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Medical Errors

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Abstract

Overview: Time of Death: 5:07 p.m. – Proceeding the solemn afternoon of February 22nd 2003, the Santillian family listened on as doctors told them that their cherished loved one was officially pronounced brain dead and would soon have to be taken off life support. Two weeks prior to this, seventeen-year-old Jesica Santillian received the thrilling news that she had finally been matched with a heart-lung donor and would be admitted to Duke University Medical Center in early February for a double-organ transplant. After years of living in pain brought on by her failing organs, Jesica was supposed to be one of the lucky ones, that is, until an ill-fated call received an hour after the new organs had been put in turned her luck upside down. The call was from a technician in the immunology lab saying that something had gone terribly wrong; Jesica's blood type, type O, did not match the blood her new organs, which were type A. What that meant was that Jesica's life was in serious danger because the antibodies in her blood would shortly start attacking and destroying her new organs. Two weeks and an odds-shattering second set of donated organs later, the near death teenager's family said their last goodbyes as the medication that kept her heart going was discontinued and her heart took its last untimely beat seven minutes later (Kopp 1).

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Santillan's story is just the sort of catastrophic event that relentlessly reminds our society of the tragedies associated with the growing problem of medical errors. The National Academy of Sciences' Institute of Medicine (IOM) reports that there as many as 44,000 to 98,000 deaths a year in hospitals from medical errors; an astonishingly high number that is generally given far too little media attention (Weiner 1). Of course, it is important to realize that doctors and

physicians are people too and are just as susceptible to making mistakes, but where is the line drawn? At what point do we decide that too many lives have been damaged and lost from errors that were deemed preventable? The answers are right here and now.

The fact is that when human lives are at stake, there should be no room for error, especially preventable errors. However, it is important to realize that practitioners are not solely to be blamed for their mistakes, but rather a faulty system that has set the stage for their mistakes by not implementing the best possible strategies available to prevent errors. In the words of the CEO from Duke Hospital, Dr. Fulkerson, "The vast majority of time when medical errors occur, they don't occur because the people are bad, but rather they occur because organizations haven't developed yet the kind of systems that we need to be able to catch errors and prevent errors. Medicine is a very human endeavor, and humans are fallible" (Kopp 2). In essence he is saying that we sometimes forget that doctors and nurses are humans who make mistakes from time to time, but furthermore, Dr. Fulkerson could not make his and my own position any more clear: It is time for the healthcare system and our society as a whole to start focusing more on patient safety and implementing the best techniques available to reduce medical errors by owning up to the mistakes being made and actively learning from those mistakes.

Accordingly, this paper will examine (1) the definition of a medical error, (2) the implications associated with the reporting of medical errors, (3) the current systems that have been implemented to reduce medical errors, and (4) the difference that both the doctor and the patient can make in the outcome of their healthcare. Through each of these topics I intend to inform the reader about the topic as well as advocate for change. Specifically, I will argue that, in order to reduce medical errors doctors should be influenced to report their mistakes so the most efficient

systems can be put in place to help prevent the most prominent errors. Also, I will evaluate the pros and cons of current systems, specifically electronic health records, and advocate for playing an active role in one's healthcare.

Definitions and Concepts

So what exactly is considered a 'medical error'? By definition, a medical error is an "error or mistake committed by a health care professional, which results in harm to a patient" (1). This includes errors in diagnosis, errors in the administration of drugs and other medications, errors in the performance of surgical procedures, as well as errors in other types of therapy, use of equipment, and interpretation of laboratory findings. For clarification purposes, medical errors are not to be confused with malpractice. Specifically, medical errors are the viewed as honest mistakes or accidents, whereas malpractice is the result of negligence or criminal intent in regards to the patients health ("Medical Errors"). Therefore, the important element to take away from this definition is that medical errors are inadvertent. Indeed, many patients are accidentally injured and even killed at the hands of their doctors, who've failed to double check and make sure everything is correct before going forth with procedures, but, nonetheless such mistakes are neither planned nor intentional. They are rather the result of a 'slip' in a routine behavior that has been done correctly numerous times before (Wachter 90).

In comparison to a 'mistake' that is usually the outcome of an incorrect choice due to insufficient knowledge or lack of experience, a 'slip' is an unconscious lapse in the performance of some repetitive procedure or autonomic behavior (Wachter 88). For example, imagine that you set out on a Saturday afternoon to buy groceries from a local market that you pass everyday on your way to work but instead drive past it because you are used to driving to work five days a week

out of the seven. This slip happened because right before you got to the market your autonomic behavior, or rather 'autopilot', set in and your actions were dictated by what you were used to. In most cases slips like this are not a big deal because we usually "snap out of it" and are able to fix our fault. However, in medical situations, slips can be the difference between life and death. Moreover, slips occur most often when we put an activity on autopilot in order to deal with the most current sensory inputs such as dealing with emotional upsets, fatigue, or stress; all of which are emotions that define the medical environment (Wachter 89).

