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Spring 2012

## Examining Medical Error: Causes, Consequences, and Checklists

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# *Examining Medical Error: Causes, Consequences, and Checklists*

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December 13, 2011*

## Introduction:

Medical malpractice is a major issue in healthcare today, resulting in unnecessary damages to patients, excessive lawsuits for physicians and hospitals, and all around skyrocketing medical costs. In *To Err is Human: Building a Safer Health System*, a report released by the Institute of Medicine in 1999, it was stated that preventable adverse events are one of the leading causes of death in America, estimating that “between 44,000 and 98,000 Americans die each year in hospitals as a result of medical errors.”<sup>1</sup> While some practicing physicians believe these estimates to be overstated, the report was still effective at bringing this issue into the public arena.<sup>2</sup> Unfortunately, it has been over a decade since the IOM’s call to action and medical errors are still very prominent in the medical profession. What we need to do now is formulate a different approach when it comes to reducing medical errors.

In order to reduce the number of medical errors, we need to examine the factors that contribute to the mistakes. This paper examines medical errors in the media, specifically looking at physician behaviors and other factors that result in the error. It’s important to see depictions of physician behavior in the media because we know that media has a major influence on patients’ perceptions of the kind of care they are going to receive, regardless of if the behavior is totally accurate.<sup>3</sup> The episodes analyzed in this paper will show that had a checklist been consulted during the procedure, the medical error could have been avoided. Atul Gawande’s, *The Checklist Manifesto*, will be used to emphasize the fact that checklists are capable of providing a great service to the medical profession because they eliminate the chances of making simple mistakes. When used correctly, this new approach of using checklists could be the new direction for

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<sup>1</sup> Institute of Medicine. *To Err is Human: Building a Safer Health System*. 1999. Web. <[http://www.iom.edu/~media/Files/Report Files/1999/To-Err-is-Human/To Err is Human 1999 report brief.pdf](http://www.iom.edu/~media/Files/Report%20Files/1999/To-Err-is-Human/To%20Err%20is%20Human%201999%20report%20brief.pdf)>.

<sup>2</sup> Blendon, Robert J., Catherine M. DesRoches, et al. "Views of Practicing Physicians and the Public on Medical Errors." *New England Journal of Medicine*. 347.24 (2002): p. 1933.

<sup>3</sup> Quick, “The Effects of Viewing Grey's Anatomy on Perceptions of Doctors and Patient Satisfaction, p. 42.

reducing medical error, so we need to examine examples of error, see how they were resolved, and see how using a checklist will help us in the future.

[Insert Image 1 Here]

Annually, only 1% of hospital medical records show any report of negligent medical injury.<sup>4</sup> This may seem like a small percentage, but when we consider that there are more than 30 million hospitalizations in a given year, that 1% ends up resulting in more than 3 million negligent, mostly avoidable, accidents. Out of the population that has suffered from a medical error, only about 10% will take legal action, which means most cases go unrecognized or unresolved. The even bigger problem with these statistics is that many instances of medical error are totally preventable. In *The Checklist Manifesto*, Gawande defines human fallibility, and then analyzes how these instances of fallibility can result in medical error. First, he explains that there are some circumstances that are simply out of our control and therefore it is impossible to prepare for an impending error. Then, he continues, there are errors that we can control that occur either out of ignorance or ineptitude. An error committed out of ignorance is one we are not totally culpable for because as Gawande says, “science has given us only a partial understanding of the world and how it works.”<sup>5</sup> However, mistakes that happen as a result of ineptitude occur despite the fact that we have all the necessary resources and knowledge to prevent them.

Medical mistakes, whether they occur out of ignorance or ineptitude, are rarely shown on television because they portray doctors in a negative light and show that they are human just like everyone else. Medical shows will occasionally provide examples of medical error because in the

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<sup>4</sup> Bovbjerg, Randall. "Medical Malpractice: Folklore, Facts, and the Future." *Annals of Internal Medicine*. 117.9 (1992): p. 788.

<sup>5</sup> Gawande, Atul. *The Checklist Manifesto: How To Get Things Right*. New York: Picador, 2011. p.8.

media today, it is no longer realistic to have a “powerful, almost omnipotent healer.”<sup>6</sup> The “formula” of medical shows has shifted in recent decades, with more of a focus being put on the doctor’s personal life which makes for more relatable characters. Even though there has been a shift in the doctor show formula, doctors are often portrayed as unrelenting advocates for their patients.<sup>7</sup> Advancements in technology, the increasing prevalence of chronic diseases with no cures, and the fact that new diseases are discovered all the time has played a role in the changing physician behaviors in the media because we now know that medical diagnoses aren’t always black and white, and even though we have improved our surgical tools, we still have a lot to learn in medicine. Since it wouldn’t be believable to have doctor shows where every patient was saved, the next best option is for show’s to incorporate doctors who are qualified, caring, and who put their patients’ needs first, but who are still imperfect.

