

A remedy for the medical error epidemic through improved accountability measures

Abstract

Background: Medical errors have become an epidemic in the United States. This article aims to address the history of medical errors and the root cause of medical errors, while offering solutions to improve accountability; thus, decreasing medical errors. The argument in this paper is threefold; first the notion of medical errors is examined in depth, next current accountability measures within healthcare organizations are discussed, and lastly solutions for creating an environment which fosters a positive atmosphere of accountability is discussed. The article examines medical errors in depth and the impact of the secrecy of medical errors. This article also addresses current medical error accountability measures that healthcare systems and the associated flaws with the current accountability measures. Solutions for improving accountability are offered; such as improving communication and disclosure procedures. Several models, policies, and programs such as The Lexington Model, Sorry Works!, apology laws, and employee performance standards are discussed as solutions to helping create transparent environments within health care organizations. The rudimentary purpose of this paper is to acknowledge that a lack of medical error accountability hinders the ability to learn from past mistakes, thus putting patients in unnecessary danger.

Keywords: medical errors, medical error epidemic, medical error secrecy, accountability, medical error communication, medical error disclosure procedures

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Introduction

It is a scenario that happens behind closed doors all too often in hospitals across America: A 9month-old boy presents to the hospital with a fever and cold symptoms. Blood cultures are drawn and Tylenol is administered, an hour after the Tylenol begins to work the baby appears to be progressing well, so the doctor sends him home with the diagnosis of an upper respiratory infection. The following day, the lab notifies the doctor that the patient's labs were positive for sepsis and meningitis. The baby is brought back to the hospital and admitted to the intensive care unit; he survives but he suffers neurological devastation and ultimately leaves the hospital with a tracheostomy and feeding tube. The chief resident asks to speak to the doctor, noting that he drew a white cell blood count and never checked it before sending the boy home; had the doctor checked the white cell blood count the child would have received antibiotics and would have presumably returned to his normal state of health. The chief resident suggested this error be kept between the two of them.¹ Unfortunately medical error cases such as the one described have become the rule, not the exception. This becomes ethically significant as patients are being deceived and not receiving transparent communication regarding their care and physicians are repeating these preventable errors because they are not being reported and remedied. Research ranging from 10-15years ago reported a lack of governmental reporting agency for medical errors, and the problem still exists today. While the Center for Disease Control (CDC) allows physicians to include medical errors on a death certificate, it does not include medical errors in published death totals; as the underlying cause of death is predominantly considered the cause of death.² The World Health Organization (WHO) reported in 2011 that your chances of being subjected to a medical error while in a hospital are 1 in 10, your chances of dying from a medical error in health care is 1 in 300.³ An unethical mentality has developed within healthcare organizations that foster an environment of secrecy when it comes to properly reporting medical errors, as healthcare workers do not want to be the "bad apples" of the organization. This silence

regarding medical errors has made it increasingly difficult to discover the root cause of errors and thus has hindered the ability of health care organizations to develop effective error prevention strategies. The aim of this paper will be to examine how improved accountability measures within health care organizations can help to moderate the current medical error epidemic that America is facing. The argument in this paper will be threefold; first, the notion of medical errors will be examined in depth, next current accountability measures within healthcare organizations will be discussed, and lastly solutions for creating an environment which fosters a positive atmosphere of accountability will be discussed.

Medical errors

Errors in medicine have been around as long as medicine has been practiced. Greek medical texts dating back to the time of Hippocrates describe stories of different medical errors, all which place blame on the physician for the error.⁴ Although the CDC does not recognize medical errors as a leading cause of death, researchers have concluded that medical errors should be listed as the third leading cause of death in the United States. Medical errors would fall behind heart disease and cancer. Prima facie, it appears that doctors and medical staff are careless and negligent, leading to more medical errors. Many times, fingers are pointed at providers for errors, yet medical errors are often the result of organizational systems letting providers down. There are many error prone areas in medicine and while physicians are responsible for making sure these errors do not happen at the medical care level, healthcare organizations must also be prepared to address these errors at the organizational level.⁵ This portion of the paper will seek to explore the medical error epidemic and the impact of the secrecy of medical errors on the health care system.

The medical error epidemic

Medical errors have recently gained attention for their contribution to morbidity and mortality in the healthcare system.⁶ Understanding

how often medical errors are still occurring today is important to understanding the wrath of the epidemic that is upon us. It can be estimated that approximately 1 in 10 hospital admissions will result in an adverse event, approximately half of which are preventable. One third of these adverse events result in minor harm or permanent disability.⁷ The unit you are admitted to in the hospital will also determine how many errors you may be vulnerable to. It is estimated that the average ICU patient has 1.7 errors in their care per day and the average hospitalized patient has at least one medication error per day. The Institute of Medicine, types of medical errors, and organizational problems that allow for medical errors will be discussed in conjunction with the medical error epidemic.

The institute of medicine

In 1999 when The Institute of Medicine (IOM) published *To Err is Human: Building a Safer Health System*, efforts to address patient safety began to emerge as the report not only identified the problem, but also provided a tangible solution. Prior to this report it was considered that medical errors were an inevitable part of medicine that would occur if there were doctors practicing bad medicine. The IOM report found that medical errors were not necessarily the direct result of bad providers. The report found through their research that there were large numbers of medication errors, communication problems (specifically in intensive care units), the patient discharge process was lacking proper structure, and instruments were being left in surgical patients despite count backs supposedly occurring. In short; everywhere you turned in the medical field errors were occurring from a blatant lack of patient safety initiatives and proper disclosure procedures.⁸ The IOM report intended to lay out a strategic plan for dealing with this serious health care epidemic. The report noted that although there is no single solution, a combination of solutions could be the answer to a safer health system bearing in mind that although committing errors is part of human nature, it is also part of a human nature to construct solutions to problems.⁹ Although this report was published over a decade ago it was a pioneer report in addressing the medical error problem and laying the ground work for possible solutions to the problem. The problem with the epidemic of medical errors today is that there is essentially a lack of action to deteriorate the problem.^{10,11} Some scholars criticize the IOM report saying that its death toll estimates from medical errors are over estimated. Yet, the estimates for medical mistakes noted in the IOM report are most likely an undercount. Only mistakes recorded by the physician in a patient's medical record were used for the IOM report, and physicians typically document medical errors less than 30percent of the time. The estimate from the IOM report can also be considered an undercount because the numbers reported by the IOM report don't include deaths from mistakes that occurred outside of the hospital atmosphere such as; outpatient surgery centers, family physician offices, or other specialty physician offices. Essentially no information exists on deaths or injuries from preventable medical mistakes outside of the hospital atmosphere.¹²

Types of medical errors

For this paper it is important to understand that there is a wide range of different types of medical errors, some of which occur much more frequently than others. The term medical error is a broad term which embraces many different types of errors and events that might occur in the medical field, making the term difficult to define. For the sake of this paper the most appropriate description of a medical error will rest on the notion of due care. Due care is a legal doctrine that recognizes

that certain medical professionals may inflict harm while engaging in lawful and professional medical care, yet the medical professional can only be liable for the inflicted harm if the standard of due care was not met. Thus, a medical error can be defined as "an unwarranted failure of action or judgment to accommodate the standard of care."¹³ The different types of medical errors will be discussed.

