Duty and what really matters - profession and self

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To start this Presidential address, I would like to reflect on what the Western Trauma Association (WTA) has meant to me. My first meeting was in 20 years ago, Crested Butte 1999. Tommy Thomas was the president, I had never been to the meeting before and fortunately had an abstract accepted. I did not realize until after multiple rejections over the subsequent years how special it was to get an article on at WTA. The meeting was heaven, and it was not even Iowa. The meeting had excellent science, discussion panels, discussion of care algorithms and I could wear jeans or come in right off the slopes in ski gear. I was hooked. Having the last article of the meeting was difficult for an anxious person like me. I had several days of listened to all the excellent articles, presentations, and vibrant discussions and pointed questions by some of the greats in trauma surgery. I really became a bit uneasy as the days went on. It turned out to be just as bad as I thought. The presentation went great, there were no punches spared for being the last article and people wanting to leave. There were multiple questions that were pointed and fair and led to the usual great frank and open discussion. That night on the streets of Crested Butte several members said hello, made positive comments about the presentation and discussion. I thought "I am in," I am hooked on this meeting.

The best thing about WTA as many have said is David Livingston's coined the phrase; it is the Fellowship in the Snow. I have brought family members many years. We are always welcome to ski with the members or the famous herds of members and families and always warmly welcomed into the Fellowship. I have shared many of a chair ride with attendees, members, and senior members talking about travel, hobbies, skiing, fishing, family, and only occasionally, a little bit of work. I have developed close personal friends that care for each other and what is going on with our lives and our families, not just our work. I especially value the dinners and group outings with fondly named group, the Babes with Blades, started by Peggy Knudson. This group gave me confidence that I too could be successful in the field of trauma.

I missed two meetings over the last 20 years, both following deaths in my family. The toughest lost was my sister Lisa, who

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was my skiing buddy. After each meeting I missed, I received a program book filled with well-wishing and heart-filled messages that touched me deeply. These were notes truly of concern and support for me and my family. I want to thank the WTA membership for keeping this tradition going, and this year I am going to be selfish and start another tradition and start a WTA President Book to cherish the honor and memory of being the president of this fantastic organization. I will proudly display it on the top shelf of my office for all to see.

Finally, thank you for all of your notes, texts, e-mails, and words of encouragement and sentiments coming up to this meeting and presidential address. It is humbling and a great honor to have been the President this past year.

My topic and title, Duty and What Really Matters, was adapted from Captain Chesley "Sully" Sullenberger's book *Highest Duty, My Story for What Really Matters*.[1] When I graduated from medical school I pledged to an oath. I do not recall it specifically, but similar to the majority of medical schools at the time it was unique yet somewhat based on the original Hippocratic Oath. In a study by Scheinman 105 different medical school oaths where reviewed and there was a trend of four fundamentals of the original Hippocratic Oath: respecting patient confidentiality, upholding the integrity of the profession, respecting teachers and avoiding harm.[2] I also took the Fellows Pledge of the American College of Surgeons. This pledge declares that "I pledge to pursue the practice of surgery with honesty and to place the welfare and the rights of my patient above all else. I promise to deal with each patient as I would wish to be dealt with if I were in the patient's position, and I will respect the patient's autonomy and individuality." I do change the pledge in my mind to read, "as I would wish *my family* to be dealt with if they were in the patient's position." I believe we as physicians treat our family better than ourselves.

I have concern that our oath and pledge appear to be in contrast to what we have been facing in the headlines for the past 20 years. Since the Institute of Medicine (IOM) report in 1999, that estimated as many as 98,000 people die in any given year from medical errors that occur in hospitals, there have been numerous articles challenging, collaborating, and inflating these estimates.[3] Some reports using very sophisticated methods of calculating medical error has pushed the numbers to two to four times the IOM estimates to a point where medical error may be considered the third leading cause of death.[4–6]

We must remember though that the IOM report asserted that the problem is not bad people in health care, but good people working in bad systems that need to be made safer. The IOM set forth a national agenda to reduce medical errors and improve patient safety through the design of a safer health system which I have taken as my duty to my profession.

