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The Journal of AHRA: The Association for Medical Imaging Management

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An AHRA Legacy

By Debra L. Murphy, CAE

In my 11 years as a staff member with AHRA, I have had the great fortune to work with many members whose legacies the organization will benefit from for decades to come. Gordon Ah Tye is at the top of that list. As he looks toward retirement, this issue marks his last official column in *Radiology Management.* Over his 20+ years penning the "On That Note" column, a lot has changed while so much has stayed the same. In 1996, on the heels of the relatively new concept of managed care, he wrote about the government asking healthcare workers to do more with less. Sound familiar?

Gordon wrote a lot about family: the birth of his daughter followed up decades later with the birth of his granddaughter; the life lessons from his parents, and the recent passing of his father. He also wrote a lot about his AHRA family and the many members who have dedicated their time and expertise to this organization. Those who gave it direction, nurtured it, and provided leadership. Well, Gordon, you are among those and we honor you for the years of service you have given AHRA. We stand on the shoulders of giants.

On a *side* note, Gordon will be presenting a session at the Annual Meeting in Anaheim this summer (July 9–12). If you're there, join him for his talk "On That Final Note"—the goal will be to provide a historical framework of the industry and AHRA. In true Gordon fashion, though, he will also provide positive and uplifting guidance on how to effectively manage ever growing workloads and stress that influence you every day. As he wraps up his career in medical imaging, his words from the Nov/Dec 1996 issue of *Radiology Management* still resonate today and will surely resonate in the year 2037: "As pressure continues to build, we must support one another and find ways to manage the services we oversee. We must network and share ideas that help reduce the pressure we all feel. Remember, don't worry about what you can't control. Just do the best you can."

Deb Murphy is the Deputy Executive Director at AHRA. She is also managing editor of Radiology Management *and may be contacted at dmurphy@ahra.org.*

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All about Words

By Paul Dubiel, MS, RT(R), CRA, FAHRA

As the editor-in-chief of the journal and someone who gets to write regularly, I have developed a new appreciation for words. Over the course of my volunteer term, I have read a lot of words and given a lot of feedback about them and what they mean to me.

I was not always like that. As my wife will tell you these things aren't really important to me. Proper use of pronouns? Who cares. Changing it mid-sentence makes the story more interesting—even the cat looks at me as to say who are you talking about? There are only two options: pick one and stick with it.

When I first met my wife she was confused by what words I used and how I used them. How you say things in Bartlesville, Oklahoma is not how we say them in the mean streets of Sheepshead Bay, Brooklyn. We didn't wait in line, we waited on line. No woman carried a purse, they carried a pocket book. And we didn't wear jeans, we wore dungarees. All these things confused her and sometimes I wonder to this day how she saw fit to look past my Brooklynese and marry me.

My kids now take after my wife as grammar police. Nothing makes my kids roll their eyes more than the inappropriate use of the word "literally" as in: "If he dates her I will literally die" or "That was literally the worst meal I have ever eaten." Another favorite (which is also one of my pet peeves, thanks to the grammar police who frequent the back seat of my car) is the use of "irregardless" in a sentence or the phrase "I could care less" as in "I could care less if I ever saw them again." I believe this total lack of proper word usage is one of the reasons that when I told my wife I was going to be the editor of AHRA's journal she just looked at me and said "You aren't serious. No, wait, you are serious. Do they know who you are and what you are capable of doing to the English language?" To be truthful, I still am not the grammarian my family wishes me to be. By the time the words come to me, Deb has worked with them, put them in the right order, polished up the text to make sure everything I write makes sense and is in proper grammatical context.

I am half way through my second term as editor and am totally awed by the quality and quantity of articles that I read for every issue. We can't do it without you. You are the experts who have made the changes, implemented new technologies, saw problems and fixed them, made a difference in your organizations and communities. We need you to share that knowledge with other AHRA members any way you can and we have numerous ways to do it. Write an article either for the journal or *Link*, speak at a conference, host a local seminar, or mentor a new manager.

As I write this column, I have just made my arrangements to be at the AHRA Annual Meeting in Anaheim this July. Going through the list of sessions and the activities all aimed at professional and personal growth I realize what a great opportunity I have being part of this organization for as long as I have. I owe it all to those who contribute their time and talents by helping me become a better manager and person. So keep up the good work, keep writing and volunteering, keep making our organization all it can be and more. You are what makes AHRA great and, with your help, even better in the future.

On that note, I would be remiss not to mention that this issue will be Gordon Ah Tye's last as he is retiring to spend time with his family (his other family, not the AHRA one). Gordon has been a mainstay on the back page of the journal for many years. He started writing in January of 1996 when the column was called "Looking and Listening" with his first article entitled "The Pitocin of Managed Care." The title of the column changed to the "On That Note" in 2000 so, if I do the math right, that's 20+ years times six articles per year and you have enjoyed over 120 articles full of Gordon's wisdom and anecdotes. In addition to being a regular contributor to the journal, Gordon also served as AHRA president in 1998-1999, received the Gold Award in 2001, the Minnie for Most Effective Radiology Administrator in 2006, and countless more roles and accolades. My first memory of Gordon was at my first AHRA Annual Meeting in Las Vegas a long, long time ago. He was one of the

keynote speakers and he gave a speech while playing the piano. I thought to myself: this guy is good. When I grow up I want to be just like him.

To me, he will always be the author of the article on the last page of *Radiology Management* that I read first. (Admit it, you do it too.) He has taught me a lot over the years, his wisdom and kindness has made me and each of us better leaders and people. He has given us the ability to confront and handle all kinds of situations in a light and people focused way. He has made difficult problems solvable and made anything that comes our way an opportunity to shine, not something to fear and dread.

So, Gordon, I want to thank you for all you have done for me and all AHRA members. Your dedication and giving spirit is why AHRA is and will always be the industry leader that we are. Good luck in retirement and know you can always take this spot if you feel the urge to write one more column. You are always welcome here.

Paul A. Dubiel, MS, RT(R), CRA, FAHRA has been the senior director, imaging at Seton Family of Hospitals in Austin, TX since 2002. An AHRA member since 1993, he is currently editor-in-chief of Radiology Management *and has volunteered for numerous other task forces and committees. Paul can be contacted at pdubiel@seton.org.*

Healthcare Legislation Setback—Now What?

By Bill Finerfrock and Nathan Baugh

In the immediate aftermath of Speaker Ryan's decision to suspend further action on the American Health Care Act (AHCA), many in Congress suggested that this was the end of the GOP's efforts to repeal and replace the Affordable Care Act (ACA). Statements from House Republicans and the White House indicated that they would move on to other issues such as tax reform and infrastructure where consensus is, perhaps, more achievable.

However, it would be a mistake to presume that efforts to repeal and replace the ACA are dead. Although many challenges still need to be overcome, House Republicans and the White House are still trying to find a path forward on their seven-plus year campaign promise to repeal and replace the ACA.

In the weeks leading up to the decision to suspend further action on the AHCA, the GOP leadership and the White House unveiled a three step approach to repeal and replace the ACA.

Phase 1—Legislatively repeal/replace those portions of the ACA that could be dealt with through budget reconciliation;

Phase 2—Change, via regulation, those policies that could not be changed via budget reconciliation.

Phase 3—Enact new healthcare reform policies that were not part of the ACA but reflect GOP values with respect to healthcare policy.

With Phase 1 currently under suspension until further notice, what happens to Phases 2 and 3? How will the Department of Health and Human Services (HHS) move forward on the regulatory front while Congress contemplates statutory changes? The following is our assessment of possible options with respect to Congressional and regulatory action on repealing and replacing the ACA.

Congress

The failure to garner enough support amongst the House Republican conference for the AHCA was the result of competing policy interests of the conservative House Freedom Caucus and some of the more moderate members of the party. Both groups of holdouts had enough votes to prevent the bill from being passed with only Republican votes. Any policy concession to one group would lead to the other group to oppose the bill. Negotiations to obtain support from these groups only failed in the context of the date the House leadership chose for a vote.

On March 28th, the House Republicans held a closed door meeting to discuss next steps for their health reform efforts. Members representing all segments of the GOP Caucus expressed a willingness to continue working towards passing a bill that repeals the ACA but did not decide if this will be the AHCA or a new bill. Of course, expressing a "willingness" to work together and actually working together are quite different.

While an agreement in the near term by House Republicans is still possible, the House GOP leadership and the White House have announced plans to move on to other issues. However, this does not prohibit the various interests from negotiating behind the scenes on some sort of compromise. Should these negotiations bear fruit, the GOP leadership could quickly make modifications to the AHCA and bring the legislation up for a vote. The timing for reconsideration of the AHCA is still uncertain. Some believe that the legislation could be reconsidered before tax reform soon, others say next year.

Achieving consensus among the House Republicans conference is still elusive and may prove fruitless. If the political pressure builds on Republicans to keep their promise to repeal and replace, some of AHCA's Republican opponents may be more willing to cut a deal to get something done. Even if the House is able to pass an ACA repeal bill, the Senate would have to also pass a bill and then negotiate an agreement with the House before it could get something to the President for his signature.

While GOP Senators are every bit as vocal in their recitation of the "repeal and replace" mantra, achieving consensus within the Senate GOP Caucus may prove every bit as difficult as it has been in the House. Throughout the lead up to the House vote on the AHCA, many GOP Senators expressed either lukewarm support for the AHCA or concern about some of the more controversial provisions (ie, Medicaid reforms/changes). Therefore, even if the House is able to pass an ACA repeal/replace bill, it is almost a forgone

conclusion that the Senate will pass a significantly different bill. Reconciling the differences between the House and Senate versions presents another significant hurdle for health reform.