There are different types of events that can occur in association with medical errors. A mistake occurs when an act ensues as planned, but the plan fails to achieve the intended outcome due to the planned action being incorrect. When a mistake occurs, there is generally a lack of knowledge or the situation is assessed incorrectly and a failure to correctly plan is the source of the mistake. An example of a mistake in health care would be a physician prescribing the wrong type of medication because the patient's diagnosis is wrong; the situation in this case was not correctly assessed and therefore the action plan cannot be correct.¹⁴ An adverse event is an injury or harm that results from medical care yet an adverse event may occur when a patient accepts possible complications from a surgery, therefore a distinction must be made between preventable adverse events and non-preventable adverse events. Preventable adverse events are negligent adverse events. Errors may also occur that do not result in an adverse event but rather in a near miss, such as when a patient who is allergic to a medication receives that medication but does not have an allergic reaction.¹⁵ Medication errors are one of the most common types of medical errors in health care. The notion of "death by decimal" has been used to describe how deadly medical errors can be as misreading a medication dosage can be a lethal mistake. Medication errors are so abundant because of the amount of medications available and the inability of physicians to remember all medications, their purposes, their side effects, and their interactions with other drugs.¹⁶ Others speculate that medication errors occur so often due to the amount of steps it takes to actually distribute the medicine to the patient and the amount of prescriptions that are written a year, yet medication errors are typically not properly reported.¹⁷ It is estimated that there are approximately 50-100 steps between a doctors decision to prescribe a certain medication and the actual administration of the medicine to the patient. The chance of an error occurring with so many steps in between is 39percent. It is estimated that 5percent of hospital patients experience at least 1 adverse drug event during their hospitalization. It has been found that 1 in 20 hospital admissions can be traced to medication problems; many of which are preventable.¹⁸ In general, medication errors are often preventable. Medications errors typically happen when the wrong drug name or dosage form is used, when a patient is given a drug from a class of drugs they are allergic to, or when calculations or decimal points are incorrect.¹⁹ Surgical errors are also a prevalent type of medical errors. The Utah-Colorado study found that 45 percent of all adverse events were in surgical patients and of those, 17percent resulted from negligence and another 17 percent resulted in permanent disability for the patient. In summary; 3percent of patients who underwent surgery suffered from an adverse event, half of which were preventable adverse events.²⁰ Wrong site or wrong patient surgeries are considered "never errors" yet; The Joint Commission Center on Transforming Healthcare recently reported that there are still as many as 40 wrong site, wrong side, and wrong patient operations happening weekly in the United States.²¹ Wrong site, wrong side, wrong patient surgeries happen at an alarming rate for being "never errors" making it nearly impossible to believe that there are that many careless surgeons working in healthcare today, the procedures for surgery must be improved within organizations. The Joint Commission has endorsed the use of the Universal Protocol to

prevent wrong site and wrong patient surgeries. Surgeons are to “sign their site” or mark the surgical site with ink, yet this solution is not always fool proof. Some surgeons will place an X on the surgical site while others will place an X on the opposite limb as to say “don’t cut here.”²² Surgical teams are also supposed to take a “time out” before performing surgery to discuss the patient and the type of surgery to be performed, yet this does not always happen due to a lack of follow up at the organizational level.²³ Retained surgical instruments are also a problematic surgical error that relies on a faulty system of checks for prevention. Retained sponge cases happen at the frequency of about 1 per every 10,000 surgical cases which equals approximately one case per large hospital in the United States a year. Counting of surgical instruments is supposed to be done at the beginning of surgery and at the end of surgery, but sometimes this does not always happen because it is not organizationally regulated. It has also been shown that surgical teams will count multiple times, agree to the count, and document the count, yet surgical instruments are still left behind even though the team agreed to the count.²⁴

Medical errors also occur as a direct result of a lack of teamwork and communication within organizations. Poor communication is often to blame for medication errors as the prescription is either incorrectly or ineligibly written or patients do not understand prescription directions.²⁵ Patients also often see a handful of care providers during their stay in the hospital and if organizations are lacking proper communication and information hand off strategies than pertinent information regarding the patient may go unbeknownst to important care providers. It is not uncommon for a patient to be discharged when they still have test results pending, because the discharge professional is unaware of the pending test results.²⁶ The Joint Commission has demonstrated that communication blunders are the most common cause of medical errors. For example, a patient who was full code was not resuscitated because the doctor pulled the wrong chart and thought the patient was no code. The patient’s nurse thought that the doctor’s information was wrong, but decided against questioning him due to his authority. The patient ended up dying as a result. Due to the perceived hierarchy within the healthcare organization the young nurse felt that it would be inappropriate to speak up against a physician, resulting in a tragic medical error.²⁷ It is clear that medical errors are abounding as errors can happen in every aspect of medical care. It is imperative to understand the error prone areas of medicine for the sake of this paper so it can be understood just how frequently and likely errors are to occur. Organizational problems that allow for medical errors will be discussed next.

Organizational problems that allow for medical errors

Many medical errors occur as the result of organizational systems letting providers down.²⁸ In order to truly resolve medical errors the root of the problem must be fixed at the organizational level.²⁹ Health care organizations are essentially a breeding ground for errors as they can be poorly organized, don’t ensure that their physicians have the most current medical records for patients, or they don’t have effective systems in place that ensure physicians obtain the test results they order. Hospital staff members are typically overworked within health care organizations, there is poor communication between staff taking care of the same patient, and budget pressures from the organization force medical staff to cut corners.³⁰ Organizational ethics must include management oversight that leads to doing the right thing, or else vision and mission statements that do not result in more ethical performance by staff members are seen as a waste of time and resources.³¹ The ethical climate of a health care organization is reliant upon all of the different