Consequently, whereas most people associate medical errors with untrained or inexperienced caregivers, most errors are actually made by well-trained and experienced caregivers who perform their tasks so well that they have almost become second nature and thus autonomic tasks. Therefore, doctors and nurses are most likely to make a slip doing something they have done a thousand times like asking a patient if they have any allergies before prescribing a medication or, in opposition to Jesica's Santillians case, verifying if the donors blood type matched, because such tasks have become so routine for them (Watcher 90). So when that routine fails them in an environment that does not put an emphasis on actions that are suppose to be habitual, errors occur and individual patients and their families suffer. How, then should we respond to the inevitability of slips? Well, the first step is to gain a full understanding of the depth of the problem.

The Problem

When healthcare leaders consider the affects of medical errors, the first issue that always comes to mind is fatality rates. As mentioned before, between 44,000 and 98,000 Americans die each year as a result of preventable medical errors. The lower estimate is based on studies from

hospitals in less populated states including Colorado and Utah, whereas the higher estimate is based on the results of studies done in New York (Kohn et al. 37). Outrageously, even when using the lower estimate, the deaths due to preventable medical errors exceed the numbers attributable to motor vehicle accidents, breast cancer, and AIDs (Swaminath 1). Far too many deaths that could have been prevented are occurring and not nearly enough is being done about it. Every day you hear about fundraisers for increased research into breast cancer and aids, but when is the last you heard about fundraisers to better the quality of the healthcare system as a whole? Our society, especially healthcare leaders, are not informed enough about the downfalls of our healthcare system and not nearly informed enough about the negative consequences that range far beyond fatality rates. For example, consider the financial costs of such mistakes.

According to the national report, 'To Err is Human,' published in 2007 by the Institute of Medicine, the total national costs including lost income, lost household production, disability, and healthcare costs of preventable injuries are estimated to be between $17 billion and $29 billion. Of this estimate, about fifty percent is from the healthcare costs alone (Kohn et al. 27). For a country that spends approximately $2.1 trillion on healthcare yearly, it is alarming to think that a large portion of it is going into mending the mistakes of the system rather than actually providing health-improving services (Swartz 1). Essentially the main issue with this is that dollars spent on having to counteract such adverse events are dollars that could be put into finding ways to prevent them in the first place. Quality of Healthcare in America, a committee who contributed to developing the national report, supports this interpretation, arguing that "It is impossible for the nation to achieve the greatest value possible from the billions of dollars spent on medical care if the care contains errors" (Kohn et al. 3). Hence, due to the vast occurrence of

medical errors, our nation is clearly not taking full advantage of all the dollars it is putting into the healthcare system.

However, these shocking statistics are only just the tip of the iceberg. The major issue related to the fatality and financial statistics just mentioned is that medical errors that do not result in death or are not costly enough to be recognized are usually the ones ignored and unreported. Thus, every year, it is estimated that millions of patients are the victims of medical errors and mistakes that go unrecognized because there is no formalized reporting system that makes it mandatory for healthcare providers to disclose their errors. According to the Encyclopedia of Health Services Research, a growing number of individual states have implemented reporting systems of various kinds, however, "the number of reports filed has ranged from fewer than 20 in a year in some cases to tens of thousands in others, indicating the severity of the problem of underreporting" (Weiner 4). This finding is just one of many that illustrate how the numbers related to adverse medical errors are extremely underestimated and how the problem is much more relevant than our society and healthcare providers seem to recognize.

As Dr. Weiner, an Associate Professor of Medicine and Pediatrics at the UIC College of Medicine, highlights, the main reason that so many errors go unreported is most likely due to the mindset physicians are taught to have when they progress through medical school (3). As most people know medical school tends to be very competitive and those who go choose to go into it often have to be strong-willed and insusceptible to the hardships and losses that are involved when dealing with life and death situations. Thus, the students that make it through are often highly praised and respected for their hard work and our society expects them to be experts in their respective fields. However, this is often not the case. But nonetheless, due to how our

society views physicians, they are often hesitant to personally acknowledge errors in a profession that emphasizes perfectionism (Weiner 2). This perception is reinforced in the education of doctors and often contributes to the psyche that makes doctors successful. However, if medical errors are to be decreased, this mentality has to be altered. To do this we must consider the role that medical lawsuits play in the culture of silence around making medical errors.