The portrayal of doctors in this heroic, willing-to-break-the-rules-for-you kind of light has both helped and hindered the physician-patient relationship in the real world. In many instances, doctor shows emulate the struggles and successes of actual doctors. There is no question that there are altruistic doctors out there who provide exceptional patient care, the problem though is that there are some doctors who, despite the fact that they provide good care, may not be as involved in their patient’s case as much as the patient would like them to be. Patients can become disappointed or dissatisfied when they think their doctor isn’t providing them with the care they deserve. The evolving physician-patient relationship and the perception of physicians in the media are two of the reasons that doctor shows today will occasionally release an episode where medical malpractice takes place. The media analyses discussed in this

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<sup>6</sup> Makoul, Gregory, and Limor Peer. "Dissecting the Doctor Shows." *Cultural Sutures*. Ed. Lester D. Friedman. Duke University Press, 2004. p. 244.

<sup>7</sup> Makoul, Gregory, and Limor Peer. "Dissecting the Doctor Shows." *Cultural Sutures*. 2004. p. 244.

paper have a twofold purpose; first, they bring the public's attention to an important issue and second, they serve to call attention to the fact that we need to adjust our health system by implementing checklists.

### **Physician and Public Perceptions of Medical Error:**

A study released in the New England Journal of Medicine in 2002 examined both practicing physician's and the public's views on medical errors. Results from the study show that 35 percent of physicians and 42 percent of public respondents had experienced an error in their own care or in the care of a family member.<sup>8</sup> Almost one in five physicians and one in ten public participants reported an error that had resulted in a serious health consequences including death, long-term disability, or severe pain. An especially noteworthy observation was that 81 percent of the public respondents who reported experience with an error assigned "a lot" of responsibility to the physicians involved, whereas only 70 percent of physicians feel the same way. The public was also significantly more likely than physicians to attribute the error to the institution involved.<sup>9</sup> This is a significant observation because it shows that patients are quicker to blame a doctor or the institution for a medical error, where as a doctor is more inclined to blame the system. Doctor's don't want to criticize their own performance or acknowledge their own participation in medical errors.

The physician's and the public's perceptions of the causes of medical errors were the next factors examined. Physicians believed that the two most important factors contributing to medical errors were first, the understaffing of nurses in hospitals and second, the overwork, stress, or fatigue on the part of healthcare professionals. Public respondents agreed that the

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<sup>8</sup> Blendon, Robert J., Catherine M. DesRoches, et al. "Views of Practicing Physicians and the Public on Medical Errors." (2002): p. 1934.

<sup>9</sup> Blendon, Robert J., Catherine M. DesRoches, et al. "Views of Practicing Physicians and the Public on Medical Errors." (2002): p. 1935.

nursing shortage and the overworking of healthcare professionals are partly to blame for medical errors, but the public also felt strongly that physicians not having enough time with patients and the failure of health professionals to communicate as a team were the two most significant factors contributing to medical errors.<sup>10</sup> These are important findings because they show that practicing physicians and the public view medical errors differently. Having different opinions on what constitutes an error or on what caused an error is a serious problem because it makes it harder for society to come up with an effective solution for reducing medical errors. The IOM advocated a move away from seeing individual physicians as the problem and insisted that there was a flaw in the system that is preventing the reduction of medical errors. The problem with this statement for the public though is that it doesn't hold anyone accountable. The study concluded by saying that the public would be "unlikely to support the substitution of a system in which individuals are not subject to sanctions,"<sup>11</sup> and this is a fair criticism because if individuals aren't accountable, how can we monitor any progress that has been made?

The study also touched on some of the proposed solutions that physicians and the public had for reducing medical error. Out of a possible 16 proposed solutions, the two that both groups were in favor of were first, requiring hospitals to develop systems for preventing medical errors and second, increasing the number of nurses in hospitals.<sup>12</sup> The idea of requiring hospitals to develop a system for preventing errors seems like a perfect opportunity to implement a checklist. First, adding a checklist to hospital protocol would be cheaper than hiring additional nurses. Second, instituting a system wide change doesn't hold the doctors as individuals totally responsible for errors. If an error results despite a doctor's best attempt to provide care, he can

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<sup>10</sup> Blendon, Robert J., Catherine M. DesRoches, et al. "Views of Practicing Physicians and the Public on Medical Errors." (2002): p. 1936.

