Category: What do you think will be the biggest change in medicine by the time you graduate, and why?

Title: How long till the wireless ward?

It's true; graduation is getting closer. Some days I think it may be too close- it's only one more year until I am a doctor. So this title for medical students is pretty challenging for me; it isn't like I have three or four years into the future to dream about; graduation, though a year away, is a present and real thought for me.

So, if I cast my mind forward a year, to what I would want to see, to what I think would help patients while driving down costs, to what I think I could be confronted with on my first day as an intern and asked to master, well for me the answer is simple: the biggest change will be the further use if technology to stream line patient care.

Technology bestows many advantages in daily life in terms of speed of access to information, the volume of information available and cost reduction. Technology and the world surrounding it are no longer something mysterious; we know it and our patients know it. Hospitals on television programmes always have the most up to date technology available to their 'staff' and our patients sometimes wonder when they come to the hospital why we don't have that 'cool gizmo they saw on Grey's Anatomy last week'.

Technology is a booming industry which continues to develop at a rapid pace and many healthcare experts believe enhanced technology will be a fundamental cornerstone in transforming our current healthcare system to better serve our patients[1]. Two methods which I believe may become available by the time I graduate would be the use of electronic health records and the use of telemedicine, which I shall discuss for the remainder of my essay.

Electronic health records (EHR) is a major focus of research in healthcare informatics at present and appears to fulfil a need within our current healthcare system as it can be used between primary, secondary and tertiary healthcare groups1. EHR is defined as a 'repository of patient data in digital form, stored and exchanged securely, and accessible by multiple authorized users'[2] and is used in lieu of the traditional hand written method; it is used primarily for the purpose of supporting 'continuing, efficient and quality integrated health care'[2] by setting objectives and planning patient care, documenting the delivery of care and assessing the outcomes of care[2].

Simply put, as each member of the MDT sees the patient, they add their intervention to the computer where it is accessible to all other caretakers of the patient. Given the fragmented nature of healthcare where many departments take care of the patient under the heading of multidisciplinary team (physiotherapy, occupational therapy, nursing, medical) and the large volume of interventions that occur, it makes sense that each member of the team be able to access the patient's notes from anywhere within the hospital with ease[1].

Currently, if the occupational therapist wants to know if a patient is fit that day for an intervention, they must go up to the ward and find the chart or nursing notes before they are able to determine if they should treat the patient or not. This takes up time that the occupational therapist may have spent with another patient and reduces productivity and patient progression. However, by creating patient files where all their notes and results go, each member of the team is aware of the patient's

current state of progress, from entry to discharge planning. This will enhance team communication and allow decisions to be made and interventions planned quicker, improving patient outcomes and health.

This method of patient data collection can follow the patient by into the community as well for enhanced benefits. As already stated EHR can be 'securely exchanged'[2] and thus could be used as a means of 'real time communication'[2] between the primary care team (usually the general practitioner) and the tertiary care team (MDT) and vice versa. This will improve communication and continuity of care for the patient, further optimising their health and quickening their return to normal life.

The other method of technology that I think may be introduced before I graduate and which I believe would create significantly beneficial change is telemedicine. Telemedicine is defined as 'is the provision of medical care remotely by means of audiovisual technology'[3]. Technological advances such as high resolution cameras and stable broadband internet have helped to make telemedicine an increasingly common mode of healthcare delivery in a diverse number of fields[3]; the most convincing evidence on the efficacy and effectiveness of telemedicine was given by some of the studies on teleradiology (especially neurosurgical applications), telemental health, transmission of echocardiographic images, teledermatology, home telecare and on some medical consultations[4]. One such benefit is the ability of telemedicine to overcome geographical barriers, allowing access to experts at one end of the country to treat a man in a rural hospital at the other end of the country with their specialised knowledge[3].

Further to this, telemedicine also has the potential to substantially reduce health care costs. For providers, using telemedicine may be more efficient than seeing patients in brick-and-mortar offices, since it reduces the time and space needed to run a medical practice[4]. It may also reduce socioeconomic barriers, allowing patients to attend clinics virtually, ensuring they don't miss appointments and reducing waiting lists[3]. For patients, telemedicine can reduce travel expenses and the opportunity costs associated with obtaining care, such as wasting time waiting to be triaged in accident and emergency as well as reduction in missed hours or days of work[4]. It is thought to be of such benefit that Aviva healthcare insurers[5] in Ireland have added three teleconference consultations with general practitioners as part of their insurance scheme so this technological advancement as already begun to make its way into Irish healthcare.

Technology is a part of the modern world and thus it is not a surprise that slowly but surely, it has begun to affect the way we practice medicine and run our health system. While we cannot forgo the core foundations of knowledge and clinical skills on which medicine is based, we need to move with the modern ideals to provide the best care for our patients. And as more wards become wireless, the chances that I will walk in as an intern next year and be handed an Ipad to pull up the patients for rounds increase ever exponentially.

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