employees within the organization such as; the board of directors, administrators, medical staff, clinical staff, hourly employees, and even the patients themselves.³² One of the most pertinent organizational problems that generate medical errors is the notion that many times the medical staff is understaffed and overworked. Medical errors are likely to occur when residents and doctors who are still in training are inadequately supervised and get in over their heads. It is no secret that a lack of sleep has been directly linked to catastrophic events, in fact many professions have regulations in place for workers where sleep deprivation might affect their performance; such as an airline pilot. The health care field on the other hand is different; the healthcare field typically uses sleep deprivation as a rite of passage for physicians to exemplify their stamina within the profession. In a survey of medical resident’s 70percent said they have witnessed a colleague working in an impaired condition caused by sleep deprivation. Sleep deprivation has profound effects on the human body; effects that are similar to being drunk. Researchers have found that when people are awake for more than 17hours their cognitive psychomotor performance was similar to that of someone with a blood alcohol level of 0.05percent. When a person is awake for more than 24hours their performance was equivalent to a blood alcohol level of 0.10percent. Not only does a physician’s performance wane when they are exhausted, but their ability to empathize also diminishes as they typically have less energy to deal with other people’s problems.³³ One study found that residents who averaged less than 2hours of sleep within a 32hour period made nearly twice as many errors reading ECGs. Another study found that medical residents who were working traditional 24-30hour shifts in the intensive care unit were five times were likely to commit a serious diagnostic error than when their shifts were limited to 15hours.³⁴ Understaffing is also problematic for health care organizations. According to the American Hospital Association in 2004 one in seven hospitals in the United States reported being understaffed with nurses. It has also been shown that the more patients a nurse have, the more likely errors are to occur. One study found that surgical patients had a 31percent greater chance of dying in the hospital when the nurses cared for more than 7 patients at a time. It has been estimated that 20,000 deaths in the United States can be attributed to nurses being understaffed in hospitals.³⁵

Another organizational problem that leads to medical errors is a lack of communication between different providers. Many errors are the direct result of a breakdown of communication within the organization. Members of the medical staff will often not question a doctor even if they feel they might be making a mistake due to the perceived hierarchy adopted from within the organization. Typically, within an organization no training exists to teach these different medical providers how to work together and how to properly communicate.³⁶ Hand off errors can occur when the different departments of the health care organization do not work together as a cohesive group. There is substantial evidence that suggests that the quality of teamwork within a health care organization will ultimately determine if patients receive appropriate in a prompt and safe manner.³⁷ Often a culture of low expectations can emerge from within health care organizations. When a culture of low expectations emerges the employees of the organization come to expect that the organization is faulty and therefore red flags within the system are typically ignored, because they are not seen as being unusual. This often creates a repetitive culture of poor communication thus leading to the possibility of medical errors.³⁸ This portion of the paper has sought to explore the realm of medical errors; the impact of the secrecy of medical errors will be discussed next.

The impact of the secrecy of medical errors

A prevailing and unethical norm in medicine that dates to ancient Greek times is the notion that medical errors should not be disclosed, in fact one scholar notes that in dozens of accounts of medical errors in ancient Greek texts, none of those accounts advocate telling the patient or the patient's family about the error; still the norm for today. The tradition of non-disclosure may have been passed on from ancient times, but it is a tradition that has worn thin and has had stark implications on the quality of health care in America today.³⁹ How medical errors are kept secret, fear of litigation, and defensive medicine will all be discussed.

How medical errors are kept secret

In 1986 Congress implemented the National Practitioner Data Bank as a central clearinghouse for information about doctor's and other health care professionals. The National Practitioner Data Bank is the only national source of information regarding actions taken against doctors, yet it is inaccessible to the public. The data bank does not contain information about exact medical mistakes, but it does contain information on health care professionals how have been named in a medical mal practice settlement. The National Practitioner Data Bank appears to be a valiant solution in collecting information regarding medical errors, yet hospitals and health care organizations are notorious for not reporting adverse actions to anyone, let alone the National Practitioner Data Bank. Since the data bank was established over 60percent of hospitals have never reported any adverse actions. In fact, fewer than 1,000 disciplinary actions are reported yearly.⁴⁰ Hospitals add to the code of secrecy surrounding medical errors by taking advantage of the loopholes of the NPDB such as restricting the privileges of physicians for only 29days, to avoid the reporting requirements for physicians restricted for 30days or more.⁴¹

The failure of hospitals and health care organizations to report errors to a congress implemented clearing house speaks volumes about the way hospitals, health care organizations, and health care professionals view transparency in the medical field which creates a vicious cycle of covering up medical errors instead of discovering the root problem. The typical culture within a healthcare organization is that nobody asks about medical errors, and therefore nobody tells. Hospitals are required by law to check the National Practitioner Databank before hiring physicians, but this is not effective in weeding out negligent physicians if hospitals do not properly report to the data bank. To avoid confrontation hospitals typically let doctors who have been found negligent or have had misconduct within the work place quietly resign, allowing the same negligent physician to work for a different health care organization.⁴² In 2002 Pennsylvania established the Pennsylvania Medical Care Availability and Reduction of Error (MCARE) Act. The act requires Pennsylvania hospitals to report all serious medical error events in which they have collected over 400,000 reports and create a quarterly newsletter that addresses the important errors.⁴³ Even if hospitals do have reporting systems for errors, they must act on the reports that they do receive.⁴⁴ The American Medical Association (AMA) notes that medical error disclosure is ethically mandatory as error disclosure respects the fiduciary nature of the physician- patient relationship. Error disclosure is also ethically necessary because patients have the right to pertinent information regarding their health care so they can make informed decisions, which they cannot do if they are being deceived by the physician. Yet, in the event of a medical error many physicians and health care organizations will either lie or refuse to discuss the error,

or they will explain what happened in a way that does not call direct attention to the error.⁴⁵ In general health care organizations foster an environment that encourages health care professionals to cover up their errors, creating a vicious cycle of repetitive errors. One of the reasons for this culture of secrecy is the fear of litigation, which will be discussed next.

Fear of Litigation

Health care organizations; among others, have construed the idea that there are hundreds of thousands of medical liability law suits a year and only a small amount of genuine medical errors. Yet, the opposite it is true. There are very few medical negligence lawsuits and far more medical errors. There appears to be an epidemic of medical malpractice, not law suits. This false impression of an abundance of medical lawsuits and a few medical errors comes from the American hospital system itself, in which hospitals typically try to cover up medical mistakes.⁴⁶ Between 2004 and 2006 the number of medical pay outs from medical negligence cases was 38,363 in contrast the number of deaths due to preventable medical errors was estimated to be 238,337; exemplifying a gross difference between the amount of medical errors that occur and the amount of people that sue.⁴⁷ A 2006 study conducted at Harvard University found that people tend to over-exaggerate the amount of medical law suits that occur. The researchers at Harvard found that very few medical lawsuits without merit were filed, and if they were filed they rarely received compensation. Very few of the claims where no errors were found were rewarded, in fact the research indicated the exact opposite; the non-payment of claims that did involve errors happened much more frequently. The idea that patients will be able to sue physicians for frivolous claims and win is not realistic. Often when health care organizations cover up medical errors, they do not stay covered up as the errors will eventually compromise the safety of the entire organization.^{48,49} The secret culture of medical errors has impacted physicians in a way that makes them unnecessarily fear litigation and thus leads them to practice defensive medicine, which will be discussed next.