<sup>11</sup> Blendon, Robert J., Catherine M. DesRoches, et al. "Views of Practicing Physicians and the Public on Medical Errors." 24 (2002): p. 1939.

<sup>12</sup> Blendon, Robert J., Catherine M. DesRoches, et al. "Views of Practicing Physicians and the Public on Medical Errors." (2002): p. 1936.

consult the checklist and the team he worked with who can attest to the fact that the doctor did everything he was supposed to do. The checklist shouldn't be seen as a punitive measure, the idea is just to improve outcomes, but a checklist is a better idea than rewarding a physician for positive behavior because that can lead to other issues like unnecessary testing to rack up reimbursements. Finally, and most importantly, the checklist should be implemented as a part of a new hospital system because it has already proven to be effective. When Gawande and his team were testing the efficacy of this new surgical checklist, they ran a six month pilot study using the checklist in eight hospitals around the world. After Gawande's team gathered the results in October 2008, they found that the rates of major complications for patients in all eight hospitals had decreased by 36 percent, the number of patient deaths had decreased by 47 percent, and the number of patients having to return to the operating room because of a post-op complication had decreased by 25 percent.<sup>13</sup> At first, the team considered that maybe the reduction in complication rates wasn't solely due to the checklist, but after they checked for any confounding variables, they realized that the checklist had in fact been responsible for the improvements. Gawande's results are a promising sign that checklists may be the best solution so far for reducing medical errors.

### **Medical Errors in the Media:**

Since we have an idea about how the public and practicing physicians view medical error, we can now examine how the media chooses to portray medical error. Media portrayals of medical errors rarely imply that the physician in question is unqualified or unskilled; more often than not, the examples of malpractice that we see on television usually happen despite a doctor's best efforts of helping a patient. Gawande explains that, "the volume and complexity of what we know has exceeded our individual ability to deliver its benefits correctly, safely, or reliably.

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<sup>13</sup> Gawande, *The Checklist Manifesto*. 2011. p. 155.



Knowledge has both saved us and burdened us.”<sup>14</sup> We have so much medical knowledge available today that specializing, and in some instances even supra-specializing, has become the norm for most doctors because our knowledge of disease and illness is growing by the day. Even the most talented doctors are going to make mistakes occasionally, and the likely reason for these mistakes is that they have so much information available that it becomes harder to first, remember all the possible ways to treat a particular disease, and second, always apply the “best solution” for a particular disease. Every patient is different, and not everyone is going to respond the same to the same types of treatments, which is why it is up to physicians to figure out how to come up with alternative treatment plans.

That being said, there are a few representations of medical error in the media that are portrayed as negligence. We will use two episodes from the popular medical series *Grey’s Anatomy* to first show an instance of medical error, and then a follow up episode to show the beginnings of a working surgical checklist. Given the popularity of the show, it’s important that *Grey’s Anatomy* provides scenarios for both sides of the issue: showing both how errors are caused and then showing steps that have been taken to improve the issue serve to educate the public on how the medical profession is dealing with the issue of medical error. Reports indicate that *Grey’s Anatomy* viewers believe the show as a credible source of medical information, so it is important that the show portray medical error as accurately as possible.<sup>15</sup>

In the (Season 6 Episode 6) “I Saw What I Saw,” a female patient dies as a result of a preventable error. Chief Webber is enraged about the situation, so he interrogates everyone who was working in the ER that night to figure out where exactly his team went wrong. From the beginning of the episode, the audience can see that the doctors are dealing with a very chaotic

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<sup>14</sup> Gawande, *The Checklist Manifesto*. 2011. p. 13.

<sup>15</sup> Quick, Brian, “The Effects of Viewing Grey's Anatomy on Perceptions of Doctors and Patient Satisfaction, p. 38.

situation: mass casualties are being brought into Seattle Grace after a hotel fire. The patient, Mrs. Beckmen, is brought in with what appear to be just minor burns, so after giving her a brief exam, her doctors declare that she is stable and move on to help the other victims. Throughout the episode the patient's condition quickly deteriorates. It is not until the woman begins suffering from chest pains that her team of doctors paid any attention to her, and at that point, any intervention was already too late because the woman's organs have started to fail. Dr. Sheppard comes into the room where the interns are doing everything they can to save her and he tells them to stop what they are doing because the patient is already dead. Clearly, the doctor's missed a step in the patient's care but what step was it, and who was really responsible?