This journey started with a harm story that involved a colleague, a friend and a team who had entrusted me due to my leadership, knowledge, skills, and compassion for my work. Our team was involved in a medical error. To this day, I remain in belief that this was my fault, I committed an error, even though I am a true believer in the prior quote from IOM report that it is good people working in bad systems that need to be made safer. On that day, I had joined the sorority or the club of having a serious adverse event, an error. Worst of all, it involved a friend and colleague who had entrusted me because of my skill, diligence, judgment, experience, and knowledge. It hit me, I am human, I am not the ROCK. The ROCK, a nickname that had been given to me in high school and resurfaced when I came to Oklahoma thanks to the trauma ED nurses and general surgery residents. I had shown the quote from Lucian Leape several times in talks on patient safety. "Physicians and nurses need to accept the notion that error is an inevitable accompaniment of the human condition, even among conscientious professionals with high standards. Errors must be accepted as evidence of system flaws not character flaws."[7] I never thought this would someday be me. However, if I kept reading the second sentence it gave me solace and a purpose, a duty. We need to fix the system. We also cannot punish the people that are involved with the mistake or the error. Again Dr. Leape was profound in this area, "The single greatest impediment to error prevention is the medical industry is that we punish people for making mistakes." To this day, for our team and myself, I am thankful that our healthcare institution had moved from a pathological and bureaucratic culture to a more generative culture. We had moved from a culture where individuals were fired for mistakes and errors to one in which events are investigated, areas for improvement are pursued, and systems are changed. Institutions have previously concealed errors, where now we are learning and teaching from them. The surgeon who was autonomous with the patient, not necessarily autonomous with the team, was responsible if something went wrong. Our institution has been and is continually learning, changing, supportive, and seeking opportunities to improve patient safety from those involved in events, rather than jumping to punishment. We continue to be moving toward a Just or Trust Culture. A culture where individuals can come forward with mistakes without fear of punishment, knowing that errors can vary significantly in their effects. Knowing generally that isolated events can be dealt with by making the individual or individuals involved aware of the incident or aware of the perceptions that others have regarding the indecent. Just simply discussing it formally or informally. Having a talk that is an "over a cup of coffee" moment. The majority of individuals after the talk will never have another incident or event. However, if the event is more serious or if there is a pattern that persists, then a more guided intervention plan by an authority is performed. These types of interventions are associated with changes to practice, new policies, time frames for completion or compliance, and consequences for noncompliance. Finally, in a just culture if an individual or a team is noncompliant, a disciplinary intervention or separation from the organization is considered. Thus, a just culture balances an organization's need to learn from mistakes and the need to take disciplinary action.

In regard to my and our team's event, we had an investigation, as is expected when safety is at risk. We reviewed (1) What happened? (2) What normally happens? (3) What did policy/procedures require? (4) Why did it happen? (5) How was the organization managing the risk before the event? I took this to heart. At work, I am a perfectionist, a rule follower; it hurts to have to go through this process. It was, however, a way to purge the quilt of the incident and to help prevent further incidents from happening to others. In medicine, we will have SLIPS which are defined as an observable error. An example could be forgetting to push a button to turn on a machine or failure to place a label on a specimen

or tube of blood that is sent to the laboratory. We will have LAPSES, which are nonobservable memory failures or mental errors. This is an event where we may forget to order something, such as a chest x-ray following a central line placement or laboratories as part of our massive transfusion protocol. These types of errors can be accentuated from psychological or physiological states that can cloud judgment, such as anger, fear, fatigue, anxiety, or illness. We must be aware of these stressors in ourselves and team members to mitigate errors. We need to monitor ourselves and our team and be supportive of each other. Errors can also result from VIOLATIONS, deviations from an operating procedure, standard or rule. Violations can be intentional or unintentional. The later due to lack of education, hierarchy, distractions, work load, and time constraints. Organizations must have methods to limit violations by increasing education and reeducation, adjustments of work schedules, and time for task completion.