Defensive medicine

Defensive medicine as it is most simply defined is the notion that doctors order unnecessary tests and medical procedures for patients to avoid medical malpractice lawsuits. Defensive medicine is claimed to stem from the liability concerns of physicians (which have been discussed to be over-exaggerated) thus leading to the unnecessary overuse of healthcare resources. Defensive medicine is essentially selfish in nature as it stems from the physician's desire to protect them from litigation. Defensive medicine does not necessarily have the best interest of the patient in mind as patients can be exposed to more harm from unnecessary procedures and tests thus leading to the greater chance for a medical error to occur. Unnecessary medical procedures and exams also create excessive stress for the patient and can tarnish the quality of the physician-patient relationship making more patients more willing to sue when the physician-patient relationship is severed. In 2003 a study was done by researchers at the Harvard School of Public Health and the Columbia Law School to examine the prevalence of defensive medicine and the characteristics typically associated with defensive medicine. The researchers created a survey and distributed it to 1,333 physicians in Pennsylvania, in which 824 physicians completed the survey. The results were significant in that 93% of participants reported that they either sometimes or often engaged in one of the six forms of defensive medicine outlined within the survey which were; ordering more tests than medically

necessary, prescribing more medications than medically necessary, referring patients to other specialists unnecessarily, avoiding certain procedures, suggesting certain invasive procedures that may be unnecessary, and lastly avoiding caring for high risk patients. 59% of participants reported that it was not uncommon for them to order more tests than medically necessary for their patients. The study was significant as it found that defensive medicine was prevalent in 9 out of 10 respondents.⁵⁰ Medical students are also often taught to practice defensive medicine as part of an informal curriculum within health care organizations. This is problematic because medical students and residents should be taught the importance of integrity and honesty, not dishonest behaviors that seek to only protect the physician from litigation. A survey conducted in 2010 of 202 fourth year medical students and third year medical residents at North western University in Chicago found that 94percent of students and 96percent of residents saw examples of defensive medicine being practiced in their clinical training. Respondents reported that ordering more tests than medically necessary was a frequent occurrence within their clinical practice. 53percent of residents also indicated that their attending physician explicitly taught them to take liability concerns into account when making clinical decisions. This is ethically problematic as healthcare organizations are allowing physicians within their organizations to teach residents that over practicing medicine is better, even if it could lead to the possibility of more medical errors occurring. Instead they should be teaching students about the importance of patient safety methods and proper accountability and communication methods for what to do if an error does occur.⁵¹ Medical errors have been discussed at length along with the code of secrecy surrounding medical errors in health care organizations and the ramifications of that code of secrecy. For the sake of this paper it is imperative to understand the nature of medical errors and the silence that prevails when medical errors occur to understand how the current accountability measures are failing within health care organizations, which will be discussed next.

Current accountability measures

Hospitals and health care organizations rarely have systems in place to find the root cause of medical errors, and therefore cannot change the policies and practices that allowed the error to occur in the first place. Essentially, if medical staff and executives are not interested in how many medical errors are occurring at their own facilities, they won't find out, and if they don't find out how many medical errors are occurring within their health care organizations then they will never fix what's wrong, thus creating a vicious cycle.⁵² This section of the paper will seek to review current accountability measures by investigating current health care organization disclosure procedures and national medical error disclosure procedures.

Health care organization disclosure procedures

One of the main issues with health care organizations and the notion of accountability is that although they may have several different types of medical error disclosure procedures, they often spend more time trying to cover errors up rather than providing education on medical error prevention. This section of the paper will seek to identify some the current disclosure procedures such as self-reports, chart review, and morbidity and mortality conferences. Reviewing the current disclosure procedures will allow for a more critical evaluation of what needs to be done to help resolve this medical error epidemic further in this paper.

Incident reports

After the IOM report surfaced many people within health care organizations attempted to implement reporting systems to help manage the medical error crisis. One way health care organizations attempted to defeat the medical error epidemics is through the implementation of self-reports and incident reports. Incident reports are meant to come from those employees who work in patient care such as nurses, pharmacists, and physicians rather than from other staff members such as supervisors. Incident reports rely on staff members to report, which typically does not willingly happen. Incident reports are typically a passive form of error reporting because medical personnel choose if they wish to report the incident. Although the notion of incident reporting is viable there are still many problems that do not allow for current incident reporting measures to be effective. Incident reporting can be problematic because typically nurses tend to disclose errors far more than doctors who typically prefer to either not report at all or to report only through informal means such as telling a chief resident. Nurse reports outnumber physician incident reports 5 to 1. Incident reports also do not always make it to the correct hospital personnel for maximum improvement within the healthcare organization. Incident reports typically end up at the desk of the healthcare organizations risk manager who is mainly concerned with limiting the organizations legal risk, not improving the system from the roots up, so what the risk manager does with the information regarding medical errors will be vastly different than someone who is involved in medical error prevention would be.⁵³ While each health care organization may have some form of incident reporting in place, it is not unlikely to assume that the reports are not effective in combating the medical error epidemic due to the design of these reporting systems and the lack of trust as a whole in the reporting systems. Allowing the incident reporting systems to be voluntary is also strongly influenced by many outside factors, such as recent conferences the medical team have attended or the amount of time they must report an error.⁵⁴ Chart review will be discussed next.

Chart review

Another way to identify medical errors within health care organizations is through reviewing charts, which is what the Harvard Medical Practice Study members did to identify preventable adverse events for their report. However, chart review is not always favoured because it is expensive and labor intensive. Poor charting by the medical staff can also make chart review difficult to conduct. Chart review may also not be completely reliable because if members of the medical staff are aware of this method they may be likely to try to cover their errors by buffing the patient's chart. Like chart review; some institutions use trigger tools to identify errors. Trigger tools essentially seek to track errors by looking for a response in care that signifies an error has occurred. For example, if a patient is given an overdose of medication a trigger tool might be to look for the administration of corrective medicine to fix the error. When a trigger is found it often prompts a more thorough chart review to identify other errors.⁵⁵ Chart review also begs the question of if administrative personnel should have to "dig up" errors as this method does not encourage medical staff to just report the errors as soon as they occur, which for ethical reasons, should be the standard in all health care organizations. The idea of morbidity and mortality conferences as an accountability measure will be discussed next.