We come to find out that the patient's chest pains were the result of a collapsed lung. The team tries to intubate her, but they quickly realize her lungs are too swollen to get the tube in. After a long series of other attempted interventions, they performed an emergency cricothyrotomy, but by that point too much damage had been done. Dr. Adamson is the one who finally puts the pieces of the puzzle together and realizes that the patient never had her lungs fully examined, which allowed the smoke from the fire to build up and cause the lung to collapse. Since Dr. Kepner was the doctor who gave Mrs. Beckman her initial exam, the Chief decides she is mostly to blame for what happened. The Chief calls Dr. Kepner into the conference room and asks her to explain what the patient's lungs looked like during the exam. As Dr. Kepner begins to defend herself, she has a flash back to the exam and realizes that she never actually looked at the lungs. She had remembered to check the patient's vital signs and listen to her lungs, but right as she was about to look at the patient's throat she becomes distracted by an incoming trauma victim and she loses her train of thought. When she turns back

to the Mrs. Beckman, Dr. Kepner tells her patient that everything sounds good, and then she hurries off to help the new victim.

At first, the Chief appears to sympathize with Dr. Kepner, telling her that he understands it was a simple mistake and that it could have happened to anyone. Still, he feels he has no choice but to fire her because he needs send a message that this kind of simple mistake is inexcusable. Later though, when the Chief is consulting with Dr. Sheppard, Dr. Sheppard tells the Chief: “Maybe it wasn’t one doctor. Maybe it was too many doctors; too many doctors that don’t trust each other.” Sheppard points out that since the merger between Seattle Grace and Mercy West, a competing hospital in Seattle, a system of chaos has developed; a system of chaos he says, that the Chief created.

Dr. Sheppard’s closing remarks hold a lot of significance because he blames the system for what went wrong, not the individual doctors. Interestingly enough, in *To Err is Human*, the IOM concludes that “the majority of medical errors do not result from individual recklessness or the actions of a particular group. More commonly, errors are caused by faulty systems, processes, and conditions that lead people to make mistakes or fail to prevent them.”<sup>16</sup> It’s not really a surprise that the writer’s chose to avoid putting the blame completely on an individual doctor. Yes, Dr. Kepner did miss a crucial step in the initial exam, and just because the ER was chaotic doesn’t make it OK to take short cuts, but what happened to Mrs. Beckman was really the result of a systematic flaw.

The first problem that needs to be addressed in the episode is that, given the hectic circumstances, no one claims Mrs. Beckman to be “their” patient. Dr. Yang is the first to get the patient’s chart, but she quickly hands it off to Dr. Kepner when a more serious trauma comes

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<sup>16</sup> Institute of Medicine. *To Err is Human: Building a Safer Health System*. 1999. Web.

through the door. After Dr. Kepner gives the patient her initial exam, she leaves the patient in the care of Dr. Sloane who is supposed to treat her burns. The patient encountered more than six doctors in this one episode, and none of them seemed to be paying attention to her. The entire episode was written to make it seem as if any of the doctors working the ER that night could have been responsible. Every doctor was distracted for one reason or another, which made them all equally responsible for not providing the care that the patient deserved. Second, the chaos of the fire created an environment where the doctors had to treat more patients than usual, and they had to act fast. The medical error in this case was a result of poor communication and a stressed out staff, which is an accurate reflection of what both physicians and the public believe to be sources of medical error.

[Insert Image 2 Here]

So how could the Seattle Grace staff have prevented this medical error? By using a checklist. It seems simple, but a tangible checklist could have prevented this disaster because it would have saved Dr. Kepner from missing a step, and it would have made all the doctors in the ER more accountable. The fact that no doctor willingly took responsibility for this patient is what Gawande calls “silent disengagement,” a term used to describe what happens when specialized technicians stick narrowly to their domains.<sup>17</sup> In this scenario, it’s not that the doctors weren’t capable of helping Mrs. Beckman, they were just too distracted with other things and because they believed she was stable, they neglected to check in on her. Checklists prevent this kind of mistake from happening because they assign responsibility to a physician.

The other reason why a checklist would have been useful in this scenario is because it would have forced the doctors to slow down and check to make sure they didn’t miss a step. Especially in a high-stress situation, like the one presented in this episode, it is useful to have a

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<sup>17</sup> Gawande, *The Checklist Manifesto*. 2011. p. 103.

checklist that will help the physicians remember the most important steps. Gawande explains that “Good checklists are precise. They are efficient, to the point, and easy to use even in the most difficult situations. They don’t try to spell everything out—they provide reminders of only the most critical and important steps.”<sup>18</sup> When physicians get caught up in the moment, they are more prone to forgetting a step because they have to move quickly. A checklist forces the doctor to slow down and verbally acknowledge what the plan of action is going to be.