Consider, for example, if your mailman puts your mail in the wrong mailbox. Almost certainly, you wouldn't think twice about it. Basically, it is not a big deal if a mailman makes a mistake like this because he or she does not have to worry about repercussions such as malpractice litigation, disciplinary action, and loss of hospital privileges like doctors do when they make mistakes. Consequently, the fear of having to deal with these repercussions is just another reason why doctors are often hesitant to disclose the errors they make (Weiner 2). The issue of malpractice litigation is slightly beyond the scope of this paper, yet is still an issue that needs to be considered because it negatively affects the chances of doctors confessing to the mistakes they make. Specifically, when a doctor makes a mistake, whether it was intentional or not, they risk not only their job, but also their reputation and their confidence as a doctor. Thus, from a doctor's perspective, revealing that a mistake was made could potentially do much more harm than good.

Interestingly, in a 1981 article published in the Journal of the Arkansas Medical Society, a physicians' fear of malpractice litigation was formally termed "paranoia malpracticum." It was found that in response to this fear, over half of all physicians admitted practicing "defensive medicine" so as to avoid or minimize the risk of legal action. Such defensive practices include limiting practice by not performing certain high-risk procedures, ordering medically unnecessary

tests to document clinical judgments, and even turning away patients seen as potentially litigious (Fulero 2). In the long run such defensive practices in response to increased legal action potential could limit the overall care that doctors are able to provide to their patients. Therefore, it could, in reality, be more beneficial for certain restrictions to be put on the availability of malpractice litigation as an option for patients. This, in turn, would influence doctors to not only give their patients the best possible care but also allow them to admit to their mistakes without the fear of being reprimanded.

In general, a doctor chooses his or her profession and recognizes that he/she has to take those risks, but they are people too and are going to make mistakes whether they are penalized for them or not. Therefore, it is better for them to be encouraged to admit their mistakes for the better of our healthcare system as a whole. Overall, errors no matter how big or small cannot be ignored. They must be recognized, their cause's analyzed, and preventative measures taken in order to create the safest healthcare system possible. This inference is especially supported in the article from the Indian Journal of Psychiatry, "Medical Errors – I: The Problem" written by Dr. Swaminath and Dr. Raguram. Both doctors work in the Department of Psychiatry at the Kempegowda Institute of Medical Sciences and have done much research in the area of medical errors. Based on their knowledge of the topic they assert that, "We should try to understand the causes of errors, to install an informative reporting system of adverse events as an essential prerequisite, to measure them, and to choose the best approaches for minimizing the harm to patients" (112). Essentially they are saying that we need to understand the main causes of adverse medical errors before we can fully understand how to prevent them. However, the only way that this critical information is going to become available is if our society stops focusing on blaming doctors and physicians and rather focuses on making a collaborative effort to encourage

doctors to admit their mistakes. This would, in turn, encourage an increase into research on ways to that could reduce the most prominent errors and subsequently the healthcare system could become a safer place for all.

Taking a Technological Approach

Until that time comes though, healthcare providers need to focus on implementing the best systems available to increase patient safety. In todays ever-increasingly technology dependent world, the most obvious solution seems to be that we should turn to computerized systems to help reduce human error. According to Professor Abha Agrawal from the Department of Clinical Medicine and Medical Informatics, "Systems that use information technology (IT), such as computerized physician order entry, automated dispensing, barcode medication administration, electronic medication reconciliation, and personal health records, are vital components of strategies to prevent medication errors, and a growing body of evidence calls for their widespread implementation" (681). To complement this assertion, she also mentions many studies have shown that Hospitals with automated notes and records, order entry, and clinical decision support have fewer complications, lower mortality rates, and overall lower costs compared to hospitals that don't take advantage of such systems (Agrawal 682). Based on these findings, it would seem as though such systems are the obvious answer to improving our healthcare system. However, each has its own positive and negative characteristics.

One specific IT system that has made its way into various hospitals and clinics across the nation is the Electronic Health Record. In contrast to the usual paper based, hand-written medical records, Electronic Health Records, usually referred to as EHRs, are complex, computerized health information systems that allow for the digital storage, retrieval, modification, and in some

cases sharing of medical records (Harrington 32). It is essentially a database with an organized

collection of various patients' medical records that can be accessed by any kind of health care

provider including hospitals, physicians, outpatient labs, and pharmacies (Electronic Health

Record). Such a system has the potential to improve the quality of care doctors give their patients

because the information they need is right at their fingertips. For example, if it was integrated

nationwide, you could go into any hospital for an emergency and the doctor would be able to

quickly look up your medical records from a compiled list of any previous doctor, pharmacist,

lab technician, or other medical personnel instead of relying on you or your family to recall your

complete medical history.