Administration

When HHS Secretary Tom Price took the oath of office in February, he probably assumed that his first job would be to oversee the government's transition away from the ACA and the implementation of its replacement. Although the ACA is going to last longer than many expected (month? years?), Secretary Price will still move forward with a modified version of "Phase 2" of the GOP plan. This prompts us to ask two essential questions:

1. What can Secretary Price change via rulemaking?
2. What will Secretary Price change via rulemaking?

There are over 990 instances where the phrase "the Secretary shall" appears in the ACA. Which is one way of saying that the HHS Secretary was delegated a significant amount of power under the ACA. This also means that Secretary Price has the same power under the law to rewrite those regulations and policies.

Secretary Price has some very tough political decisions to make:

1. Will Secretary Price try to make the ACA work in order to ensure that individuals purchasing insurance through the individual or small group markets are insulated from the market disruptions that could occur?
2. Will Secretary Price leave the ACA relatively untouched and simply maintain the status quo policy, to show the country it is failing on its own?
3. Will Secretary Price actively seek to undermine the ACA to try to build leverage for another legislative reform effort?

Looming over any executive action Secretary Price may choose to take is the threat of legal challenges which can take years to resolve.

We will learn which approach Secretary Price adopts by watching HHS regulatory action on the following items:

- United States House of Representatives v Burwell, et al—This lawsuit was filed in 2014 by the GOP controlled Congress and challenges the Executive Branch's ability to provide subsidies to individuals for copays and deductibles for individuals with incomes below 250% of poverty. Congress maintained that the money to pay these subsidies to the insurance companies was never appropriated by Congress. The Administration argued that the authorization was contained in the broad discretionary authority granted to the President under other provisions of the ACA. In May of 2016, the Court ruled in favor of Congress but suspended enforcement of the decision pending the Obama Administration's appeal.

  Will the Trump Administration drop the appeal and ask the district judge to uphold her ruling? Doing so would mean that it would be up to the GOP controlled Congress to appropriate the $175 billion needed to fully fund this subsidy. Key Congressional leaders have indicated that they will approve the funding to ensure these payments to insurers continue—at least for now.
- Individual/Employer Mandates—The Trump Administration could choose to suspend enforcement of the penalty on individuals and employers who do have or provide health insurance. The Obama Administration delayed the implementation of the employer mandate through executive authority setting some precedent for the non-enforcement of these taxes.

  The CBO analysis of the AHCA suggested that if the individual mandate were repealed, 6 million people would voluntarily discontinue the purchase of health insurance. Such a move would almost certainly put the individual/small group market in the so-called "death spiral" whereby healthy individuals no longer fearing a penalty would drop out of the risk pool, which raises costs on individuals who continue to purchase insurance.
- Advertising—The Trump Administration pulled ads at the end of the 2017 enrollment period. Will the Trump Administration encourage people to sign up next year or see advertising as a waste of money? This might drive down ACA enrollment feeding the narrative that it was a "failing" program.
- Market regulations—In early February, HHS issued a proposed rule shortening the open enrollment period for next year, and loosened up a few of the essential community provider requirements. These changes should make the ACA market a little bit more attractive to insurers potentially lowering premiums; however, a shorter enrollment period may also lead to fewer enrollees altogether.

Predicting the future in Washington, DC is always a dubious proposition. Only a few months ago many observers spoke as if the passage of healthcare reform was a certainty. However, the events of the past month have left healthcare policy experts across the beltway guessing what will happen next.

The AHRA Regulatory Affairs Committee will continue to track these developments and keep membership updated during these uncertain times.

Bill Finerfrock is the president and owner of Capitol Associates, a government relations/consulting firm based in Washington, DC, who has partnered with AHRA on their regulatory affairs issues. Nathan Baugh is an associate with CAI. They can be contacted at bf@capitolassociates.com and baughn@capitolassociates.com.

MRI for Prostate Cancer Detection

By R. Daniel Cinotto, MBA, CRA

The credit earned from the Quick Credit™ test accompanying this article may be applied to the asset management (AM) domain.

EXECUTIVE SUMMARY

- Prostate cancer is the second leading cause of cancer related death in men. New technology and methodology now exists in the realm of magnetic resonance imaging that can dramatically change this statistic through early detection.
- Until recently, MRI was not included in the care continuum for the detection of prostate cancer. The primary reasons for the low adoption of MRI have been suboptimal technology, physicians who have not kept abreast of new technology, and a general skepticism.
- In changing the standard of care, facilities will need to factor in technology and equipment changes, as well as deciding how to leverage it as a revenue stream and physician education.

The American Cancer Society estimates that 26,730 men will die from prostate cancer (PCa) in 2017, and another 161,360 will be diagnosed, which makes it roughly 1 in 39 men who will die from the disease in the current year.[1] These statistics place it as the second leading cause of cancer related death in men, according to the same source, behind lung cancer. A number of urologists might say that: "most men will die with prostate cancer, but not of it." That is a frightening statement about the second leading cause of cancer death in American men, considering especially that it is typically a slow growing cancer. New technology and methodology now exists in the realm of magnetic resonance imaging (MRI) that can dramatically change these statistics through early detection.

The Current Standard of Care

The current standard of care for PCa detection has been the source of ongoing debate since the United States Preventative Services Task Force (USPSTF) released its final summary on the prostate specific antigen (PSA) blood test in 2012. The PSA test was the only triggering event for a PCa biopsy outside of the digital rectal exam, which, given its embarrassingly low efficacy, had fallen out of favor. The USPSTF gave the test a 'D' grade citing that it created over diagnosis and treatment of clinically insignificant, as well as clinically significant, cancers.[2] The USPSTF did note in their summary that there is no upper or lower threshold for cancer in the test, but a rise in the PSA could indicate that there is an issue of some kind: benign, metastatic, or otherwise. Up until 2012, and for those physicians still using the test today, a PSA threshold of 4.0 ng/ml has been used to recommend a trans-rectal ultrasound (TRUS) biopsy.[3] The efficacy of those biopsy procedures has also come into question, and whether or not the biopsy is worth the negative implications to the patient: infection, hematuria (blood in urine), and hematospermia (blood in semen) top that list.[4] A fairly generalized conclusion given current literature is that the TRUS biopsy has an estimated 47% false negative rate and that 30–45% of patients are upstaged from their initial diagnosis after a radical prostatectomy.[5] Compared to the use of MRI as a means of detection, these numbers are rather grim. The impact of the decline in the use of the PSA test, given the USPSTF recommendation, has seemingly caused an increase in metastatic disease at the time of diagnosis as well.[6] It would seem that given this research, the current standard

of care for PCa detection is not working very well in, what the American College of Radiology notes is, a $10 billion per year sector of the healthcare space.[7]

Using MRI as a Means of Detection

Until recently, MRI, in any fashion, was not included in the care continuum for the detection of PCa. The primary reasons for the low adoption of MRI have been suboptimal technology, physicians who have not kept abreast of new technology, and a general skepticism.[8] This is all starting to change. MRI technology, as it relates to PCa detection, has improved dramatically in recent years and continues to evolve at a rapid pace today; even since the most recent medical school graduates have begun their practices. Physicians and patients alike are becoming more educated on the use of that technology. Physicians are also starting to utilize MRI pre-TRUS biopsy, some because they believe in using all the resources at hand, and some because their patients have convinced them to do so. While there is a healthy amount of debate out there as to the efficacy of using MRI to detect PCa, one cannot deny the many men who successfully avoided biopsy because they had this exam done. What does this mean for administrators? It's another revenue stream, if you can get it.

The reality is that we are living in a different era than we were even just five years ago. Patients have access to a lot of the same information that physicians do (PubMed for example), and that information travels at the speed of light thanks to the Internet. Patients are more informed than they ever have been before, and medical technology is moving nearly just as quickly. When this is compared to the reluctance to change that exists in modern medicine, a vacuum is created; which is where MRI for PCa exists today. While nearly all of the preliminary data pertaining to its efficacy is still very promising, it has yet to be considered "standard of care." However, patients are still willing to pay for it, even if they need to do so out of their own pockets, because most, if not all, insurance plans will not cover the exam as of current (we have seen some carriers pay for the exam in arrears if positive pathology is found, but the patient needs to submit that claim himself). We have gotten word recently that some insurance carriers will pay for a prostate MRI after the first negative TRUS biopsy, but, in theory, that defeats the entire purpose (assuming the purpose was detection as opposed to targeting or fusion; ie, scan first, biopsy later). In fact, the American Urological Association's official consensus, as of December 2016, is to use MRI after the first negative TRUS biopsy.[9]

Cost has also been one of the larger objections to using MRI to image the prostate as a means of early detection. A cost analysis is going to vary quite drastically depending on where the exam is performed and what the administrators, radiologists, and medical staff have deemed necessary to perform the exam. For example, in the Omaha, NE market, where we are located, our charge is $595 for the exam. We do not use a dynamic contrast enhancement (DCE) sequence (keeping our offering 100% non-invasive), we utilize the only prostate specific "garment" coil on the market, and the only patient prep is no food four hours prior to the exam and an anti-gas agent (Gas-X, etc). The total magnet time is less than 30 minutes. Compare this with a typical hospital offering and some dramatic differences are seen. The typical hospital offering consists of the use of the endorectal coil, a Gadolinium DCE sequence, and some use muscle relaxing injections to ease the coil discomfort. The patient prep is typically multiple enemas, paid for and administered by the patient hours before the exam. The total magnet time is anywhere from 45-60 minutes depending on patient movement in addition to the recleaning/sterilizing of the endorectal probe. This exam averages $2500 in the Omaha market. Given the latter example, it is rather easy to ascertain why patients would opt out of this kind of exam. Since this has been the "standard of care" in prostate MRI for many years, this is the stigma that needs to be overcome when trying to increase utilization.