Safety events at our institution are taken through the widely used retrospective methods for detecting safety hazard, a root-cause analysis (RCA).[8,9] We look for active errors, errors occurring at the point of interface between care providers and the complex health care system. We look for latent errors, hidden problems within the health care system that contributed to the adverse event. The traditional RCA looks for the root cause, the one if corrected would prevent similar occurrences. However, there is frequently not just one root cause in the world of health care due to the complex nature of what we do. There is often operational and environmental issues that lead to errors. Thus, more in-depth review is carried on to look for underlying causes and contributing factors, to formulate effective sustainable recommendations for preventing reoccurrences that lead to reduction of future risks. We additionally proceed with RCA^2, adding corrective actions and incorporating the science of safety into the error analysis.[10] This aspect of the RCA^2 does not just enforce existing policies or simply rely on education to prevent subsequent events. The goal of a RCA^2 is to identify and implement sustainable systems-based improvements and identify strong actions that will provide effective and sustained system improvement and make patient care safer.

Back to the story. What did we find? As in most errors we found faulty systems, processes and conditions that lead to people making mistakes or failing to prevent them. We found "The Perfect Storm." We found a straight line though our Swiss cheese holes in the slices of defenses.[11] There was poor communication, failure of standard processes, distractions, documentation issues, timeliness of documentation, lack of education, role definition, and potential individual physiological issues. We had active errors by the care givers and latent errors of defects in the design, organization processes, and systems that allowed our event.

Prevention of these issues in the future is paramount. There are systems in effect currently that offer examples for mitigation of adverse issues. One of which is the Joint Trauma System of The Department of Defense Center for Excellence for Trauma. Teams of physicians, nurses, and technicians from multiple branches of the military receive training on Clinical Practice Guidelines (CPGs). The Department of Defense (DoD) adopted safe design principles by standardizing, creating independent checks, learning from defects and education. The DoD through this process developed the ability to constantly monitor data, access outcomes, review opportunities for improvement that lead to development of new tools, techniques or new CPGs.[12] This effort has been reported to have led to the lowest death rate of injured troops in combat in human history. I want to take this opportunity to thank all in the audience for their service and efforts in protecting our country and design of these systems.

Our institution used my safety event as an opportunity to expand our efforts and reeducate our perioperative teams regarding our briefing, time-out and debriefing policy. We tightened the time line for Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) training.[13] We standardized by refining our structured perioperative checklist with the assistance of a multi-professional team and then we used TeamSTEPPS training sessions to train multiprofessional teams. We developed individual checks by auditing the compliance and accuracy of documentation on the written checklist. We learned from defects by periodically evaluating the elements on the checklist and added or subtracted elements. We provided data and evidence from other systems to those who doubted these efforts. Hospitals in South Carolina that completed a voluntary checklist-based surgical quality improvement program showed a reduction in risk adjusted 30 day mortality after inpatient surgery over the first 3 years of the collaborative in comparison to other hospitals in the state that had not adopted this process.[14] TeamSTEPPS has been shown to improve performance across leadership, situational monitoring, mutual support, and communication leading to decreased frequency of risk events.[15] At Virginia Tech and the Carilion School of Medicine training to the trauma resuscitation team decreased time to CT scan, intubation, and to the OR.[16]

Our work in building a culture of safety did not just stop with this initiative in the perioperative area. We have also initiated team training and deployment of the Comprehensive Unit Based Safety Program (CUSP) concept developed by Peter Pronovost from Johns Hopkins University.[17] This concept has been used in more than 1,100 hospitals in adult ICUs in 46 states and territories. Implementation has shown to reduce catheter-related blood stream infections, catheter-related urinary tract infections, and ventilator-associated pneumonia.[18] With this concept, we ask our teams to think about how the next patient might be harmed and design systems to prevent this potential harm. Some of our CUSP teams are working on fall prevention, infection prevention, and supply availability for hemorrhagic shock resuscitation outside of the emergency department and intensive care units.

Finally, we have proactively implemented Failure Modes and Effect Analysis (FMEA) for issues regarding medication and blood distribution issues. This is a structured step-by-step approach to discovering potential failures that may exist within the design of a process. What could go wrong (failure modes), why would the failure happen (failure causes), and what would be the consequences of each failure (failure effects) are all reviewed proactively prior to implantation of a new process or protocol.[19]

I truly believe that our health care system at OUMI is performing our DUTY to create a culture of quality and safety as being emphasized by the American College of Surgeons. We are on the road to becoming a high reliability organization (HRO).[20] An organization with collective mindfulness where all workers look for and report even small problems or unsafe conditions that may pose risk and when they are easy to fix.