It’s no coincidence that the writer’s put a medical error case into an episode that revolved around a high stress situation. Again, since the show is wildly popular and audiences consider the information to be credible, the writer’s didn’t want to show the doctor’s making a mistake on a lazy hospital afternoon because that would make them look unqualified. They chose a high-stakes situation because that is when even the most talented doctors, like Dr. Kepner, are going to make mistakes. The writer’s strategically don’t reveal who made the error until the last few minutes of the episode because they want to show that it was really a lack of team communication that led to the error. After Dr. Kepner has been fired, Dr. Yang admits that “It could have happened to any of us,” and in reality, any doctor is capable of making the mistake that Dr. Kepner made. Like Gawande says, people often point to the fact that a certain problem has, “never happened before, until one day it does.”<sup>19</sup> This is why checklists and following protocol are so crucial to quality medical care because they save people from “simple mistakes.”

The Chief must have taken what Dr. Sheppard had to say about the “system of chaos” pretty seriously because Dr. Kepner reappears in this later episode of *Grey’s Anatomy* when the surgical checklist is brought into the mix. Towards the end of the 7<sup>th</sup> season, in the episode “I Will Survive,” an enthusiastic Dr. Kepner comes in to Seattle Grace and tries to get everyone to

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<sup>18</sup> Gawande, *The Checklist Manifesto*. 2011. p. 120.

<sup>19</sup> Gawande, *The Checklist Manifesto*. 2011. p. 36.

on board with this new way to follow protocol: a checklist. “It’s based on a protocol used in aviation; a simple checklist has led to a huge drop in plane crashes,” she says to Dr. Hunt, who nods in agreement and says that he is familiar with the checklist, and that the idea is too cut down on human error. Dr. Kepner grabs her clipboard and shows Hunt all the criteria that should be checked off before a patient undergoes any procedure like: why the patient is in the hospital, if the patient has been seen by a physician, if the patient has had any tests done, and if they have, what the status of the results are.

[Insert Image 3 Here]

As Kepner is explaining the checklist, Yang comes by, ready to bring a patient in for a lung biopsy but Kepner stops Yang, telling her she needs to get the patient’s doctor first. When April leaves the room, Yang decides that she will “streamline” the process and take the patient in for a biopsy by herself. During the biopsy, Yang finds that the unidentified mass in the patient’s lung isn’t a tumor, it’s a tree. The man had somehow swallowed a seedling, and the seedling had managed to adapt in his body. Thrilled at the prospect of getting to perform a rare procedure, Yang starts to gloat in front of Kepner who yells, “You falsified his checklist!” And when Yang tells her she plans on doing the thoracotomy without notifying Dr. Altman, Kepner lashes out because protocol requires that an attending surgeon be present for the procedure.

Despite Kepner’s best efforts, Yang goes ahead and does the procedure anyway. Even though the procedure was successful, the Chief tells Yang that there would be disciplinary action for going over her attending surgeon’s head. The episode does a nice job pointing out the struggles that Dr. Gawande, a real surgeon, faced when he, his colleagues, and the WHO tried implementing a pilot test to check the effectiveness of a checklist. At first, the checklist is hard to accept because some surgeons take offense to the fact that they would need something as simple

as a checklist to keep them from making mistakes. In addition, even surgeons who didn't take offense to the checklist found the contents of the checklist to be ineffectual and a waste of time. It wasn't until several versions of the checklist that things finally started to go smoothly for the hospitals involved in the pilot study, and the results were astounding.

It's important that shows like *Grey's* can incorporate messages about medical error into their shows because today we know that health information reported in television shows can have an effect well beyond its original broadcast.<sup>20</sup> We now have the luxury of being able to watch shows online or being able to record them to view at our earliest convenience which has greatly increased people's access to this modern way of gathering medical information. Also, we now not only have the luxury of being able to watch shows whenever we want, but we are also capable of discussing them via the internet. Online blogging and chats have generated tons of medical discussions among TV viewers.