Morbidity and mortality conferences

Morbidity and Mortality conferences address a key patient safety principle by allowing others to learn from mistakes. At morbidity and mortality conferences errors are openly discussed by medical staff members. The point of morbidity and mortality conferences is to acknowledge errors that have occurred to medical staff members while avoiding a strenuous atmosphere to establish solutions to the errors. During these conferences administrative safety staff are often present to perform root cause analyses on the errors presented.⁵⁶ A Root Cause Analysis (RCA) team can be established within the organization, but to get to the root cause of an error a proper reporting system must first be in place within the organization. Root cause analysis teams require multiple people from multiple professions within the organization. They also require that the people who were a part of the error speak about the error. RCA committees are essential to preventing further medical errors, but RCA committees are insignificant if the reporting mechanisms within a healthcare organization are not up to par.⁵⁷ Morbidity and Mortality conferences could potentially be fruitful in combating the medical error epidemic, yet they have not been perfected. Morbidity and mortality conferences often consist of only physicians, leaving out other important members of the medical staff team that may have insight and stories to share regarding medical errors. These conferences also typically only focus on one discipline such as surgery or intensive care medicine. Presenters at morbidity and mortality conferences must also trust that the information they present is confidential. Another problem with morbidity and mortality conferences is that they are typically not found outside of academic hospitals or in outpatient settings due to a perceived lack of time and expertise.⁵⁸ We have discussed the major current health care organization error accountability measures and it can be concluded that while these accountability measures do not completely fail they could also be improved upon in an effort to reduce the amount of errors occurring within health care organizations. The current accountability measures also have too many loopholes and are not mandatory creating a large gap between the errors that occur and the errors that are reported. The next section of the paper will discuss national accountability efforts.

Problems with current accountability measures

Some of the most popular medical error accountability measures have been discussed; this section of the paper will seek to discuss why those error accountability measures have failed. In most American businesses when a mistake is made those mistakes must be reported, recorded, and resolved. Yet although congressional hearings took place after the IOM report came out no health care executives were called to speak and no one was blamed for the inaction. Some hypothesize that congress did not take complete action following the IOM report because there is no federal agency that tracks deaths or injuries from medical mistakes. Others hypothesize that because no one is held accountable for mistakes in the health care system there are few negative consequences for health care organizations that lack in safety. So, while over 100,000 people have died every year from preventable medical errors there is no national advocacy group for those victims or their families.⁵⁹ This portion of the paper will seek to identify why some of the accountability measures employed within health care organizations have failed, such as a lack of mandate, lack of standardization, and a fear of discoverability.

Lack of mandate

Perhaps the most glaring problem with current accountability

measures is that there is a lack of mandate within healthcare organizations to report errors, and thus errors typically get hidden rather than reported. Most reporting within healthcare organizations falls under the category of voluntary reporting. Voluntary reporting systems typically get an abundance of “near misses” reports or minimal patient harm reports. Voluntary reports are typically submitted by professionals who have confidence that no outside public awareness will be made and that no penalties or fines will result from any specific case. While voluntary reporting systems are useful in identifying near misses, mandatory reporting systems must also be implemented within health care organizations. Mandatory reporting systems should focus on detecting errors that have caused serious patient harm or death. Appropriate follow up action should be taken to resolve the root cause of the medical error. For mandatory and voluntary reporting systems to be effective follow up action must be taken.⁶⁰

Lack of standardization

Another problem with reporting systems within health care organizations is that there is no standardization on how to report, what to report, and who to report to. While there is currently no nationwide mandatory reporting system standardization of statewide reporting systems could help to pave the way for a necessary nationwide mandatory reporting system. Standardizing statewide reporting systems would allow for the data collected to be combined, tracked, and analyzed over the course of time. If there are no consistent methods for collecting data across all health care organizations the data cannot be properly analyzed and aggregated into meaningful interpretations. A standardized format also allows for communication to occur with consumers and purchasers about patient safety both locally and nationally. Standardization would also lessen the encumbrance on health care organizations that operate in different states. A standardized error reporting system could greatly reduce the number of adverse events that occur within health care organizations by detecting systematic problems and trends.⁶¹

Fear of discoverability

The fear of litigation can sometimes have a significant influence on the behavior of health care providers. Health care providers may be vigilant when providing information that they believe could be used against them. The fear of litigation can have profound effects on medical error reporting systems, often deterring medical staff members from reporting at all.⁶² Anonymous error reports may encourage staff members to report errors, but they do not allow for necessary follow up questions to take place. Confidential reporting systems are ideal because they contain information necessary for follow up questions but shield the reporter from discoverability in litigation. The main concern with confidential reporting is that the reporter must feel confident that the information will remain private. Open reporting systems are the least popular in the medical field as all information is open to the public and possible litigation.⁶³ This section of the paper has identified several popular error disclosure methods within health care organizations and it has also identified why those disclosure methods often fail. While it is easy to point out the problems concerning accountability in health care organizations a solution to those problems must also be presented; the final portion of this paper will seek to identify solutions for improving accountability.

Solutions for improving accountability

This portion of the paper seeks to provide attainable solutions that could help improve the accountability measures within health care

organizations which would thus reciprocate into better medical error analyses, better root cause analyses; which would help to minimize that amount of medical errors that occur, especially typically recurrent errors. While it might be nearly impossible to eliminate medical errors completely, what happens after an error occurs is equally important.⁶⁴ The American Medical Association holds that it is every physician's ethical responsibility to report medical errors, yet concrete professional accountability standards must be enacted within health care organizations.⁶⁵ Two solutions for improving accountability will be identified; improving communication strategies and improving disclosure procedures, both of which must work simultaneously together to achieve maximum results.

Improving communication strategies

Open, transparent, and honest communication are the keys to success and long-lasting doctor- patient relationships in health care, yet typically when a medical error occurs open, transparent, and honest communication ceases. Yet, research shows that patients and family members desire full and honest communication from the medical staff following a medical error; whether it was a serious error, a minor error, or even a near miss. Patients and family members typically want to know what happened, why it happened, and what will be done so the error does not occur again. While any medical error can elicit both physical and emotional pain and suffering patients and family members report less suffering from medical errors if good communication is maintained with the physician. Good communication can also increase the likelihood that the patient or family members view the adverse event as a true mistake rather than a lack of competence.⁶⁶ This portion of the paper will identify three communication strategies to help improve accountability; the power of apology, state-wide "I'm sorry" laws, and the coaching model.

