

A Culture Shift To Improve Practice: Radiation Protection Culture

Charles Denham, MD

Charles Denham, MD: You know I really wish I could be with you there in Germany today; however, family issues have kept me home in California. I am with you in spirit and I hope this message will be helpful to you and we'll make it available to anyone that wants it.

My focus area is on culture, and in the United States there is nothing more powerful that got our attention on radiation issues than stories about patients that had had excessive doses of radiation through CT scanning and this really caused a huge impact. Now we could also use stories to change our culture or impact our culture, and on our recent movie, our Discovery Channel movie, we addressed the four T's of leadership that can be used to change and improve performance improvement and culture and they are truth, those are the facts, figures and knowledge that we can deliver to someone, that engages the head. Trust, that is the currency of the heart and when we use stories or tell stories about hope, dread, fear and we, we tell patients stories that actually grips the emotions and people could remember the really important issues regarding a subject matter area. And then, the third T of leadership that we address in this movie was teamwork, how we could engage the hands in the work of improvement. So we engage the head, the heart and move the hands to action. And then what we found in high reliability organizations like aircraft carriers and aviation and the Blue Angels demonstration team, was that, uh, they train from within and they use their own voice to teach others.

Captain Greg McWherter: We can take any sailor brain and teach them how to be a Blue Angel, because the system, the process, we take great sailors and make them even better. And when you teach them how to work as a team and how to represent the Navy and the Marine Corp, but, uh, we can do it for anyone.

Perry Bechtle, DO: There's an infinite number of scenarios that might unfold operationally that you just can't train for. So what we have is an invisible safety net that that helps deliver both reliability and safety.

Charles Denham, MD: How important is trust?

Captain Greg McWherter: I always think of the three pillars of teamwork being some element of sacrifice, some element of communication, but the biggest element is trust, especially on our team. You know, I'm one of the few pilots on the planet that doesn't actually preflight my own airplane. Uh, I go out to my airplane for an air show, I trust that my crew chief and my first officer have gone over that aircraft with a fine toothed comb. When they shake my hand and they say boss, this jet's ready to go, I know that they mean it.

Charles Denham, MD: So cultural change and maintenance of culture in a high performance environment, we found in high performing organizations where that they, the leaders really leverage truth, uh, to engage the head, trust to engage the heart, teamwork to engage the hands and then training to engage the voice, uh, to move to scale. The area we've been working on in this cultural transformation is applying this framework, the Five Rights of Imaging, which is the right study, the right order, the right way, the right report and the right action. So our recent Discovery movie gave us an opportunity to address the five rights.

The Five Rights of Imaging Program is a free framework, developed for the public with global experts that helps make sure that the right study, with the right order, perform the right way. Generating the right report drives the right action for every single patient every day. It embodies the priorities of radiology organizations focused on radiation safety. So as we talk about the Five Rights of Imaging, what do consumers need to know?

David Hunt, MD: It's wonderful to have the right study. We often don't pick the right tests and duplication of tests are enormous in terms of expense. Given how much information a physician has to work with, it's actually not surprising that we misorder so often. They really need the ability to have a checklist to be able to look and figure out what is the best test right now for this patient in this circumstance.

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Steven E. Seltzer, MD: Patients and consumers know a lot more about what's entailed now, particularly with the low dose technology, and they're asking for it more, and I think it's important that we begin to act or are responsive to their needs. Getting the clinician the information that he or she needs when the time is most appropriate, when they're seeing that patient, that makes a huge, huge difference. The actions that we take after a test are critical and often we fail to connect all the dots. The good provision of services, the good delivery of medical care should be well informed and having all the information that you need to make the right action with the appropriate amount of information is essential, so that when the patient returns to the doctor and reviews the results of the imaging studies, uh, hopefully it will inform which direction are we going. Uh, is this a disease that needs aggressive intervention, is it a disease that, uh, can be watched, uh, and hopefully the imaging test helps to answer that question.