As a matter of fact, the writers of *Grey's Anatomy* even have their own blog called *Grey Matter* where they offer links to research about medical issues that they've covered in the show.<sup>21</sup> *Grey's Anatomy* was even included in a report done by the Kaiser Family Foundation to test the audience's retention rate of important medical messages, and the results indicate that the show has "enormous potential to serve as a health educator."<sup>22</sup> Another noteworthy observation is that as many as one in six viewers of the show say that they have at some point, sought more information about a health topic, or visited a doctor or other health provider about something they saw on *Grey's Anatomy*. Given that the show has more than 20 million viewers, this means

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<sup>20</sup> Rideout, "Television as a Health Educator: A Case Report of *Grey's Anatomy*." *Kaiser Family Foundation*. 1-36. Web. p. 14.

<sup>21</sup> Rideout, "Television as a Health Educator." p.14.

<sup>22</sup> Rideout, "Television as a Health Educator." p.14.

that more than 3 million viewers may have taken action regarding a health issue based on something they saw on the show.<sup>23</sup>

### **Are We Making Progress?**

At the time of its release, *To Err is Human* set a goal to reduce preventable medical errors by 50 percent within five years. The report believed that this was a feasible goal because the medical know-how to prevent many of the reported medical errors already existed.<sup>24</sup> However, subsequent reports found that five years came and went without any serious reduction in preventable medical errors. A study by Brennan, et al. believed the problem to be an “overreliance on the notion of the individual accidental death. This notion oversimplifies the causal realities of injuries, overpromises on achievable gains, and threatens to skew priorities in quality improvement.”<sup>25</sup> The authors advocate for a shift away from the philosophy of simply “preventing errors,” and instead focusing on “the implementation of evidence based practices” because this shift would be more likely to yield long term results. The authors would agree that a checklist would be a step towards this implementation of evidence-based practices because first, checklists are a step towards effectively monitoring results. Efforts to reduce medical error have to be measureable, and checklists are measurable because they essentially keep track of all the steps that were taken in the patient’s care.

On a positive note, it appears that surgical checklists are starting to catch on. Gawande notes that by the end of 2009, about 10% of American hospitals and more than two thousand

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<sup>23</sup> Rideout, “Television as a Health Educator.” p.15.

<sup>24</sup> Institute of Medicine. *To Err is Human: Building a Safer Health System*. 1999. Web.

<sup>25</sup> Brennan, Troyen, Atul Gawande, et al. “Accidental Deaths, Saved Lives, and Improved Quality.” *New England Journal of Medicine*. (2005): 1405-1409. Web.



hospitals worldwide had either adopted or were taking steps to implement the checklist.<sup>26</sup> This is a good sign, but he says that the checklist has not been met with the same kind of enthusiasm that say medical devices or new pharmaceuticals are met with. It's interesting that physicians and other health professionals welcome new, state-of-the-art, expensive medical devices that might only improve patient outcomes modestly, and yet they resist the checklist even though it has already proven to work. Gawande says that professionals see checklists as an extra, unnecessary step, but he explains that "just ticking boxes is not the ultimate goal here. Embracing a culture of teamwork and discipline is."<sup>27</sup> As we saw in the media analyses, teamwork plays a very crucial role in patient outcomes. Health professionals need to be able to communicate with one another and with their patients, and checklists are a useful tool for facilitating that communication.

The hope is for the medical profession to one day be able to expand checklists and make them more specialized for unique cases. We've already seen that they cut down on complication rates, and it was done without adjusting any other component to the delivery of care, so why are they met with such resistance? Gawande makes the point that "We're obsessed in medicine with having great components—the best drugs, the best devices, the best specialists—but pay little attention to how to make them fit together well."<sup>28</sup> This statement seems all too true; it seems that we as a society don't accept things as being the best unless they cost a lot of money. He goes on to make the connection that we have the National Institute of Health which is responsible for all these great discoveries, but what we don't have is a "National Institute of Health Systems Innovation alongside it studying how to best incorporate these discoveries into daily practice."<sup>29</sup> New discoveries are rendered useless unless we have the capability of using them well. We now

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<sup>26</sup> Gawande, *The Checklist Manifesto*. 2011. p. 159.

<sup>27</sup> Gawande, *The Checklist Manifesto*. 2011. p. 160.

<sup>28</sup> Gawande, *The Checklist Manifesto*. 2011. p. 184.

<sup>29</sup> Gawande, *The Checklist Manifesto*. 2011. p. 185.

have checklists as a tool to help physicians perfect the skills they already have, all we need to do is use it.