Changing the Standard of Care

When a facility starts using MRI for PCa detection, the technology piece is the most common question asked about since the standard of care up until recently has been the endorectal coil (which is a big reason why patients have not asked for the exam in the past, much less facilities wanting to offer the exam). There are other alternatives out there, however. There is the non-invasive prostate/pelvic coil mentioned earlier; a combination of surface array coils, such as the body and spine coils (or comparables) that come in most OEM coil packages can be used; or the traditional road of the endorectal coil.

The second biggest part of this question is the 3.0T versus the 1.5T magnet strength issue. Which one is better at imaging prostates? The answer is not as clear as it may seem, and largely depends on the patient (which is typically contradictory to what you may hear). The patients who are not claustrophobic and are smaller in terms of body habitus (or have scanable implants in the scan region—hip replacement, etc) will see better results in a 1.5T magnet due to the physics behind the DWI (diffusion weighted imaging) sequence and less artifact. Larger patients, claustrophobic patients, and/or patients without scanable implants tend to experience better results in a 3.0T magnet. Some will

Patients are more informed than they ever have been before, and medical technology is moving nearly just as quickly.

argue that 3.0T strength is the standard in prostate imaging, but they tend to discount the physics behind the DWI sequence which can lead to a difficult call or a missed lesion, or the increased diagnostic performance realized with improved surface coil designs on the 1.5T systems. This isn't to say that effectively scanning prostates can't be done on one or the other, but the radiologist and technologist should be aware of the differences. The antenna selection is probably a more important determinant in getting a diagnostic quality image than is the magnet strength.

Decisions regarding the exam itself can dramatically impact the success of the revenue stream as well. The main issue at hand today is the decision to use DCE or not. A lot of administrators will run into the "current standard of care/practice" argument here. Pelvic MRI typically gets the DCE treatment, but that does not necessarily mean that prostate specific MRI needs it (assuming the patient has not had a prior biopsy or there is hemorrhaging within the tissue). Even as recently as 2015 at RSNA, research was presented as to the efficacy of using DCE in prostate MRI finding that an "abbreviated prostate MRI allows diagnosis of biologically relevant PCa in under 10 minutes magnet time, without endorectal coil, and without contrast agent."[10] The abbreviated prostate MRI they mentioned is typically referred to as bpMRI, or biparametric MRI, whereas if there is a DCE sequence, it is referred to as mpMRI, or multiparametric MRI. The choice is yours, but I would recommend reviewing the paper from RSNA as it speaks to the actual efficacy of DCE in PCa detection using a surface coil and could save some money in time and materials in the long run.

Perhaps more pertinent are the marketing implications of this choice—ie, it is much easier to "sell" the notion of a non-invasive bpMRI compared to the more traditional and invasive endorectal mpMRI with contrast as a means of detection. Regardless of which way you choose, bpMRI or mpMRI, the availability, advantages, and urgency of utilizing the exam will have to be communicated to the physician referral base. The key to this is knowing which types of physicians to market to, and what aspects of the exam will appeal to them.

The first group of physicians that should be communicated with is the urology community. It is highly likely that they have operated under the current standard of care their entire careers, so they may not be too keen on trying something new. A substantial amount of the research cited in this discussion has proven to be a great conversation starter with this specialty in my experience, and adds a considerable amount of credibility to the offering. The discussion will likely be ongoing, but if you can get them to try it once, you will likely get them to try again . . . and again . . . and so on.

The second group consists of primary care physicians and internal medicine physicians. These are the groups that do the routine PSA testing at annual physicals. When a man reaches that 4.0 ng/ml threshold, these physicians have two options: refer the patient to a urologist for probable TRUS biopsy, or send them for an early detection MRI. It is in this case that if the patient's PSA rose because of some other benign reason, he can successfully avoid the TRUS biopsy and stay under the continuing care of his PCP. You will have patients singing your praises from the highest of mountain tops in these cases. For patients whose PSA rose due to clinically significant cancer, they will need to be forwarded on to a urologist for TRUS biopsy. Most insurance carriers will not pay for treatment without confirmed positive pathology from a biopsy. However, the advantage to already having the MRI done is that patient is now a candidate for a MRI-TRUS fusion biopsy, and you have provided the urologist target(s) of the suspect tumors in 3D. This type of image guided biopsy is becoming more and more common.

Two common objections from referring physicians have been lack of insurance support and an unwillingness to refer due to lack of familiarity with the exam. When used as a screening method (commonly referred to as biopsy naïve), we have seen insurance companies pay for the exam in arrears as mentioned earlier, but rarely before. In those instances of prior authorization, patients were typically not biopsy naïve and the insurance company took the American Urological Association recommendation of using MRI after the first negative TRUS biopsy. We do believe that the patients have a voice, and we encourage them to file their own claims and give them all the appropriate information to facilitate that process. On a number of occasions, referring physicians have uttered an old medical school adage, "don't be the first to try something new, but don't be the last" (a physician said this very thing in one of my first marketing meetings where MRI for PCa was the focus). That said, we have seen a heavier referral weighting on younger physicians, and when targeted with the appropriate marketing efforts, we have seen substantial increases in scan volume from those physicians. The older generation of physicians seems to be more difficult and resistant to change. However, all physician education remains the concentration of most marketing efforts.

Moving Forward

Decisions have been made on technology and contrast, and the team is working on a scanning protocol—what issues can be expected moving forward? The first, and possibly most notable, are the radiologist qualifications. Have they read prostate specific pelvic MRI before? If not, or they have had limited experience, consider having them complete a small fellowship of some kind. The American College of Radiology's scoring system for PCa MRI, the PI-RADS (prostate imaging reporting and data system) scoring system, is a simple 1-5 scale; however, the reads tend to prove quite difficult.[11] The more experience radiologists have, the better they will be.

The second most common issue is one of acceptance. Will physicians in the community accept using MRI for the detection of PCa? Most will take some convincing. This exam tends to get placed between the primary care physician and urologist in the care continuum when used as a means of detection. Under the current standard of care the patient would likely go straight to a TRUS guided biopsy if his PSA was over the 4.0 ng./mL, which is considered the threshold for normalcy by most physicians using the test.[12] The efficacy of TRUS biopsy (finding positive pathology), depending on whose research one reads, is roughly 50%.[13] That is basically the flip of a coin. The negative predictive value (NPV) of a biparametric prostate MRI, however, is 98%, so it can be seen how the two compare as a means of detecting PCa.[14]

There are, of course, a host of other issues and decisions that need to be made, but these will certainly get the ball rolling. The industry is changing and the technology exists to help drive down the statistics that revolve around PCa deaths and over treatment of clinically insignificant cancers. Early detection is key and MRI for PCa detection can truly help save the lives of men who would normally refuse testing due to the stigma or perceived discomfort. More and more people believe that MRI has a place in the continuum of care for patients facing the possibility of PCa. The American College of Radiology believes it has a place "prebiopsy" and the American Urological Association believes it has a place after the first negative TRUS biopsy.[7,9] At some point, the trajectories of these two will align and there will be a new standard of care. In the meantime, there are a lot of people out there who are willing to have this done. Will your facility be scanning them, or will someone else's?

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Continuing Education

MRI for Prostate Cancer Detection

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Carefully read the following multiple choice questions and take the post-test at AHRA's Online Institute (www.ahra.org/onlineinstitute)

The credit earned from the Quick Credit™ test accompanying this article may be applied to the AHRA certified radiology administrator (CRA) asset management (AM) domain.

QUESTIONS

Instructions: Choose the answer that is most correct. Note: Per a recent ARRT policy change, the number of post-test questions has been reduced from 20 to 8.

1. **Prostate cancer is the ____ leading cause of cancer related death in men according to the American Cancer Society.**
   a. First
   b. Second
   c. Third
   d. Fourth

2. **The prostate specific antigen (PSA) blood test is commonly used to trigger a prostate biopsy. What is the PSA threshold to trigger a TRUS prostate biopsy?**
   a. 4.0 ng/ml
   b. 3.0 ng/ml
   c. 4.5 ng/ml
   d. 5.0 ng/ml

3. **Most insurance plans will not cover a prostate MRI.**
   a. True
   b. False

4. **The American Urological Association's official consensus is to use MRI after the ____ negative TRUS biopsy.**
   a. First
   b. Second
   c. Third
   d. Fourth

5. **One advantage of having a prostate MRI done before a TRUS biopsy is that the patient is now a candidate for MRI/TRUS ____ biopsy.**
   a. Naïve
   b. Guided
   c. Fusion
   d. None of the above

6. **The TRUS prostate biopsy has what % false negative rate?**
   a. 8
   b. 22
   c. 47
   d. 54

7. **The negative predictive value (NPV) of a biparametric prostate MRI is:**
   a. 96%
   b. 97%
   c. 98%
   d. 99%

8. **The standard of care, up until recently, has been the use of the _____, which deterred many patients from having the scan done.**
   a. Surface array coil
   b. Spine coil
   c. Endorectal coil
   d. None of the above

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SAMSUNG

Tranquility: A Diversion Program for Pediatric Patients

By Heather Heebsh, RT(R) and Angela Strausbaugh, RT(R)

ProMedica Toledo Hospital in Toledo, Ohio was a recipient of the AHRA & Toshiba Putting Patients First grant. The award provided the opportunity for the radiology department to implement Tranquility, a program to benefit the pediatric population.