Another positive aspect about EHRs is that they allow healthcare providers to see information

like what medication the patient has been on. Thus, if they have any allergies or can't take a

certain medication because it will interfere with another, the doctor will be electronically alerted

before being able to prescribe the new medication to them. Also, with new medications coming

out almost constantly, it is impossible for physicians to keep up with all the changes. Therefore,

EHRs have built in features that can provide all the most up to date information such as new

guidelines for treating conditions, medications the patient might be eligible for, or even

information about medication recalls at the same time that the physician is seeing the patient

(Electronic Health Record). As medication becomes as powerful as it has in the last decade or so,

having this information so readily available through technology is key to improving the quality

of care doctors give their patients.

This system, however, is not without its challenges. In recent discussions of its effectiveness, one

particular controversial issue has been whether the EHR would actually inadvertently cause more

medical errors due to its technological complexity. In the article, "Safety Issues Related to the Electronic Medical Record," the authors specifically assert that, "[the EHR's] many functions may be designed by people who do not know or fully appreciate the complex interaction of the human-computer interface and the consequences of designs that may, in hindsight, have impaired patient safety" (32). In essence, they are arguing that doctors and physicians are not computer technicians and therefore, it could more harmful than helpful for them to be working with complicated computer programs in an already very complex and hectic work environment. So to avoid this they conclude that healthcare leaders need to appreciate the complexities surrounding EHR's and understand the safety issues related to them before adding them into the work environment (Harrington 32).

On one hand, I can agree with their argument that the complexity of the Electronic Health Record could potentially bring an array of new errors into the medical field due to its complexity and that healthcare providers need to appreciate this fact. But, on the other hand, I do not agree that the medical errors caused by the unqualified use of the system actually outweigh the number and severity of the medical errors that they prevent. Specifically, consider the last time you received a hand-written prescription from your physician. The likeliness is that it looked more like hastily scribbled business note than a prescription for an important medication. It probably did not seem like a big deal at the time because you most likely received the right medication, but take a second to consider this statistic from TIME magazine: "Doctor's sloppy hand writing kills more than 7,000 people annually" (Caplan 1).

Furthermore, with the number of prescription drugs on a rise, the probability of different medications having similar names is at an all time high. For example, consider the antidepressant

Zyprexa and the antihistamine Zyrtec; the anticonvulsant Cerebyx and the anti-inflammatory Celebrex; the mood stabilizer Lamictal and the antifungal Lamisil; and the list goes on (Wachter 69). Hence, as the number of medications increase, the amount of accuracy needed in prescribing the correct one also increases. In reality, technology is the really only way to provide this high level of accuracy. It would essentially eliminate many of the errors that occur when pharmacists misunderstand or misread medication names or dosages conveyed messily on paper.

In general, of course there are going to be implications with integrating complex technologies into an already hectic work environment. However, these implications do not nearly compare to the number and severity of the medical errors that EHRs would ultimately prevent nor the extraordinary capabilities they introduce into the healthcare system. Thus, I would strongly recommend integrating Electronic Health Records into the healthcare system to increase patient safety as well as increase the efficiency of doctors by making important patient information and their constantly health records much more accessible.

The Patients Role

After all is said and done though, the one thing that can make a significant difference in the outcome of a patient's healthcare is the role that the patient chooses to play in it. All too often we only consider what the doctor could have done to prevent the error instead of taking a moment to consider what things we could have done or questions that could have been asked to possibly assist the doctor. For instance, Carol Kopp, who covered Jesica Santilian's case as a reporter for CBS, commented that, "from the donor to the recipient there must have been at least a dozen doctors and nurses from Duke who were involved…so why did not one among them see that the donor didn't match the recipient?" (1). Of course she makes a good point that at least one of the

doctors should have made the effort to make sure that the blood type matched, but what about Jesica and her family? Could they have done anything that would have prevented the error from occurring? Of course the error was not their fault, but nonetheless the question has to be asked in order to determine the best way to keep history from repeating itself.

Predominantly, what too many individuals fail to realize is that doctors are dealing with the complications of various other patients' as well as their own personal responsibilities. Therefore, remembering to check and double check everything they do can often become very difficult when their time is split among various responsibilities and consequently communication between doctors often becomes limited. As for Jesica, her organ transplant was a high priority, but it was not the only priority that her doctors had to take care of. Thus, it is a great possibility that if Jesica and her family were able to play a more active role in her healthcare by constantly interacting with her doctors the error could have been avoided. Unfortunately though, a language barrier made it difficult for the family to make a large contribution to their daughter's healthcare. But, nonetheless, it is still possible that playing an active role in one's health care could positively affect the outcome.