Charles Denham, MD: An article, a free checklist and Smartphone application provide a guide to consumers and caregivers of the Five Rights.

Steven E. Seltzer, MD: It's extremely important. Uh, I think we know the variation, uh, in the use of imaging technology is still tremendous. And, uh, to, uh, have approaches that use evidence based information to select the proper tests and perform it the proper way would provide enormous dividends and again, uh, provide the, the right care at the right place at the right price.

Ramin Khorsani, MD, MPH: There will never be a more exciting time in healthcare than today. That is, get on board, help change the world. We can save money and improve quality at the same time and use those savings to help pay for infrastructure that we need so badly in healthcare. And that's, that's really our job. And I think to energize people is to say, this is the unique time, this is a unique time and it's not going to happen three months from now, six months from now, nine months from now, it starts today, so get on board. It's gonna be fun.

Charles Denham, MD: It's absolutely critical that we focus on all of the issues around each of the Five Rights and not just focus on the dose that's delivered and the ionizing radiation that's delivered with a particular study, but actually expand entirely around this root. As a radiation oncologist who was one of the leading referrers of high-tech studies, I understand how critical it is to un, to make sure to identify what study needs to be ordered and make sure it's properly ordered so we get the results and don't need duplicative studies.

The organizations on this slide all participated in the development of the Five Rights and, and dissemination of this focus and a number of articles, Dr. Don Frush, one of the leaders that's involved with this meeting, and others have been very actively involved in a special issue of the Journal of Patient Safety, of which I am the editor in chief, uh, to present a number of the issues and a number of the areas of critical importance.

Uh, this slide really addresses not only the Five Rights of Imaging, but then applying that to children. That, it turns out that everything we do for children has direct applicability to adults, and what we're learning about children in the, in the United States, 10 percent of all imaging studies are on children, and 90 percent of those, we call it our 90/10 rule, 90 percent of those are done at non child focused facilities. This is really important in that it's very hard to maintain the proper protocols and make sure that we're right-sizing the dose and the protocols, uh, for studies like CT scans of children. Absolutely vital. And we're learning that, uh, that, uh initiatives like Image Gently are absolutely vital, but it's so important to make sure that we have compliance with those.

The slide that has the Five Rights of Imaging with the red pie slices, represent the areas of risk, and those are areas of risk of overuse, underuse and misuse of ionizing radiation and the studies that are use, that, that use it. Um, in terms of, uh, the sector between the fra, the right study and the right order, there's significant risk as to whether we should even order a study at all. And then what is important is that ordering the proper study, the proper sequence of studies and make sure that prior baseline studies are available for the radiologist. If not, we may not get the information

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we need or the vital information, uh, that could be obtained by delivering ionizing radiation, the slice that, uh, that overlays the area of the right way addresses, uh, dose limiting and right sizing of protocols, as well as the technologies, the scanners that deliver the least amount of ionizing radiation, or even using ultrasound instead of, uh, studies that might utilize ionizing radiation.

And then the other two red pie slices really address, uh, two other areas of risk. Clearly we all are familiar with, uh, getting critical studies, uh, and making sure that the critical results of a study are important and that is very obvious. But what was really, uh, frightening and actually, uh, something that really was a wake-up call for us was that working with malpractice firms we found that there is significant risk, malpractice risk and harm that happens even downstream after a study is, uh, might be ordered properly, might be, uh, undertaken. You might have the right study, the right order, the right way, the right report and yet if that, actions are not properly taken, primary care physicians, at least in the United States, has significant liability in terms of the actions that are taken afterwards based on those studies, and then for children, the long-term issues.

We've used the Five Rights for cultural transformation. We've been testing this with governance, leadership boards that have no training in radiology, in fact no medical training many of them. And, and in the United States and abroad, we found that people could really understand the Five Rights and they, and we always say to the boards, the governance leaders and administrative leaders, you don't need to know all the answers, you just need to know the right questions, and I think that's absolutely critical as we talk about the cultural transformation that is to occur.