The power of apology

Although the American health care system has adopted the deny and defend method when it comes to medical error apology, it is important to recognize the true power of apology. As it has been previously noted this deny and defend culture is long standing, it is encouraged by many health care organizations, it is taught in medical schools and physician's lawyers often counsel physicians to stop all communication with a patient if an error occurs. Yet, this mind set is completely flawed and erroneous.⁶⁷ When a physician apologizes after an error occurs it can help to heal the relationships that have been damaged by the error. Physician apologies often restore trust in the physician-patient relationship and typically lower the likelihood of a lawsuit. Much research shows that patients are less likely to sue a physician if they have been honest with them and if they have expressed sincere regret regarding medical mistakes or poor outcomes. When patients and families are denied this transparency, they seek other means of healing and other ways of finding out what went wrong through litigation to open the communication they were denied. There are essentially four "r's" necessary for an apology to be sincere; recognition regret, responsibility, and remedy. It is first important to recognize when it is necessary to offer an apology. It is important to show the patient or family members that the physician regrets the error in an empathetic way. It is important that responsibility is taken for the error, in which case there are often many parties involved and thus hold some degree of responsibility for the error. Lastly, an authentic apology must offer a remedy to the error, this could be compensation when necessary or a promise to review and fix systematic problems that allowed for the error to occur in the first place.⁶⁸ When offering

an apology it is important to note that an expression of empathy is not necessarily an expression of fault or guilt.⁶⁹ The power of apology in medicine leads to an even bigger issue; the need for state-wide "I'm sorry laws" to be implemented, which will be discussed next.

State-wide "I'm sorry laws"

Another valiant solution to help aid the medical error epidemic and to improve communication is the implementation of state-wide I'm sorry laws. I'm sorry laws allow physicians to disclose information to patients, family members, and healthcare organizations when an adverse event occurs instead of denying and defending medical errors. There are currently 36 states with I'm sorry laws implemented which prohibit certain statements and evidence from being admissible in a medical malpractice lawsuit when a physician apologizes for a medical error.⁷⁰ Sorry Works! is an initiative that has been put in place to assist health care organizations in their transition to a transparent organization with open communication by implementing apology and disclosure infrastructures into organizations. Sorry Works! Can be very successful for health care organizations because anger resulting from poor communication is often a key reason why people sue following a medical error. Sorry Works! Also helps to reduce the amount of errors that occur by creating an environment that welcomes transparency and thus errors can be better analyzed and necessary system changes can be implemented. For any Sorry Works! Initiative to be successful leadership within the organization must fully be on board. A committee of appropriate staff members must also be established such as; doctors, nurses, legal counsel, risk management, and administration to develop communication and disclosure policy and procedures regarding medical errors. Lastly, the entire health care organization must be educated on the initiative through specific seminars geared towards each profession. The final goal should be to implement a Sorry Works! program, not a single policy; as policies typically sit on shelves and programs are used daily.⁷¹ Having state-wide I'm sorry laws implemented by congress could further validate the Sorry Works! initiative by giving medical staff the peace of mind that their apologies would not be discoverable in court. A final way to improve communication regarding errors is using the coaching model, which will be discussed next.

The coaching model

The coaching model works simultaneously with the power of apology and "sorry" initiatives. The notion of disclosure coaches was developed at Harvard's Children's Hospital where it was decided that there should be specifically trained disclosure coaches who are available to the medical staff 24-7. The National Quality Forum (NQF) also mentioned the need for disclosure coaches in their safe practice guidelines. The NQF recognized that disclosure coaches should be well known within the health care organization and they should have excellent negotiation and people skills. Disclosure coaches should be capable of counseling their colleagues through perhaps difficult conversations. Disclosure coaches must also know how and when to integrate other members of the institution such as the hospitals risk management team or quality and safety. Some institutions are even combining their ethics consultations services with their disclosure coaching services and creating a communication consultation service.⁷² This section of the paper has sought to provide a viable solution for increasing accountability with medical errors in health care organizations, another solution; improving disclosure procedures will be discussed next.

Improving disclosure procedures

Having open communication strategies when it comes to medical errors is essential for improving disclosure procedures. To improve disclosure procedures, the medical staff within health care organizations must first adopt the effective communication strategies previously discussed. This portion of the paper will seek to identify how disclosure procedures within health care organizations can be improved by examining the The Lexington Model, blame free reporting, and employee performance standards.

The lexington model

The Veterans Affairs medical center in Lexington, Kentucky piloted a fair- compensation and transparency policy. The programs full disclosure policy essentially includes helping victims of medical errors file compensation claims without initiating any sort of outside litigation. The Lexington model prides itself on truth telling, when the organization determines that a patient has been injured because of a medical error they describe what happened, offer an apology, accept responsibility, discuss measures to prevent future errors, and offer compensation and further medical treatment as necessary. The hospital staffs graciously complies with this program because they believe it is the right thing to do. The Lexington model has improved error reporting for the VA which has improved other patient safety measures.⁷³ Part of the reason that The Lexington Model has been so successful is its inherent blame free nature. The notion of blame free reporting will be discussed next.

Blame free reporting

Healthcare organizations that adopt an environment of blaming individuals often will not get their medical staff to report errors because the providers will naturally fear punishment. Healthcare organizations are responsible for making providers feel safe in reporting errors.⁷⁴ Blame and punish environments often do not receive many error reports and a lack of reports means that errors cannot be investigated to prevent reoccurrences.⁷⁹ It has been found that healthcare providers are more likely to report errors when they feel it is beneficial to do so, when they feel that there are quality management processes in place, when they feel that they are working in an environment that is patient centred, and when they are satisfied with their job. Healthcare providers are more likely to report errors when they receive feedback regarding the error from appropriate management and when the process to report an error is not overly burdensome.⁷⁵ Blame free organizations must accept the notion that many errors are the result of system failures which need to be re-evaluated. Blaming and punishing individuals for medical errors essentially compromise system improvement, because individuals who fear they will be punished for an error will be less likely to disclose that an error occurred. There are of course reckless errors which should never be tolerated and thus punishment is necessary. Reckless errors typically breach the fiduciary bond between the patient and the physician. Reckless errors deviate from the standard of care and expose the patient to an unnecessary amount of harm. Reckless errors may even be intentional.⁷⁶

Employee performance standards

Another way to improve disclosure procedures within health care organizations is to create employee performance standards in the form of 360-degree evaluations. Organizations should establish performance standards for staff members and it must be known that those providers who do not live up to those standards will no longer be

employed by the healthcare organization. Implementing a 360-degree evaluation would also be helpful in identifying those medical care providers who may be facing problems. A 360-degree evaluation allows peers, staff, and supervisors to grade physicians, this can allow for leaders to anonymously identify those people within the organization that may need assistance with improving patient safety. This method has proven to be successful as one study found that 50 percent of physicians changed their behavior after learning that they had received several complaints. Lastly, organizations should make remediation programs available to staff members who may need them, such as substance abuse counseling and psychiatric care.⁷⁷ 360-degree evaluations allow for colleagues to disclose information about fellow physicians to administrative staff to help those physicians improve in patient safety and thus hopefully be less likely to make a medical error.