ProMedica Toledo Hospital's radiology department is a full service imaging center that offers CT, MRI, nuclear medicine, ultrasound, special procedures, general radiology, and fluoroscopy. Radiology is staffed 24/7, 365 days a year in five of these areas and radiologists are on staff 24/7. The department serves both adult and pediatric populations. As with any medical procedure, there is the potential for fear and anxiety. This is particularly true among the pediatric population. Fear and anxiety can delay procedures and/or prolong the length of time it takes to complete a procedure, therefore increasing exposure. The radiology department sees around 60,000 pediatric patients a year and sedates around 20–30 children per month due to fear, anxiety, and/or the inability to remain still.

To mitigate fear and anxiety, a diversion program using sight and sound was proposed. The Tranquility program's goal was to implement pediatric appropriate distraction and relaxation methods within the radiology department to reduce stress and radiation exposure for the pediatric population. The primary objectives of Tranquility were to (1) provide music therapy using iPods and portable iHomes (portable speakers) and (2) create a pediatric friendly environment by painting murals on a few walls throughout radiology. The decision to use music as a diversion technique was selected because of potential ease in implementing in a busy radiology department and because some research has shown that music therapy has positive effects in reducing stress and increasing immune responses.

Working with ProMedica Toledo Children Hospital's Child Life program, an artist and music therapist were identified to help fulfill the goals and objectives of the program. The initial meeting with the music therapist was used to familiarize him with the project, the radiology department, and the pediatric population served. Due to the wide age span of the pediatric population and varied music interests of individuals, the music therapist suggested genres ranging from Veggie Tales and Disney to current pop and country music to classical. The music therapist suggested the purchase of compact discs (CDs) that can be transferred to the iPods. Fourteen different compilation CDs were purchased, as well as iTunes cards to supplement and update the music selection in the future. Three iPods and five iHomes were purchased. iHomes were set up in the CT, x-ray, nuclear medicine, ultrasound, and emergency department, as needed. The three iPods are shared and moved to the rooms with iHomes as required.

The artist who painted the murals had done similar projects for the hospital in the past and for other hospitals in the area and had a background in graphic arts. When meeting with the artist, it was conveyed that the objective was to create a pediatric environment that was inviting, friendly, and relaxing, while incorporating the music theme. It was decided to create three murals (Figures 1 and 2) in three of the rooms most often utilized by the pediatric patients. These rooms included gastric, radiology, and ultrasound. The entire process from design to completion took three weeks. The actual prepping and painting of the walls were done in the evenings and weekends, which are times with lower patient volumes and little disruption to patient services.

Although not part of the original plan, it was determined that fiber optic lights would complement the other diversion methods. The majority of the procedures are done with the children lying on their backs. The music and the fiber optic lights displayed on the ceiling provide both auditory and visual distraction. These lights were placed in the same radiology areas where the iHomes were placed: CT, x-ray, nuclear medicine, and ultrasound.

To help determine family satisfaction with Tranquility, a brief voluntary survey was developed. The survey consisted of the following three questions:

- Did the music help to relax/soothe your child during the procedure?
- Was the environment suitable to your child's requirements?
- How do you feel about the overall experience?

As with any new endeavor, education and communication are critical to

Figure 1 • Tranquility Murals

engaging staff and ensuring that initiatives have the intended impact; in this case providing music therapy to pediatric patients to reduce stress and radiation exposure. Staff education was provided through multiple avenues, including regular staff meetings, leadership meetings, and the radiology newsletter. This multimodal approach ensured that staff were reached and provided with education on the project on multiple occasions. Staff were educated on how to use the iPods/iHomes, how to approach patients/parents with this new service, and how to distribute the survey.

After the exam, the staff performing the procedure asked the family if they would fill out a brief survey about the experience. Twenty five surveys were completed with 24 indicating a positive experience. On the one survey that did not indicate a positive experience, the parent explained that her child had a hearing impairment and did not benefit from Tranquility. A few of the comments we received from patients/families included: "nice touch," "helped my son relax," "music helped him not think about the exam," and "very relaxing."

In addition to the positive feedback from families, there has been a reduction in the number of children requiring sedation. Prior to the implementation of Tranquility, 20-30 children per month required sedation. The sedation nurses have indicated that there has been about a 25% reduction in sedations since the implementation of Tranquility.

An unexpected outcome is the benefit this program has provided to patients with dementia. Seeing the benefit to the pediatric population, some staff took it upon themselves to introduce these diversions to patients with dementia and

Figure 2 • Tranquility Murals

have found the distractions reduced fear and anxiety and improved their ability to remain still during procedures.

Outcomes of the Tranquility program were shared at a radiology service line meeting, as well as a Patient and Family Centered Care meeting. The outcomes were well received by both groups and the program will be continued for the benefit of children and families.

In conclusion, the Tranquility program was a huge success and allowed us to put our youngest patients first. Through Tranquility, children were provided with a relaxing and calming environment, which resulted in the kids being able to be still and staff being able to perform the exams quicker and more efficiently. This translates into reduced stress and radiation exposure for patients.

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Success through Servant Leadership

By Jacqui Rose, CRA, FAHRA, MBA, RT(R)

The credit earned from the Quick Credit™ test accompanying this article may be applied to the human resource management (HR) domain.

EXECUTIVE SUMMARY

- Today's imaging leader is well positioned to manage through the tidal wave of expectations due to their experience in finance, capital management, project management, technological advancements, and regulatory expectations.
- The basic tenets of servant leadership address all qualities and styles that are needed to achieve every goal and opportunity that faces leaders both today and in the years to come because the focus is placed on the individual rather than a stereotyped group of people.
- Ten principles of servant leadership include listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, commitment to the growth of people, and building community.

Healthcare is changing at lightning speed. Imaging leaders are dealing with renewed focus on patient experience and employee engagement, more technology to keep up with, payment reforms, quality measures, new legislation and regulations, decreasing reimbursement, productivity, safety, transitioning from volume to value, population health, retail healthcare, diversity and inclusion, and much more. It's exhausting. However, imaging leaders are perhaps the best qualified people to navigate through constant distractions to achieve the goal of exceptional patient care. Today's imaging leader is well positioned to manage through the tidal wave of expectations due to their experience in finance, capital management, project management, technological advancements, and regulatory expectations. While there are a great many distractions, most of the challenges can be managed through a highly performing imaging team. Developing this team requires significant planning and strong leadership, as there are inherent challenges in the workforce today.

For decades, scholars have put forth great models for leaders to develop their own style. Some of these include:[1]

- Charismatic
- Innovative
- Command and Control
- Laissez-Faire
- Pace Setter
- Situational
- Transformational
- Directive
- Supportive
- Participative
- Achievement-Oriented
- Visionary
- Coaching
- Affiliative
- Democratic
- Servant

Others have gone on to define the best qualities that make an excellent leader including: [2,3]

- Honesty
- Communication
- Confidence
- Commitment
- Creativity
- Intuition
- Inspiration
- Approach
- Awareness
- Decisiveness
- Empathy
- Accountability
- Optimism
- Focus

Principles of Servant Leadership

"Leadership lives in how we think, not what we think."

Leaders could go a bit crazy just trying to determine what leadership style works best for them and how to develop the necessary qualities to be the best leader possible. Each leadership style and quality may be helpful in different situations or settings and with different generations. In order to help determine the best approach, remember: "Leadership lives in how we think, not what we think." [1] To bring it all into focus, the basic tenets of servant leadership address all qualities and styles that are needed to achieve every goal and opportunity with each generation that faces leaders both today and in the years to come because the focus is placed on the individual rather than a stereotyped group of people.

"The servant as leader first . . ." as defined by Robert Greenleaf in *The Servant as a Leader* essay which was published in 1970, is so appropriate today.[4] The basic foundation of servant leadership transcends time. If you ask any imaging technologist why they entered this field, you will resoundingly hear "I wanted to help people." We are not drawn by an exorbitant salary, but by the technology and an innate desire to help others. Imaging is a wonderful blend of art and science. There is a little bit of nerd in us that loves the technology and the empathetic side that wants to help others. According to the 2016–2017 AHRA President, Jason Newmark, "Each of us has been given an incredible gift—albeit a gift that also comes with an enormous amount of responsibility. Every day, we have the chance to make a direct impact on our staff and on the patients and families that we serve. This is the real reason we all chose a career in healthcare. And, this is something that we can never—ever take for granted."[5] Our patients and their families come to us in their most vulnerable state—scared, embarrassed, confused, angry, and anxious and they allow us to take care of them. They allow us to see them unlike how many of their closest friends see them.[5] Similarly, staff spend more time and energy at work, caring for others than any other part of their lives. Leaders have an enormous responsibility to provide a culture where they can thrive and achieve their personal and professional goals. We as leaders must earn that right to provide the leadership necessary to create an amazing culture where staff can provide exceptional care to our tremendous patients and customers. That is the foundation of servant leadership, which is embedded in our missions, visions, and values and all that we do in this magnificent field.

In his essay, Greenleaf introduced ten principles of servant leadership which include listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, commitment to the growth of people, and building community.[4] Each of these are essential and basic foundations to good leadership; however, servant leadership takes these abilities to the next level. This next level involves being truly in this for others and not our own personal gain. Imaging leaders continually amaze with their ability to function at a higher level. Our background and training positions us well to lead both inside and outside imaging. However, as alluded to in the name servant leadership, these are the principles we adhere to in order to elevate others to the next level. We create successes for those around us and, thus, truly lead.

Listening

The intention is for one to be truly listening and being in the moment with the person talking to you. How many times have you been ingrained in a project and someone walked through your "open door" and you truly listened? Too many times our minds are still on the project we were working on at the time. We still have the thoughts running through our heads on the next step of the project and totally miss an opportunity to connect with someone else. We're all guilty of it on a personal and professional level, and it's normal. We have to practice turning off that voice in our heads that is working steps ahead of where we currently are at the moment. Too often we or others interrupt someone in a conversation. This may be due to the fact that our inner voices are moving much faster than the person in front of us and we are impatient to get to the point. Practice turning that inner voice off and learn to actively listen to the person in front of you and sincerely connect with them. Greenleaf explains that true listening builds strength in other people.[4] He goes further to clarify that many attempts to communicate are nullified by saying too much.[4] We each have two ears and one mouth, so that we will listen twice as much as we talk. Leaders must put this into practice.