The key to improving medical liability may not even be as drastic and costly as many critics feel it could be. Preventable medical errors end up costing American hospitals between \$17 billion and \$29 billion a year; if we want to start reducing medical errors and medical error costs, we want to start using checklists.<sup>30</sup> Checklists are a cost effective solution to reducing medical error because they don't require additional equipment or personnel, they simply involve using the knowledge we already have to the best of our ability. Most fields of medicine could learn a valuable lesson from the patient safety guidelines that were implemented in the field of anesthesiology. Anesthesiology was once a field notorious for their malpractice premiums and fees, which lead the American Society of Anesthesiologists to adopt a new set of guidelines. They are now the only health sector to have fewer than 4 deaths per 1 million patients.<sup>31</sup> One solution provided in the Schoenbaum article calls for a "cultural change among physicians,"<sup>32</sup> In other words, it is up to the physicians themselves to take on responsibilities such as making sure patient's charts are organized, making sure they have time for their patients, and making sure everyone in their practice has had proficient safety training if they want to reduce medical errors. Checklists will be instrumental in this call for a cultural change among physicians because they increase communication and make physicians more accountable for their actions.

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<sup>30</sup> Institute of Medicine. *To Err is Human: Building a Safer Health System*. 1999. Web.

<sup>31</sup> Schoenbaum, Stephen, and Randall Bovbjerg. "Malpractice Reform Must Include Steps To Prevent Medical Injury." *Annals of Internal Medicine*. 140.1 (2004): 51-55. p. 51

<sup>32</sup> Schoenbaum, Stephen, and Randall Bovbjerg. "Malpractice Reform Must Include Steps To Prevent Medical Injury." (2004) p. 52