Preoccupation with failure, never satisfied that there has not been an issue in months and always alert for the smallest signal of a new safety threat. There is sensitivity to operations and encouragement of all, especially those intimately involved in a process or procedure to always report any deviations from expected performance. Commitment to resilience in knowing that errors will occur and safety will be threatened, but this should not disable the organization. Errors should be quickly recognized, contained and mitigated to prevent propagation into major problems. Finally, high-reliability organizations have a deference to expertise. Individuals with the greatest expertise relevant to managing a situation are placed in authority, not necessarily by seniority or rank. We mimic this by use of multiprofessional and multidisciplinary teams to evaluate, strategize, and plan prior to or following risk events. There is no blue print to become a HRO. Leaders at hospitals need to commit to the processes and resources to reach the goal of ZERO HARM. Other organizations are getting there, such as aviation and manufactures. Why not health care? We need widespread adoption and deployment of most effective process improvement tools and methods such as lean and six sigma. We need change management, a system approach that prepares an organization to accept, implement and sustain the improved processes that result from the application of lean and six sigma tools. Our organization is on the way and was rewarded for our hard work in the summary following a recent Joint Commission visit. Best practices were identified in the risk assessment and FMEA process. The system was complimented on its "great culture" of safety.

To conclude, the Duty to Profession aspect of this talk, the DUTY is to DO NO HARM. Learn your lessons well (knowledge), become good at something you care about (skill), do the right thing, even when not convenient (diligence) and make a difference (judgment).

The Duty to Profession would not be feasible without Duty to Self. To be resilient one has to be in the "right emotional and psychological state." Personal losses, workloads, stressors, such as difficult patient scenarios, academic pressures, and outside commitments can distract from both duties. When all this occurs at the same time, it can lead to potential burnout. A quote from Lou Holtz, "It's not the load that breaks you down. It's the way you carry it," will decide how well one can perform and lead. I had a time earlier in my career where I was not carrying my load well. My well-being index was at a low point in categories of meaning in work and quality of life, which can be translated into high in risk of medical error. Thank goodness that this time did not coincide with the prior harm event I described or my response to it may have been a bit different. It is known that commitment of an error can lead to health care providers being a "second victim" of the event. Second victims feel personally responsible, second guess clinical skills and knowledge and have a high incident of depression. The more severe the error or the morbidity, the greater the impact. A number of health care systems have put into place support systems for health care providers who are second victims. The University of Missouri has the *for You team*, Carilion clinic has the *TRUST team* and at OU Medicine we have *Colleague Support*. I am so fortunate that fellow faculty and the chair of surgery at that time recognized my situation and were supportive. This allowed me to take some needed time off, devote time to self and family, exercise, attend leadership training, talk with professionals, and develop a new passion for my work. I am so appreciative of the understanding, support, friendship and compassion that the team at OU offered me. I also owe a huge debt of gratitude to the support from the Western Trauma Association. My issues were not known to a number of family, friends or colleagues. Coming to the WTA annual meeting, being with friends, skiing, experiencing the fellowship in the snow and having the ability to clear my head is a huge part of remaining on the better side of the well-being index. Knowing there are friends from this association who can support and advise just a phone call away gets me through tough times and decisions. I heard a term "sistering" while driving to work one morning. It is a carpentry term that is a method where additional supporting boards are placed across a joist to support the area when the load may be too heavy. This made me think of the many sisters, aka "The WTA Babes with Blades" that have supported me in my Duty to Profession and Self.

Finally, we would not have such a successful meeting had I not answered a phone call one Sunday night 6 years ago and reconnected with my now husband, aka the AV guy, Jerry. He is the most important thing in my life and a key to maintaining my duty to self through our many adventures the past several years.

In closing, I am humbled and want to thank the Western Trauma Association for the honor of allowing me to be your president this past year.

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