Empathy

This is one of the main reasons we entered this field. We have empathy for patients, why not our coworkers? An important factor here is the ability to not pass judgement and reserve empathy for those deemed "worthy." Sadly, it is part of our human nature to judge people, situations, and actions, and often it is required to understand and lead. However, when it comes to empathizing, we must understand that regardless of how people get to where they are, they deserve respect and empathy. As the age old saying goes, until we walk in their footsteps, we cannot judge. From the "drug seeker" in the ED to the president of the organization, every person we encounter deserves our respect.

Healing

You may not think you have this ability, but you do! This isn't the power to heal illnesses and injuries, it is the simple power

to impact a life. Have you ever empathized with a team member and encouraged them to hang strong because they have what it takes to get through whatever situation they are dealing with? That's it! When the other person finds strength through you, you have the power to heal. Share that power. Start with listening to truly connect, then feel empathy for another and strengthen through healing.

Awareness

An innate awareness of where team members are is crucial to any leadership role. By developing that personal connection with team mates, we are naturally more aware of their concerns and issues and can deal with situations more effectively. A vivid example of this occurred one night when the administrative officer (nursing supervisor, AO) contacted me about the weather and current tornado warning. As the administrator on call, I would be responsible for engaging our disaster mode, which she was anxiously encouraging. As I watched the weather, it was apparent that all activity was north of the hospital location. So, naturally, I was concerned about the level of anxiety the AO was expressing. It wasn't until I asked some clarifying questions that I understood her heightened concern was due to concern that her family was in the path of a potential tornado. We both talked our way through the current weather situation and, when it was clear, I disconnected so that she could contact her family. Since that night, which was my first experience on call and she was a new AO, we have bonded and I am thrilled to work with her as AO when I'm on call.

Persuasion

Old school management styles focus on control, but control is an illusion and not an effective leadership model. You cannot build commitment to care for customers by exerting positional authority. Persuasion, however, allows you to build consensus by capitalizing on the collective expertise of the team you have built. When you practice shared decision making, you find the best way, but not necessarily your way. Leaders should not provide answers, they should give insight and strategy to enable others to develop solutions and succeed. This requires leaders to talk less and listen often and remember that others have great ideas.

Conceptualization

Servant leaders encourage staff to challenge the status quo and find more efficient and effective ways to manage a process. Generally, staff have many answers to the challenges faced every day; we must look to them for the solutions that will not only resolve the challenge, but empowers them to be creative and own the business.[6]

Foresight

This principle is the innate ability of the leader to take lessons, data, and events of the past, combine them with the realities of the present, and determine potential solutions for the future. This is the intuitive aspect of leadership that allows one to act constructively for a future event.[7]

Stewardship

Greenleaf believed that the servant leader empowers staff instead of using power to dominate them. Trust becomes pivotal in keeping a leader's actions consistent with their values and showing trust in the staff when properly deployed. The outcome of this stewardship is higher quality and production that promotes loyalty to the organization. The resulting culture will lead to lower turnover, lower training costs, lower supervision cost, lower absenteeism, fewer errors, a safer environment, and ultimately more satisfied customers and improved financial performance.[8] Servant leaders believe that if you create the right values and culture, normal people will do extraordinary things.[9]

Commitment to the Growth of People

This is the commitment to do what is needed to make others successful. It's understanding that "it's not about me," but rather "it's about everyone around me." This must be accomplished without a personal agenda for success. Servant leaders are vigilant in fighting elitism, arrogance, complacency, and hubris.[9] They believe that when we invest great effort into other's successes, we elevate the entire system and achieve goals beyond our expectations and imagination. Career ladders and succession planning are great examples of investment in the development of future leaders. Too often leaders get distracted by the daily responsibilities and move these programs to the bottom of the list. Organizations cannot afford this approach for fear of being left behind in the future as talent evacuates to more progressive systems.

Building Community

It takes a community to create health and leaders understand the concept that, moving forward, we must build the community to heal the patient. This is a basic tenant of our healthcare values and the solution is enough servant leaders formulating the way.[4]

Emotional Intelligence and Generational Differences

Understanding each of these principles is critical to developing a servant leader mentality. However, in order to take leadership skills well beyond the basics, we must also enhance emotional intelligence (EI or EQ), and pay attention to generational differences. EI is a concept developed by Peter Salavoy and John Mayer and popularized by Dan Goleman in his 1996 book entitled "Emotional Intelligence."[10]

Control is an illusion and not an effective leadership model. You cannot build commitment to care for customers by exerting positional authority.

TABLE 1. Generational Differences in Work Related Characteristics and Expectations

	Traditionals	Baby Boomers	Generation X	Generation Y
Work ethic	Hard working	Workaholic	Only work as hard as needed	
Attitudes towards authority/rules	• They value conformity, authority and rules, and a top-down management approach • 13% included authority among their top 10 values	• Some may still be uncomfortable interacting with authority figures[1] • 5% included authority among their top 10 values[2]	• They are comfortable with authorities and are not impressed with titles or intimidated by them • They find it natural to interact with their superiors • 6% included authority in their top 10 values	• They believe that respect must be earned[4] • 6% included authority in their top 10 values[5]
Expectations regarding respect[6]	• Deference • Special treatment • More weight given to their opinions	• Defence • Special Treatment • More weight given to their opinions	• They want to be held in esteem • They want to be listened to • They do not expect defence	• They want to be held in esteem • They want to be listened to • They do not expect deference
Preferred way to learn soft skills[7]	• On the job • Discussion groups • Peer interaction and feedback • Classroom • instruction-live • One-on-One job coaching	• on the job • Discussion groups • One-on-One coaching • Classroom • Instruction-live • Peer interaction and feedback	• On the job • One on One coaching • Peer interaction and feedback • Assessment and feedback • Discussion groups	• On the job • Peer interaction and feedback • Discussion groups • One on coaching • Assessment and feedback
Preferred way to learn hard skills	• Classroom • Instruction-live • On the job • Workbooks and manuals • Books and reading • One-on-one coaching/ computer based training	• Classroom instruction-live • On the job • Workbooks and manuals • Books and reading • One-on-one coaching	• On the job • Classroom instruction-live • Workbooks and manuals • Books and reading • One-on-one coaching	• On the job • Classroom instruction-live • Workbooks and manuals • Books and reading • One-on-one coaching
Feedback and supervision	Attitudes closer to boomers'	May be insulted by continuous feedback	Immediate and continuous	immediate and continuous

Source: Adapted from Tolbize A. "Generational Differences in the Workplace." University of Minnesota. August 16, 2008

EI involves recognizing, understanding, and managing our own emotions while recognizing, understanding, and trying to influence others' emotions. When leaders are truly in touch with their own emotional development, they can more readily recognize opportunities to improve on the principles of servant leadership. Interestingly, in 2013, Adam Grant led a group of organizational psychologists in an attempt to measure the impact of servant leadership on leaders. Grant's research suggests that servant leaders are more highly regarded by their staff and are more productive. [11]

Compounding the difficulties facing leaders today are generational differences in the workforce. For the first time ever, there are four generations in the workforce. From Traditionalists to Millennials, leaders must understand what motivates and inspires them in order to lead them. Each of these generations are motivated by different things and are loyal for very different reasons. For example, Traditionalists are hard workers and respect authority while Millennials (Gen Y) are great at multi-tasking, but bore easily. To Baby Boomers, job status and symbols are important, but Generation X wants to be given many tasks and be permitted to set priorities. Interestingly, when it comes to communication with each generation traditionalists prefer the phone, a memo, or in person communication. In contrast, Gen X wants to use a cell phone to be called at work, not at home during personal time and Gen Y wants to use texts and social media. Each generation appreciates different forms of rewards; traditionalists prefer formal plaques and pictures, while Gen Y prefers a day off over a raise. How leadership views each generation is also important to understand. Traditionalists have a clear distinction between the boss and the worker and Gen Y prefers a coach over a boss.[12] These are very clear distinctions between each generation and their needs in the workplace. A great deal of literature tends to guide leaders to different styles for different generations. See Table 1.

When imaging leaders become servant leaders, they engage their staff and develop trust that will enable them to tackle many challenges and opportunities. Both diversity and generational differences are eliminated through servant leadership as leaders become adept at connecting with the individual rather than the stereotype others wish to place them into.

Conclusion

Over the past year, with encouragement of leadership, the imaging department at my own facility has learned and practiced the tenets of servant leadership. In this time, we have significantly increased both our employee engagement and patient satisfaction scores, reduced turnover, achieved our productivity goals, and grown our service when expectations were flat for growth. At the end of 2016, we lost our managers and system vice president, however, due to succession planning to assure those we lead grow, we had great candidates step into management roles and excel.

Servant leaders provide others with insight and strategies to be successful, and place the good of others ahead of their own gain. As a true servant leader, we are able to focus on the needs of others to make decisions, rather than selfish gains for personal reasons. A servant leader elevates those who are served. As explained by Greenleaf, "Do those served grow as persons? Do they, while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants?"[4] Quint Studer stated that "Healthcare leadership is clearly both an art and a science. Therefore, as we seek to hardwire excellence and create high-performance cultures, we need to be able to connect to people by capturing—and engaging—their hearts and minds."[13] Servant leadership through its ten principles provides all of the infrastructure needed to address the many challenges imaging leaders face.