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## Appendix A: Images

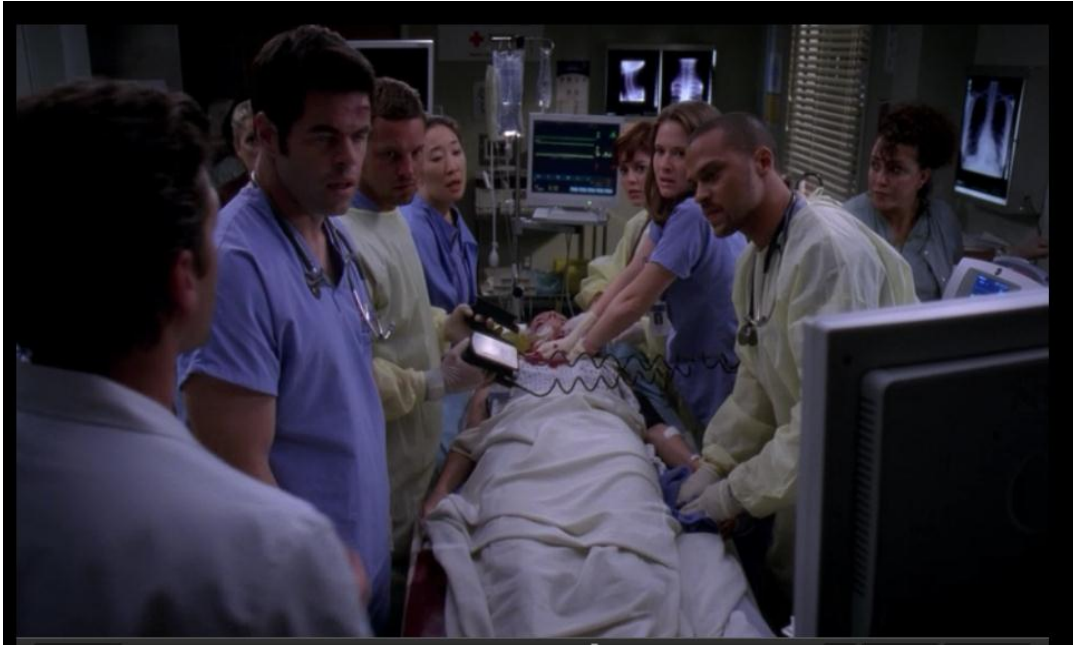
Image 1: Atul Gawande's Checklist

Surgical Safety Checklist		
World Health Organization   Patient Safety A World Alliance for Safer Health Care		
<b>Before induction of anaesthesia</b> (with at least nurse and anaesthetist)	<b>Before skin incision</b> (with nurse, anaesthetist and surgeon)	<b>Before patient leaves operating room</b> (with nurse, anaesthetist and surgeon)
<ul style="list-style-type: none"> <li><input type="checkbox"/> Has the patient confirmed his/her identity, site, procedure, and consent?</li> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> Is the site marked?</li> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> Not applicable</li> <li><input type="checkbox"/> Is the anaesthesia machine and medication check complete?</li> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> Is the pulse oximeter on the patient and functioning?</li> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> Does the patient have a:               <ul style="list-style-type: none"> <li><input type="checkbox"/> Known allergy?</li> <li><input type="checkbox"/> No</li> <li><input type="checkbox"/> Yes</li> </ul> </li> <li><input type="checkbox"/> Difficult airway or aspiration risk?</li> <li><input type="checkbox"/> No</li> <li><input type="checkbox"/> Yes, and equipment/assistance available</li> <li><input type="checkbox"/> Risk of &gt;500ml blood loss (7ml/kg in children)?</li> <li><input type="checkbox"/> No</li> <li><input type="checkbox"/> Yes, and two IV/central access and fluids planned</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Confirm all team members have introduced themselves by name and role.</li> <li><input type="checkbox"/> Confirm the patient's name, procedure, and where the incision will be made.</li> <li><input type="checkbox"/> Has antibiotic prophylaxis been given within the last 60 minutes?</li> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> Not applicable</li> <li><b>Anticipated Critical Events</b></li> <li><b>To Surgeon:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> What are the critical or non-routine steps?</li> <li><input type="checkbox"/> How long will the case take?</li> <li><input type="checkbox"/> What is the anticipated blood loss?</li> </ul> </li> <li><b>To Anaesthetist:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Are there any patient-specific concerns?</li> </ul> </li> <li><b>To Nursing Team:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Has sterility (including indicator results) been confirmed?</li> <li><input type="checkbox"/> Are there equipment issues or any concerns?</li> </ul> </li> <li><input type="checkbox"/> Is essential imaging displayed?</li> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> Not applicable</li> </ul>	<ul style="list-style-type: none"> <li><b>Nurse Verbally Confirms:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> The name of the procedure</li> <li><input type="checkbox"/> Completion of instrument, sponge and needle counts</li> <li><input type="checkbox"/> Specimen labelling (read specimen labels aloud, including patient name)</li> <li><input type="checkbox"/> Whether there are any equipment problems to be addressed</li> </ul> </li> <li><b>To Surgeon, Anaesthetist and Nurse:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> What are the key concerns for recovery and management of this patient?</li> </ul> </li> </ul>

This checklist is not intended to be comprehensive. Additions and modifications to fit local practice are encouraged.

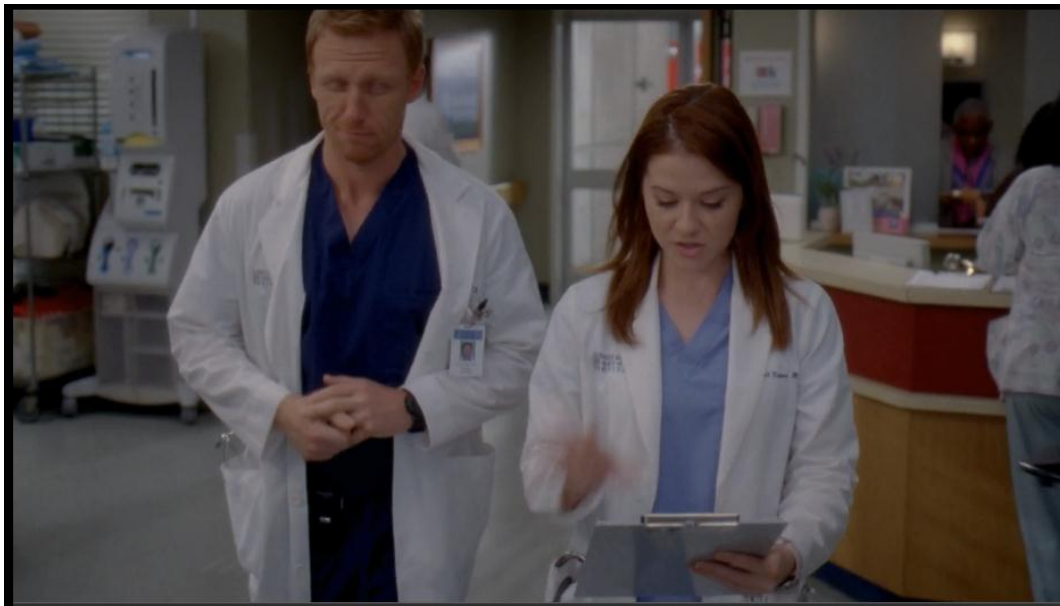
Revised 1 / 2009 © WHO, 2009

Image 2: Screenshot From “I Saw What I Saw,”  
Surgeons trying desperately to save patient.



Source: Netflix.com

Image 3: Screenshot from “I Will Survive”  
Dr. Kepner walking Dr. Hunt through the checklist



Source: Netflix.com