Conclusion

The aim of this paper was to examine how improved accountability measures within health care organizations can help to moderate the current medical error epidemic that America is facing. The argument in this paper was threefold; first the notion of medical errors was examined in depth, next current accountability measures within healthcare organizations were discussed, and lastly solutions for creating an environment which fosters a positive atmosphere of accountability was discussed. This paper first sought to argue that there is indeed a medical error epidemic. Researchers have concluded that medical errors are so prevalent they should be listed as the third leading cause of death in the United States. The medical error epidemic is essentially a vicious cycle of repetitive errors that stems from a veil of secrecy within health care organizations. Medical errors are often kept secret because health care organizations allow this behavior in an effort to avoid litigation. Although this fear or litigation was discredited by The Harvard Law Study in 2006 which found the amount of medical litigation that actually occurs is over exaggerated.⁷⁸ This paper suggests that better accountability measures, communication, and disclosure procedures may be the key to creating an environment where medical professionals can feel comfortable reporting errors without the fear of litigation, and thus the root cause of errors can be better analyzed. It has been suggested that adopting a blame free environment within health care organizations is really imperative to defeating the medical error epidemic as an environment which places blame on individuals for systematic mistakes is really counter-productive in decreasing medical errors.⁷⁹ Several models, policies, and programs such as The Lexington Model, Sorry Works!, apology laws, and employee performance standards were discussed as solutions to helping create transparent environments within health care organizations. The solution to the medical error epidemic lies in a particularly elementary notion that if we are not willing to learn from our mistakes, our mistakes will repeat themselves, yet health care organizations must be supportive in allowing their medical staff members to do what is ethically correct by fostering an environment of transparency.

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Conflict of interest

Author declares that there is no conflict of interest.

References

1. Robert D Truog, David M Browning, Judith A Johnson, et al. *Talking with Patients and Families about Medical Error: A Guide for Education and Practice*. Baltimore: The John Hopkins University Press; 2011.
2. Marshall Allen, Olga Pierce. Medical Errors are No. 3 Cause of U.S. Deaths, Researchers Say. *NPR*. 2016.
3. Stephanie Nebehay. Going into Hospital Far Riskier than Flying: WHO. *Reuter*. 2011.
4. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003:256.
5. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:12–13.
6. *Encyclopedia of Bioethics*. 3rd ed. “Mistakes Medical.” 1850-1854.
7. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill, 2008:10–13.
8. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill, 2008:3–4.
9. Institute of Medicine. *To Err is Human: Building a Safer Health System*. In: Linda T Kohn, Janet M Corrigan, Molla S Donaldson, editors. Washington DC: National Academy Press; 2000.
10. John D Banja. *Medical Errors and Medical Narcissism*. Boston: Johns and Bartlett Publishers; 2005:2.
11. Institute of Medicine. *To Err is Human: Building a Safer Health System*. In: Linda T Kohn, Janet M Corrigan, Molla S Donaldson, editors. Washington DC: National Academy Press; 2000:1–2.
12. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003:42–44.
13. John D Banja. *Medical Errors and Medical Narcissism*. Boston: Johns and Bartlett Publishers; 2005:6–7.
14. Institute of Medicine. *To Err is Human: Building a Safer Health System*. Linda T Kohn, Janet M Corrigan, Molla S Donaldson, editors. Washington DC: National Academy Press; 2000:54–55.
15. Robert M. Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:265:3–6
16. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003:117–121.
17. Institute of Medicine. *To Err is Human: Building a Safer Health System*. In: Linda T Kohn, Janet M Corrigan, Molla S Donaldson. Washington DC: National Academy Press; 2000:26–42.
18. Robert M Wachter. *Understanding Patient Safety*, New York: McGraw Hill; 2008:41–51.
19. Institute of Medicine. *To Err is Human: Building a Safer Health System*. In: Linda T. Kohn, Janet M Corrigan, Molla S Donaldson, editors. Washington DC: National Academy Press; 2000:37–41.
20. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:53–54.
21. American Association for Justice. *Medical Negligence the Role of America's Civil Justice System in Protecting Patient Rights*. 2011:5–8
22. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:58–60.
23. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:60–63.
24. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:42.
25. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:85–96.
26. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:99–107.
27. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:12–13.
28. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:160–162.
29. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003:77–78.
30. Steven D Pearson, James E Sabin, Ezekiel J Emanuel. *No Margin, No Mission: Health Care Organizations and the Quest for Ethical Excellence*. New York: Oxford University Press; 2003:25–30.
31. Edward M Spencer, Ann E Mills, Mary V Rorty, et al. *Organizational Ethics in Health Care*. New York: Oxford University Press; 2000:92–94.
32. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003:91–94.
33. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:182–185.
34. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003:100.
35. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003:86–89.
36. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:93 & 100.
37. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:170–173.
38. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003:135.
39. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003:138–141.
40. American Association for Justice. *Medical Negligence the Role of America's Civil Justice System in Protecting Patient Rights* 2011:9–10.
41. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003:138–146.
42. Zane Robinson Wolf, Rhonda G Hughes. “Error Reporting and Disclosure” in *Patient Safety and Quality an Evidence Based Handbook for Nurses*. In: RG Hughes, editor. 2008:336–337.
43. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:155–161.
44. John D Banja. *Medical Errors and Medical Narcissism*. Boston: Johns and Bartlett Publishers; 2005:21–25.