Are the people you serve better for having been led by you? Rebecca Rice, President and CEO of Upper Valley Medical Center, within Premier Health stated, "Servant leadership is encouraging the hearts of those that we lead, reveling in their successes, supporting risk-taking to generate new ideas, and being there to guide everyone in their personal challenges."[14] Our staff and customers have given us the "right" to lead and heal them. Let's make sure we have earned that right and continue to do so every day.

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QUESTIONS

Instructions: Choose the answer that is most correct. Note: Per a recent ARRT policy change, the number of post-test questions has been reduced from 20 to 8.

1. **Which of the following is NOT a great leadership model, as outlined in this article:**
   a. Situational
   b. Transformational
   c. Democratic
   d. Autocratic

2. **The basic tenant of servant leadership is that focus is placed on the individual rather than a stereotyped group of people.**
   a. True
   b. False

3. **Greenleaf's ten principles of servant leadership include the following except:**
   a. Listening
   b. Antipathy
   c. Persuasion
   d. Foresight

4. **How can leaders become more aware of team member concerns and issues?**
   a. Develop a personal connection
   b. Ask their other coworkers
   c. Read their emails
   d. Ask human resources

5. **Good stewardship creates a culture that will lead to:**
   a. Lower turnover
   b. Lower absenteeism
   c. Fewer errors
   d. All of the above

6. **What is a great example of investing in the development of future leaders?**
   a. Career ladders
   b. Succession planning
   c. Reduction in workforce
   d. Both A and B

7. **Recognizing, understanding, and managing our own emotions while recognizing, understanding, and trying to influence others emotions is known as:**
   a. Critical thinking
   b. Intuition
   c. Emotional intelligence
   d. Command and control leadership

8. **Which one of the four generations in the workforce today values conformity, authority, and rules, and a top-down management approach?**
   a. Traditionalists
   b. Baby Boomers
   c. Gen X
   d. Gen Y

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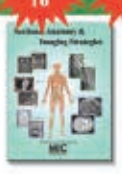

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Fun at Work

By Mark Lerner

I love to have fun at work. Fortunately for me, so do many of my coworkers. Having fun in my department preceded my joining the hospital, and I'm thrilled to announce that after a decade of being in my current position I have successfully not interfered with this attribute.

Fun is such an important ingredient of our department's culture that when our staff identified the common values that we wanted to instill in our employees, fun was high on the list of the eight that were selected. Meetings are an especially good time to laugh. I enjoy having them in my small office with no more than about five or six attendees. When I lead them I try and bring the discussion off topic. Almost immediately, I start to see smiles start to appear on the faces of the people sitting around me with an expression that says, "Here he goes again." One of my absolute joys in life is, after several minutes, taking my off topic comment and weaving it back into relevance to the conversation at hand. The reaction is generally a room full of giggles.

We all recognize that those of us who work in the medical field deal with issues of life and death. There is a tremendous amount of pressure to get things right. We are taking care of patients at their most vulnerable moments. The stress level understandably gets high. Of course, these are the reasons that having fun at the office is so important. Fun helps to relieve the tension level. It is also a fantastic tool for increasing employee engagement and loyalty. Employees want to work at a place where they can have a good time while fulfilling the passion of their profession.

But having fun is not always possible. My rule is that we can have a good time once the foundation of a high performing department is in place. I would include in this requirement the building blocks of low employee turnover, strong financial performance including high volume demands, rare patient safety incidents, and outstanding service excellence. Now, here comes the tricky part. As directors and managers we can have a significant impact on the development and growth of these quality pillars, but it takes a tremendous amount of effort. I can offer you a few suggestions as to how to align your department with these goals.

The first step I would recommend involves talking. As a supervisor, I would come up with as many ways as possible to interact with staff. Here are a few of the things that I do. First, I oversee multiple outpatient centers as well as the main hospital campus. I do my best to visit these locations each and every work day. When I go to these offices I talk to as many of my employees as possible. I ask them how they are doing, if I can do anything for them, and based upon the specific person, how their family is doing.

Next, there are instances in which I personally escort patients through the care they are receiving in my department. I spend many hours just standing outside of an imaging room waiting for a test to be completed. But when I am involved in this activity I'm not simply biding my time. While the scans are in progress I interact with as many of my employees as I can. I call these sessions informal employee rounding.

Next, I hold multiple meetings in my department. These include every other month general staff meetings, monthly manager meetings that include area leads, and I get together with my senior management team once a week. Furthermore, the meeting that includes the leads involves a discussion every other month of a *New York Times* "Corner Office" column that is chosen and facilitated by one of the supervisors.

Throughout these interactions my attitude is positive and I almost always have a smile on my face. In addition, I am careful not to get into discussions around personalities, but rather I focus on the big picture vision of what the department is trying to achieve. At the end of the day I review all of my exchanges with staff to determine what could be improved. In the morning, I go over my schedule for the day and visualize the manner in which I want events to play out.

Finally, if all of the above does not get me to the intended results then I will seek help from whomever I feel can assist me. I will then probably lay awake all night until a solution or multiple action steps come to mind.

And I do all of this because I want to have fun at work!

Mark Lerner is the director of diagnostic imaging at the George Washington University Hospital. He can be reached at Mark.Lerner@gwu-hospital.com.

Changing Culture through Staff Engagement

By Verlon E. Salley, MHA, CRA, Lydia Kleinschnitz, MHA, BSN, RN, and Marlon Johnson, MSOL, BS, RN

EXECUTIVE SUMMARY

- At UPMC Presbyterian/Shadyside in Pittsburgh, PA, a change in executive leadership brought with it a new approach to staff engagement and was the impetus for positive culture change over a five year journey.
- The executive director and two directors led as one through a Steering Committee and managed via four committees: the Operations Committee, Patient Focus Committee, Employee Focus Committee, and the Strategic Focus Committee.
- Since initiating these committee pillars the imaging services employees have had ownership and influence in making the departments great places to work. It is no longer a mystery with rules and processes that "roll down from above."

The journey of staff engagement and culture change at UPMC Presbyterian/Shadyside began in 2012 when a new executive director of imaging was hired. UPMC Presbyterian/Shadyside in Pittsburgh, PA is two separate hospital campuses under the same tax ID number. UPMC Presbyterian is a 757 bed level 1 academic medical center with 240 employees in the department of imaging. UPMC Shadyside is Presbyterian's sister campus with 517 beds and 130 imaging employees. Both campuses have the typical modalities: MRI, CT, ultrasound, nuclear medicine, interventional radiology, general diagnostics, and fluoro.

The imaging departments had previously been led with an autocratic top down approach. In January 2011, the turnover rate in both imaging departments was trending up for front line staff. Managers, supervisors, and the two directors felt a sense of fear and at the same time relief. The sense of fear was that in the year it took to recruit and eventually hire the executive director, it gave each director the opportunity to develop their own management style and become more confident in their own approach. There was concern over being able to buy into any new plans, such as the installation of a service leadership style of management called "Communal Management," which gives all of the stakeholders in the department authority and accountability. Adding to this sense of fear was whether or not this style would address all the concerns of the last employee survey. According to the last employee survey, the imaging employee engagement score was not up to par with other hospital benchmarks in the UPMC system. Of course, there were the other unknowns. The immediate sense of relief came when everyone recognized that before implementing the new management style, time was taken to understand what was working in both facilities.

A 100 day plan was created. The purpose of this plan was to observe how the management team operated. The executive director attended modality staff meetings, analyzed existing metrics, and rewarded and recognized the imaging management team for their contributions to the department. These little things by no means would be the difference maker or turning point in staff engagement or culture change, but they did prove important before implementing a new management style. After the first 100 days, collaborative work began with the two directors to help establish a new vision called the "New Era of Imaging" to create excellence with a staff that was highly

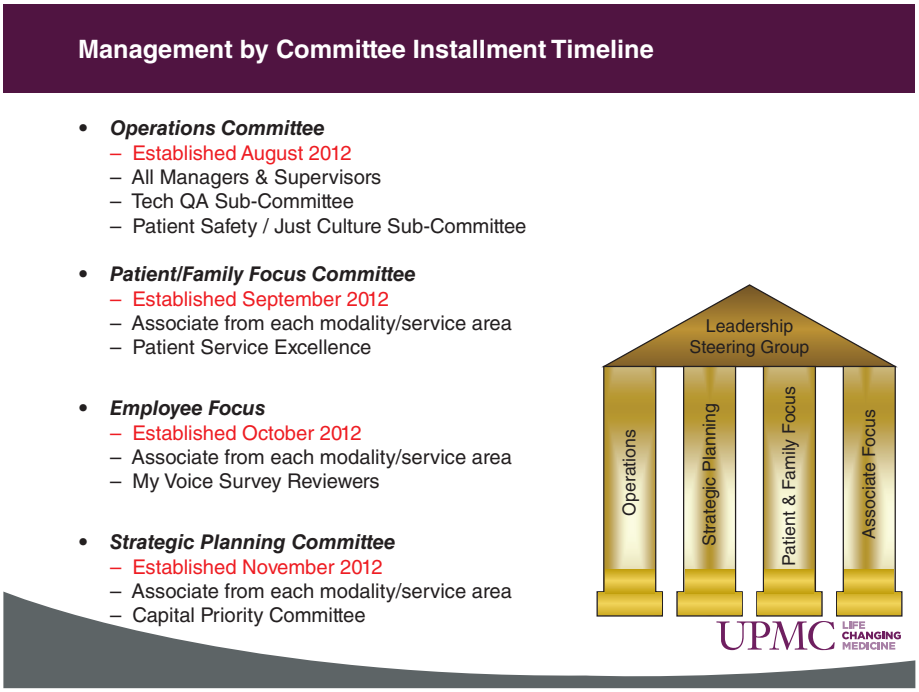

Figure 1 • Committees Led by Steering Committee.

engaged. This vision would be the start of an amazing five year journey.