In 2007, The Agency for Healthcare Research and Quality emphasized this concept in an article published in the Daily Press titled, "How to Avoid Medical Errors: Medical Errors Can Occur Anywhere in the Healthcare System." In the article, which was targeted to the general public, the authors offered twenty different tips on how to avoid medical errors. The very first tip advocated is that, "the single most important way you can help to prevent errors is to be an active member of your health care team" (1). They go on to explain that this means taking part in every decision about your healthcare as well as having your doctors explain every step of a procedure before it

is done. They reassure this assertion by noting that research has shown that patients who are more involved with their care tend to get better results ("How to Avoid Medical Errors" 1). Nonetheless, this concept makes a lot of sense because being fully informed eliminates the uncertainty between the doctor and the patient and also allows the doctor to take a step back and review the procedure. This could potentially allow the doctor to catch any possible mistakes before they turn into full-blown errors.

I wholeheartedly endorse playing an active role in one's healthcare because I personally found out the hard way what it is like to fall victim to a medical error that I know I could have probably prevented. The error occurred about six years ago, shortly after the time I was told that I would have to get braces. Before I got the braces on I had to get an x-ray of my mouth and quickly afterwards the doctor noticed that I had a very strange abnormality; I was missing ten teeth! Six of the teeth included my wisdom teeth and a set of molars that I did not need, but the other four were the second teeth to baby molars that had yet to fall out. This meant that when they fell out I would have to get implants in which they would include inserting a metal screw into my jaw and attaching an artificial tooth to it. This would not occur until my jaw stopped growing in my early twenties but the thought of someone drilling into my jaw made and still makes me cringe. Fortunately though, the doctor insisted that the teeth could last for many years and that I may not ever have to worry about getting implants. That was until he decided that one of the teeth had to be pulled for orthodontic purposes.

At the time, I could not attend my regular dentist because he did not perform tooth extraction. So instead he recommended an oral surgeon that I should go to. A week later I was sitting in the oral surgeon's waiting room absolutely dreading what would come next. Unfortunately, I had no idea

how much worse it would get. All I really remember is sitting quietly in the doctors' chair nodding as what he was saying to make me feel more comfortable as he and his assistants moved about the room in preparing for the procedure. Before I knew it the procedure was over and I was sitting in the room alone and dazed. After a couple minutes I began to become quite confused as I realized that the gauze in my mouth was not positioned where the tooth was suppose to be extracted. Moments later one of the doctors' assistants came back into the room and informed me that they had pulled the wrong tooth. Specifically, they had pulled the tooth on the bottom instead of the one on the top. Moreover, the tooth they had pulled was one of the four baby teeth that I did not have a second tooth for. So to this day, I still have the empty spot in my mouth to remind me of an error that I could have prevented if I decided to play an active role in my healthcare and asked the doctor to explain what he was going to do before he did it. If I had known what tooth he was going to pull I could have easily told him that he was mistaken and the error would have never occurred.

Admittedly extracting a tooth is not as complicated as an organ transplant, but sometimes it is the little things that matter the most. If Jesica and her family were able to stay on top of her health information, especially knowing the complicity of the surgery she was going to have, they could have helped to make sure that something as simple as checking that the blood type compatibility was taken care of. Of course, there are some things that are completely out of the patient's control, but in cases such as mine and Jesica's, you do not have to be a doctor to ask questions about and learn about the procedure your having. Because your life may depend on it, it behooves each and every person needs to be the main guardian and spokesperson of their health. It is just simply not efficient to allow a doctor, who probably has umpteen other patients to worry about, to be in complete control of your health. Thus, constantly asking questions and being an

active member of your healthcare team could very well be another answer to reducing the amount of preventable medical errors.

Conclusion

Florence Nightingale, the founder of modern nursing and a contributor to the knowledge and improvement of public health, one said, "It may seem a strange principle to enunciate as the very first requirement in a hospital that it should do the sick no harm." In other words, the main goal of any doctor should be first and foremost, to do no harm to their patients. With the millions of medical errors occurring each and every year, it is safe to say that doctors could use a little more help in making this goal a reality. The only way this is going to occur is if (1) we gain a better awareness of the issue, (2) start implementing innovative resources such as informative technology systems into all healthcare facilities, and (3) encourage patients to take responsibility of their health by playing an active role in their care. Once this is accomplished, the healthcare system can become a safer place for all. Therefore, the time is now to start putting more emphasis on learning from medical errors and using that knowledge to increase the efficiency of the healthcare system.