Now in the United States we're doing everything we possibly can to reduce overuse, underuse and misuse of imaging. Imaging will, will move in the United States from being a profit center for organizations to a cost center, and that, uh, gives us a great opportunity. One of our great global CEOs Bill George of Medtronic of former years, has said never waste a good crisis and I think this, the crisis of harm and waste is really a terrific opportunity for us to really look at the issue of consultative radiology. We're now, uh, we now have pioneering organizations like the Cleveland Clinic and the Brigham and Women's Hospital who are pioneering the concept of taking a radiologist off of reading studies and really transforming the culture of performance improvement and starting to advise the doctors that are ordering the studies upstream and so the blue arrow represents moving upstream and advising them, so they're actually advising the doctors that are ordering the studies, many being primary care and, um, and internal medicine doctors, and then moving downstream and advising them as to how, uh, the studies could be optimized and the actions could be optimized, uh, to follow. So, this has really given us a great opportunity to have a transformational sort of impact, uh, on, uh, what we're doing.

A study that will be coming out, or a report will, that will be coming out in the Journal of Patient Safety is an article that, uh, that I'm writing and just polishing now, which is, is my CT scan safe, a checklist for consumers. And, uh, this graphic really addresses them, and, uh, this is a checklist both for caregivers and for patients to address whether we have the right, uh, the right test, the right order, the right way, the right report and the right action, uh, empowering patients to actually be involved in, in the decision making and in American and in many organ, uh, in many parts of the world, patients are the best communicator of the studies and the best courier of those studies.

Finally, the areas of major focus of our research are taking the Five Rights of Imaging and applying, um, overuse, underuse and misuse to, uh, the adoption framework of awareness, accountability, ability in action. That is an innovation, uh, framework we developed over the last 20 years and then being able to look at leadership practices and technology. So this slide actually addresses the intersection of leadership. We need engaged leaders, we need the best practices, and we need the technologies that can enable those leaders to implement and ensure that those best practices are undertaken.

I won't read the slide for you, but I will tell you that the, uh, organizations where we've seen the radiation accidents and we've seen, uh, overdoses of radiation, uh, we have seen this kind of

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panel, and what is in red is, uh, the, the, the absence of, uh, really successful improvement and, uh, quality. And in those organizations you could see leadership has been a major failure, um, adoption of practices has been poor and, and, and failed, and the technologies have not been utilized to reduce those dosages. What's really been interesting; however, is as that, as we've looked at some of our really good organizations and they've looked at them themselves, many organizations that are very good have had what we call migration of boundaries and normalization of deviants. That's where the protocols might be in place but they're not being used. We're aware of the gaps, but we're not closing the gaps. Our leaders are not uh, uh vigilant at making sure that we're doing the right things and so this pattern is the pattern that we've seen and some organizations that are very surprised by how well they're doing.

And then finally, some organizations, and I won't name the first two, but this organization, uh, I'm pleased to say is the Mayo Clinic in Rochester. The vigilance that they have had in focusing on, uh, making sure that they're using the right protocols, uh, for the right patients and right sizing them and the right technologies to minimize dose has been very successful for them.

So, in summary, I would say that, uh, if we are to change the culture, if we are to have a cultural impact in this space, it's important to think about the four T's of leadership, which is, uh, truth, trust, teamwork and training. Truth, the currency of the mind, making sure we understand the science of improvement and our is state and our harm and the gap we need to close, that we need to practice the second T which is trust and using stories and patient stories, get the emotion and capture the imagination of folks. Teamwork is the way that we work together using, whether it's Six Sigma, or Toyota Lean Production methodologies or others. And finally, training and I think that's where those of us that are involved in this space have to recognize that we must train from within with our own leaders within because that's how we can sustain and manifest high performance.

Thank you, and I, I really wish I could be with you and I hope you have a fabulous meeting.