Instead of issuing policy and process changes from individual offices; the executive director and the two directors would lead as one through a Steering Committee and manage via four committees (or focus groups) at each site (Figure 1). The Operations Committee, Patient Focus Committee, Employee Focus Committee, and the Strategic Focus Committee were how the departments would make up the four pillars of the "New Era of Management." The first thing the Steering Committee created was the rules to govern the committees. After each committee meets and decides on their objectives the Steering Committee prioritize the objectives. See Box 1.

Next, the steering committee agreed on five goals for the five year plan:

- Achieve a Press Ganey percentile ranking of 75% vs sister hospitals or greater
- Achieve a Press Ganey overall mean score of 95.0 or better
- Three members of the staff to receive Aces Awards (UPMC system award for commitment and excellence in service—honors staff who exemplify UPMC's five core values)
- A modality to win top recognition at a quality fair in—quality, infection prevention, safety, and/or regulatory issues
- Published recognition of the "communal" process

The Operations Committee

This was the first committee that was formed and it consists of the imaging leadership team, director, and all of the managers and supervisors. The agenda for this committee centered around hospital policy/process changes, performance measures, new technology rollouts, and other items that the supervisors needed to keep in mind as they conduct day to day operations. This information was also what was needed to be shared at individual staff meetings to keep everyone rowing in the same direction. The overall objective of this committee was to ensure that care and compassion and dignity and respect were upheld so that the department exemplified excellence.

The operations metrics that were consistently reported on were:

- Patient satisfaction scores
- Patient safety review (incident reports)
- Actual vs budgeted volumes
- Required worked hours to actual worked hours
- Overtime hours to budget
- Outpatient performed time vs scheduled time reports
- ED turnaround time reports
- Median inpatient stat and routine turnaround time reports
- Top outpatient referring physicians report
- Overview of the other committees' objectives

The managers on this committee have been driven for excellence through the 20 goals created by the Steering Committee at the beginning of each fiscal year.

Box 1. Committee Rules

1. Each committee has to be chaired by a member of the Steering Committee.
2. Each committee has to have at least one representative from each area/modality.
3. No committee meeting can last longer than 1 hour in duration.
4. Each project must affect a minimum of 2 stakeholders. Only exception—Customer Service & Employee Satisfaction Committees.
5. No commitee can have more than 3 pilot projects going on at once.
6. Each project must be piloted for a minimum of one week in one area/modality.
7. Two of the three committee projects must be implemented on both campuses.
8. No one other than the Steering Committee members can be on more than 2 committees.
9. The Executive Director of Imaging Services has to approve every project AFTER it has been piloted, before it goes into production.
10. NONE of the above rules can be changed until after a fiscal year is completed.

The managers are asked to select five goals from the list to achieve and add to their annual evaluations. The directors are asked to choose ten goals from the same list. The goals correlate with objectives of each of the remaining committees and/or are directly related to how they can better manage the staff within the modalities. Two examples are shown in Box 2.

The Patient Focus Committee

This committee consists of a representative from each modality and the support staff which includes nurses, receptionists, and patient care techs or aides. The front line employee was preferred over supervisors, as they were the ones actually giving the care and providing the service. This committee was set to review satisfaction surveys, particularly patient comments, and work on ways to provide better, more satisfying patient care while in imaging services. An action plan would be created annually and worked on throughout the year. Some of the projects that came from identified patient needs or issues included a "what to expect" pamphlet that provides information about each area and what patients

Box 2. Sample Goals from Operations Committee

Overtime Management: Maintain Overtime Budget.

Top Performer	Superior Performer	Strong Performer	Marginal Performer
>3% below OT budget for FY16	>2%–<3% below OT budget for FY16	+/–2% below OT budget for FY16	3% Above OT budget for FY16

Staff Engagement Initiative: Bi-annual meeting attendance

Top Performer	Superior Performer	Strong Performer	Marginal Performer
>75% of your staff attend bi-annual meetings	%50 of your staff attend bi-annuals meetings	At least 25% of your staff attend	<25% of your staff attend

More smiles are seen on employee faces; and when employees are happy they are better able to provide satisfying care.

would encounter when coming for testing. These pamphlets were distributed to local referring offices and in the UPMC reception areas. Informational posters were also developed and hung in patient waiting areas. The staff members on this committee were very passionate about providing great care; their passion and drive was infectious and spread to their modality teams. (We don't like to use the word "infectious" in our line of work, but it seems to be the one that really works!) The committee members ultimately determined the expectations and preferences for all the stakeholders that utilized imaging services and ensured excellence was pursued by staff. Identifying opportunities to improve customer service would not happen without this focus group.

Committee projects and accomplishments:

- AIDET audit process
- Press Ganey associate of the quarter
- What to expect brochures and posters
- Highlighted patient care (profiling patients' emotions to improve customer service)

Employee Focus Committee

The third pillar, or committee, was the employee focus committee. The terms and conditions of the participants were the same as the patient focus committee, but the committee's mission was to voice and address the needs of their peers. Initially, issues/concerns voiced through employee surveys were discussed. Concerns from an online anonymous survey box placed on a department wide SharePoint were also reviewed. From these sources, needs were identified and an annual action plan was initiated. Some of the outcomes included recognition of employees that had 5 and 10 years of service at the bi-annual all staff meeting and quarterly recognition of employees who have been mentioned by name on a patient survey. This group was the root of the development of a tech clinical ladder that is now under the approval of a system wide rollout. The committee was also in charge of scheduling activities for radiology tech week and UPMC system's dignity and respect week. Committee members have self-identified themselves as the go to people for other staff members from their modalities to bring concerns to be discussed at committee meetings. Over time, this group has built a support climate to enable high performance, participation, and personal and departmental growth. The staff have all been motivated to achieve goals and are ensured they will be recognized for it.

Committee projects and objectives:

- Associate of the quarter and perfect attendance
- Monthly staff recognition (SHY)
- Quarterly staff recognition (PUH)
- Create Rad Tech Week agenda

Strategic Focus Committee

The final pillar was the strategic focus committee. This committee, like the others, consists of members who are front line staff from multiple modalities and areas. One purpose of this committee was to annually identify capital needs and requests and to then work with radiologists, supervisors, and directors to prioritize those requests. The front line staff on this committee must work closely with their supervisors and teams to identify what is needed in that modality. It could be a new CT scanner, MRI safe wheelchair, or an ultrasound machine for interventional radiology. Whatever the capital need, that need would be brought to this committee to discuss process through a prioritization report card that this team developed. In this way, every team member could understand the reason behind every request and could take that information back to their teams for further analysis. It's at the point now where every employee understands why particular equipment purchases are made and they have influence in each one. The list updates annually and items do not fall off until they are either purchased or the need has dissolved. Over time, this capital planning process has made the radiologists more involved and collaborative with the members of this committee. The most important purpose of this committee is to summarize the key strategic objectives and five year plans for the department. They ensure all action plans are created and measure outcomes against expected performance. This is the group that ensured the current plan was carried out. See the action plan in Figure 2.

Committee projects and objectives:

- Capital report card
- Capital prioritization

Conclusion

Since initiating these committee pillars the imaging services employees have had ownership and influence in making the departments great places to work. It is no longer a mystery with rules and processes that "roll down from above." More smiles are seen on employee faces; and when employees are happy they are better able to provide satisfying care. In four short years, Press Ganey patient satisfaction scores increased—they went from a 25th percentile ranking to a 75th percentile ranking when compared to other hospitals in the UPMC system. Overall, turnover decreased—there is now an engaged staff and an employee base that has high retention. Management teams have a strategic plan that actually works toward providing a positive work environment. They listen to their staff and proactively work towards finding solutions.

Other forms of departmental appreciation have been through recognition from the hospital. At UPMC Shadyside,

Reinventing Imaging Services Action Plan

Work Unit or Department:	PUH/SHY Imaging Services	Business Unit:	Steering Committee	Date:	February 2012

Action Plan Assignments and Deadlines:

The action planning process is a continuous process. Please provide your associates with regular updates about the progress, improvements, and/or changes that have been made based on results based feedback.

	Initial Approval	Q1	Q2	Q3	Q4
Manager:	Lydia, Marla, Jordan & Verlon	X	X	X	X

GOALS Reinventing Imaging Services	STEPS (How will we achieve the goal?)	ACCOUNTABILITY (Who is responsible for completing each step?)	DEADLINES (When will each step be completed?)	MONITORING MECHANISMS (How will progress be measured?)
Publish/Recognition for our 5 year strategic plan	1. Implement the New Era of Management Structure. 2. Hold staff accountable to the projects generated from the new structure. 3. Reward and Recognize Staff. 4. Seek out publications that want to document our story.	1. Steering Committee 2. Each Committee Chair 3. Each Committee Chair 4. Steering Committee	1. Year 1 (FY13) 2. Ongoing 3. By Year 3 (FY15) 4. By Year 5 (FY17)	1. Steering Committee 2. Steering Committee 3. Steering Committee 4. Steering Committee
Achieve a Press Ganey percentile ranking of 75% compared to UPMC facilities within 5 years	1. Create and implement initiatives through the Patient Focus Group	1. Steering Committee 2. Patient Focus Group Chair	1. Before FY18 2. Before FY18	1. Press Ganey & Staff Surveys 2. Steering Committee Completed—FY16
Achieve a Press Ganey overall mean score of 95% or better within five years	1. Create and implement initiatives through the Patient Focus Group 2. Work collaboratively with any hospital patient satisfaction focus group.	1. Steering Committee 2. Patient Focus Group Chair	1. Before FY18 2. By Year 5 (FY17)	1. Press Ganey & Staff Surveys 2. Steering Committee
Three Members of the Staff to receive Aces Awards	1. Implement the New Era of Management Structure. 2. Reward and Recognize Staff. 3. Encourage Ace Award submittals	1. Steering Committee 2. Employee Focus Group 3. Operations Committee	1. Before FY18	1. Steering Committee 2. Aces Award Winners 3. Operations Committee Completed—FY15
A modality win top recognition at a quality fair in—Quality, Infection Prevention, Safety &/or Regulatory Issues.	1. Create Operations Committee 2. Create participation criteria	1. Steering Committee 2. Operations Committee	1. Before FY18	1. Quality Fair Projects and Results Completed—FY14

Figure 2 • Action Plan

the ED and CT departments collaborated and won top honors for their project 'Decreasing door to CT scan time for acute stroke patients' in the 2014 hospital quality fair. UPMC Shadyside has a CT scanner strategically placed close to the ambulance entrance of the ED. The ED and the CT team worked to develop processes and criteria that would allow stroke patients to go straight to the CT scanner upon arrival to the ED.

