparency, and liability [7]. Modernized regulatory approval—in the form of ad hoc guidance—is needed to maintain the safety and efficacy of Machine learning in Medicine (MLm) based algorithms. As more diagnostic and therapeutic interventions become based on MLm, the autonomy of patients in decisional processes about their health and the possibility of shared decision-making may be undermined. This would happen, for instance, if reliance on automated decision-making tools reduces the opportunity of meaningful dialogue between healthcare providers and patients or if payers consider MLm recommendations as a precondition for reimbursement and refuse to cover treatments when the MLm recommends against them When using such diagnostic tool the doctors themselves should grasp at least the fundamental inner workings of the devices they use. The students must know more than the machines so they can recognize mistakes and inaccurate information in the computer systems and ensure that decisions made are relative to treatment goals. This would prevent `non- maleficence`. Via proper methods the curriculum should teach students to respect the patient's autonomy at all times over and above all technologies.

The advent of newer and improved kind of treatment options coupled with demands of the patient to be treated faster, have compelled doctors to use diagnostic tools which can be at times costlier. It should be taught to us that the costs of using such modalities should be discussed before performing the tests and not after. "How many of you know about Dr. Lal Path Labs??" It is of India's highest valued and growing diagnostic chain. I had read a very interesting case study about it. During the last three years they have not increased the cost of performing diagnostic tests even with the inflation of 4.14 %. Their CEO has stated that at the heart of this miracle lies improving operational efficiencies and using technology to cut on costs. Thus technology will also benefit the patients. The doctors need to take care that their purchase of health care technology enhances patient care more than it drives up cost. It should be imbibed in the student's mind that the patient's welfare should be the first consideration while making decisions, which is consistent with the principles of `beneficence` and 'autonomy'.

I would like to share with you the reality of Medical students of our generation. From the first year onwards, students sometimes lose interest in dissection. Earlier they still had to go to the Dissection hall to learn anatomy. But nowadays they simply use mobile phone applications and watch videos for clearing anatomy. The extent of availability and accessibility of internet has

increased so much that student's dependency to attend lectures has been decreased. If this trend continues clinical examination would also be learnt over the internet and REAL Doctor patient learning would reduce beyond imagination. There would be a whole generation of doctors who rely on internet over books to read about disease diagnosis, watch educational videos instead of attending workshops thus losing out on 'hand on experience'. This trend can be extrapolated to Future Doctors as well. The ease of learning a new procedure online will increased. This can lead to the physician trying out the new procedure on his patients. Here before the physician applies the newer technique, he should have take appropriate offline training, make full disclosure and discuss the risk/benefits and the alternatives of the procedure with the patient. To prevent this from happening, right from the UG level the Medical colleges should therefore encourage medical students to attend conferences and seminars and take hands on training instead of purely relying on E learning platforms.

As the saying goes `with more power comes more responsibility`. In this technological world if we teach medical students the ethics to handle the great power of heath IT, we can surely achieve the objective of Universal Health Coverage.

RECOMMENDED READING AND REFERENCES

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