45. American Association for Justice Medical Negligence the Role of America's Civil Justice System in Protecting Patient Rights 2011, 6-8.
46. American Association for Justice *Medical Negligence the Role of America's Civil Justice System in Protecting Patient Rights*. 2011:8-11.
47. Nancy Berlinger. *After Harm: Medical Errors and the Ethics of Forgiveness*. Baltimore: The John Hopkins University Press; 2005. p. 31-32.
48. Studdert DM1, Mello MM, Sage WM, et al. "Defensive medicine among high-risk specialist physicians in a volatile malpractice environment". *Journal of the American Medical Association*. 2005;293(21):2609-2617.
49. Kevin O'Leary, Jennifer Choi, Katie Watson, et al. "Medical Students' and Residents' Clinical Education Experience with Defensive Medicine." *Academic Medicine*. 2012;87(2):142-148.
50. Rosemary Gibson, Janardan Prasad Singh, *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington DC: A Regnery Publishing Company; 2003. 10 p.
51. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:156-158.
52. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008. 8 p.
53. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008:7-9.
54. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008. 23 p.
55. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008. p. 160-162.
56. Robert M Wachter. *Understanding Patient Safety*. New York: McGraw Hill; 2008. p. 162-163.
57. Rosemary Gibson, Janardan Prasad Singh. *Wall of Silence the Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington D.C: A Regnery Publishing Company; 2003. p. 53-57.
58. Institute of Medicine. *To Err is Human: Building a Safer Health System*. In: Linda T Kohn, Janet M Corrigan, Molla S. Donaldson, editors. Washington DC: National Academy Press; 2000:86-87.
59. Institute of Medicine. *To Err is Human: Building a Safer Health System*. In: Linda T Kohn, Janet M Corrigan, Molla S Donaldson, editors. Washington DC: National Academy Press; 2000:89-102.
60. Institute of Medicine. *To Err is Human: Building a Safer Health System*, Edited by Linda T. Kohn, Janet M. Corrigan, Molla S Donaldson, editors. Washington DC: National Academy Press; 2000:109-110.
61. Robert M. Wachter, *Understanding Patient Safety*. New York: McGraw Hill; 2008:153-155.
62. Nancy Berlinger. *After Harm: Medical Errors and the Ethics of Forgiveness*. Baltimore: The John Hopkins University Press; 2005:X.
63. Robert D Truog, David M Browning, Judith A Johnson, et al. *Talking with Patients and Families about Medical Error: A Guide for Education and Practice*. Baltimore: The John Hopkins University Press. 2011:36.
64. Robert D Truog, David M Browning, Judith A Johnson, et al. *Talking with Patients and Families about Medical Error: A Guide for Education and Practice*. Baltimore: The John Hopkins University Press; 2011:31-35.
65. Michael S Woods. *Healing Words: The Power of Apology in Medicine*. Oak Park: Doctors in Touch; 2004:11-13.
66. Michael S Woods. *Healing Words: The Power of Apology in Medicine*. Oak Park: Doctors in Touch; 2004:23-45.
67. Doug Wojcieszak, James W Saxton, Maggie M Finkelstein. *Sorry Works! Disclosure, Apology, and Relationships Prevent Medical Malpractice Claims*. Bloomington: Authorhouse Publishing; 2004:12.
68. Sorry Works! "States with Apology Laws". 2013.
69. Doug Wojcieszak, James W Saxton, Maggie M. Finkelstein, *Sorry Works! Disclosure, Apology, and Relationships Prevent Medical Malpractice Claims*. Bloomington: Authorhouse Publishing; 2004:26-46.
70. Robert D Truog, David M Browning, Judith A Johnson, et al. *Talking with Patients and Families about Medical Error: A Guide for Education and Practice*. Baltimore: The John Hopkins University Press; 2011:57-63
71. Nancy Berlinger. *After Harm: Medical Errors and the Ethics of Forgiveness*. Baltimore: The John Hopkins University Press; 2005:69-70.
72. Zane Robinson Wolf, Rhonda G. Hughes, "Error Reporting and Disclosure" in *Patient Safety and Quality an Evidence Based Handbook for Nurses* ed. RG Hughes, 2008:338-339.
73. John D Banja. *Medical Errors and Medical Narcissism*. Boston: Johns and Bartlett Publishers; 2005:132-135.
74. Zane Robinson Wolf, Rhonda G. Hughes, "Error Reporting and Disclosure" in *Patient Safety and Quality an Evidence Based Handbook for Nurses* ed. RG Hughes. 2008:345-350.
75. John D Banja. *Medical Errors and Medical Narcissism*. Boston: Johns and Bartlett Publishers; 2005:132-145
76. Lucian L Leape. "Medical Errors and Patient Safety" in *The Trust Crisis in Healthcare* ed. David A. Shore 2007:66-68.
77. Robert M. Wachter, *Understanding Patient Safety*. New York: McGraw Hill; 2008:231-233.
78. American Association for Justice. *Medical Negligence the Role of America's Civil Justice System in Protecting Patient Rights* 2011. 2013:8-11.
79. John D Banja. *Medical Errors and Medical Narcissism*. Boston: Johns and Bartlett Publishers; 2005:132-145.

Bibliography:

1. American Association for Justice *Medical Negligence the Role of America's Civil Justice System in Protecting Patient Rights* 2011. Accessed July 15, 2013. http://www.justice.org/resources/Medical_Negligence_Primer.pdf
2. Allen, Marshall, Olga Pierce. "Medical Errors are No. 3 Cause of U.S. Deaths, Researchers Say." NPR 2016.
3. Banja, John. *Medical Errors and Medical Narcissism*. Sudbury: Jones and Bartlett Publishers. 2005.
4. Berlinger, Nancy. *After Harm: Medical Error and the Ethics of Forgiveness*. Baltimore: The Johns Hopkins University Press. 2005.
5. Gibson, Rosemary, Janardan Prasad Singh. *Wall of Silence: The Untold Story of the Medical Mistakes that Kill and Injure Millions of Americans*. Washington, DC: Lifeline. 2003.
6. Institute of Medicine. *To Err is Human: Building a Safer Health System*. Edited by Linda T Kohn, Janet M Corrigan, and Molla S Donaldson. Washington, DC: National Academy Press. 1999.
7. Leape, Lucian. "Medical Errors and Patient Safety." In *The Trust Crisis in Healthcare*. Edited by: David A. Shore: New York: Oxford University Press. 2007:60–69.
8. Millenson, Michael. *Demanding Medical Excellence. Doctors and Accountability in the Information Age*. Chicago: University of Chicago Press. 1997.
9. Nebehay, Stephanie. "Going into Hospital Far Riskier than Flying: WHO," in *Reuter*; July 21, 2011 accessed July 09, 2013. <http://www.reuters.com/article/2011/07/21/us-safety-idUSTRE76K45R20110721>.
10. O'Leary, Kevin, Jennifer Choi, et al. "Medical Students' and Residents' Clinical Education Experience with Defensive Medicine." *Academic Medicine* 87. 2010:142–148.
11. Pearson, Steven, James E Sabin, et al. *No Margin, No Mission Health-Care Organizations and the Quest for Ethical Excellence*. New York: Oxford University Press. 2003.
12. Spencer, Edward, Ann E Mills, et al. *Organization Ethics in Health Care*. New York: Oxford University Press. 2000.
13. Studdert, David, Michelle M Mello, et al. Desroches, Jordon Peugh, Kinga Zapert, and Troyen Brennan. "Defensive Medicine Among High-Risk Specialist Physicians in a Volatile Malpractice Environment." *Journal of the American Medical Association*. 2005:2609–2617.
14. Truog, Robert, David M Browning, et al. *Talking with Patients and Families about Medical Error*. Baltimore: The Johns Hopkins University Press. 2011.
15. Wachter, Robert M. *Understanding Patient Safety*. New York: McGraw Hill, 2008.
16. Wojcieszak, Doug, James W Saxton, et al. *Sorry Works! Disclosure, Apology, and Relationships Prevent Medical Malpractice Claims*. Bloomington: Authorhouse Publishing. 2011.
17. Wolf, Zane Robinson, Rhonda G Hughes. "Error Reporting and Disclosure." In *Patient Safety and Quality an Evidence Based Handbook for Nurses*. Edited by RG Hughes: Rockville: Agency for Healthcare Research and Quality. 2008:334–356.
18. Woods, Michael. *Healing Words: The Power of Apology in Medicine*. Oak Park: Doctors in Touch. 2004.