Intra-departmental recognition of staff has also enabled UPMC to achieve the goal of having at least three ACES Award winners within five years. One CT technologist won due to his diversity in CT protocols and exams as well as the empathy and sincerity he displayed in all that he did. This tech is well respected by his peers, nursing, radiologists, and others. He leads by example, exemplifying UPMC core values at all times. Another hospital award winner was a general diagnostic radiology manager. She won the award for being the shining example of what a top performing manager should be. This manager's leadership, work ethic, and cognitive abilities were key for her winning this award. She piloted the customer service initiative developed by Studer called AIDET in her area. It dramatically increased the patient satisfaction scores for the department. The hospital recognized the last winner from the department because of his dedication and work on several construction projects. Because of the radiology facilities personnel, all construction, technology, and even housekeeping concerns are addressed timely with the correct planning and documentation. What is even more impressive is that this individual juggles all of these opportunities with a smile on his face and a high standard of customer service. Although these three are only half of the total winners in five years, they all have one thing in common. They all were recognized by the employee focus committee as employee of the quarter before winning the hospital's ACES Award.

In summary, a culture of excellence has been created for the UPMC imaging departments. It is nearing the end of the five year strategic plan and four of the five goals have been achieved. All that is left is to achieve a Press Ganey annual mean score of 95.0. Currently, the UPMC Imaging Department at Shadyside is averaging a mean score of 94.7 with six months left in this fiscal year. And, as you finish reading this article, another goal has been achieved: the process to change our culture is now published!

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Things that Make You Go Hmmm

By Melody W. Mulaik, MSHS, CRA, FAHRA, RCC, CPC, CPC-H

I can probably determine how much the 80s and 90s were a social influence on you by your response to the title of this article. If you're a youngster (by my definition) it may seem like a meme. If you're around my age, that phrase will either be the start of a song in your head or make you think of Arsenio Hall or probably both.

In our chaotic and fast moving coding and regulatory environment things are constantly changing. Some of the changes make sense and others leave us scratching our heads trying to figure out why the change was made and/or what the change means to our organizations. This article will highlight a few of the items that sometimes leave imaging professionals in a quandary. If we can understand the "why" sometimes that helps address the "how" we make sure we are compliant.

In addition to the National Correct Coding Initiative (NCCI) edits, the Centers for Medicare and Medicaid Services (CMS) also publishes the National Correct Coding Initiative Policy (NCCP) Manual, which describes the principles on which the edits are based. The manual is available on the CMS website at: http://www.cms.hhs.gov/NationalCorrectCodInitEd/. Every year, there are changes which impact the billing and coding of imaging services. New updates for a given year are highlighted in red so that the user can quickly identify the changes for the new year. Following are two new concerns that have many imaging professionals struggling to ensure compliance.

Post Procedure Images

In the 2017 NCCP, Chapter 9, the following guideline can be found under section C: Non-interventional Diagnostic Imaging:

> 3. When *a* comparative *imaging* study *is* performed *to assess potential complications or completeness of a procedure* (e.g., post-reduction, post-intubation, post-catheter placement, etc.), the *professional component of the* CPT code for the *post-procedure imaging study is not separately payable and should not be reported. The technical component of the CPT code for the post-procedure imaging study may be reported.*

This new verbiage has understandably raised a lot of questions and concerns for radiologists and facilities. Quality assurance (QA) images performed during and immediately after a procedure have always been bundled, but this extension seemed to cross into diagnostic studies. If you really read the language, though, you will see that the intent is to ensure that physicians do not bill for their QA studies.

So when a post procedure imaging study is done by the same provider/group that performed the procedure, and the intent is for QA, the initial imaging done after the procedure is bundled. If a radiologist places a G-tube and then obtains imaging to ensure the placement—that imaging study is bundled.

If another specialty performs the procedure, and the radiologist is interpreting the post procedure imaging (think PICC line team and then radiology reading the x-ray), the imaging is separately reportable—even if performed on the same day.

Diagnostic Studies on the Same Day as a Procedure

Also in the 2017 NCCP, Chapter 9, the following guideline can be found under section H: Non-interventional Diagnostic Imaging:

> Evaluation of an anatomic region and guidance for a needle placement procedure in that anatomic region by the same radiologic modality at the same or different patient encounter(s) on the same date of service are not separately reportable. For example, a physician should not report a diagnostic ultrasound CPT® code and CPT® code 76942 (ultrasonic guidance for needle placement . . .) when performed in the same anatomic region on the same date of service. Physicians should not avoid these edits by requiring patients to have

the procedures performed on different dates of service if historically the evaluation of the anatomic region and guidance for needle biopsy procedures were performed on the same date of service.

This is a major change from the previous verbiage which stated "Ultrasound guidance and diagnostic ultrasound (echography) procedures may be reported separately only if each service is distinct and separate. If a diagnostic ultrasound study identifies a previously unknown abnormality that requires a therapeutic procedure with ultrasound guidance at the same patient encounter, *both the diagnostic ultrasound and ultrasound guidance procedure codes may be reported separately*."

It is important to remember that the term "physician" is not to be taken literally. In the NCCP General Policy Statements (#2) the following verbiage is listed: "2. In this Manual many policies are described utilizing the term 'physician.' Unless indicated differently the usage of this term does not restrict the policies to physicians only but applies to all practitioners, hospitals, providers, or suppliers eligible to bill the relevant."

The new guideline regarding diagnostic studies on the same day as a procedure applies to ultrasound, CT, and MR and creates some challenging billing and coding situations. To further complicate matters there is still existing verbiage in the NCCP Manual, Chapter 1 that states:

> When a diagnostic procedure precedes a surgical or nonsurgical therapeutic procedure and is the basis on which the decision to perform the surgical or non-surgical therapeutic procedure is made, that diagnostic procedure may be considered to be a separate and distinct procedure as long Revision Date (Medicare): 1/1/2017 I-24 as (a) it occurs before the therapeutic procedure and is not interspersed with services that are required for the therapeutic intervention; (b) it clearly provides the information needed to decide whether to proceed with the therapeutic procedure; and (c) it does not constitute a service that would have otherwise been required during the therapeutic intervention. If the diagnostic procedure is an inherent component of the surgical or non-surgical therapeutic procedure, it should not be reported separately. *For example, a physician should not report a diagnostic ultrasound CPT code and CPT code 76942 (ultrasonic guidance for needle placement . . .) when performed in the same anatomic region on the same date of service.*

This conflicting language creates some challenges and tough decisions for an organization. One could definitely make the argument that there are scenarios where both the diagnostic procedure and the guidance would be separately reportable. For example, if the diagnostic study was performed at a separate patient encounter and the information provided in the diagnostic study led to the image guided procedure. It is defensible to bill those studies that meet that criteria even though they may receive denials from CMS based on the language in Chapter 1.

It is important to remember that it is never appropriate to schedule a separate encounter for an intervention to avoid a payment reduction. New verbiage was also added into the NCCP General Policy Statement for 2017 that states:

> 1. *MUE and NCCI PTP edits are based on services provided by the same physician to the same beneficiary on the same date of service. Physicians should not inconvenience beneficiaries nor increase risks to beneficiaries by performing services on different dates of service to avoid MUE or NCCI PTP edits.*

Scheduling for dollars is an inappropriate practice but unfortunately one that is prevalent outside of imaging.

Summary

The American College of Radiology (ACR) is actively working on appealing edits related to the post procedures images and diagnostic studies on the same day as a procedure.[1] In the meantime, you should discuss these scenarios and determine how your organization will address the coding, billing, and denial management.

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Building a Leadership Pipeline

By Curtis R. Bush, MBA, CRA, FACHE

Jack Welch said, "When you become a leader, success is all about growing others." When I first arrived at Baylor University Medical Center in Dallas, TX I was overwhelmed but up to the challenge. I was coming from a 75 bed community hospital to a 1,097 bed Level 1 Trauma Center with a department of 200 employees. I had a lot to learn, but I was confident about one thing: I was good at growing people and building leaders. This was a result of being well grown myself by some important and influential leaders along the way. In almost all of my previous positions, I was able to leave with a successor in place.

Ashley was a rising star, and many people within the department knew it, including me. She began her radiology career in the film library, graduated technologist school, and continued to move up. A forward thinker, Ashley had already enrolled in a MHA program because she knew she wanted to advance in her career. She had just cross-trained into CT and was already taking a leading role. She would come to me on occasion to ask about how she could improve some workflow, or ask questions about policies or financial/productivity reports. She was asking all the right questions, and it was easy to see that she wanted to learn and grow.

After a few months, a supervisor position opened up at one of our outpatient centers, and she applied and got it. Over the course of that year, she was able to maintain good communication with me and made several improvements with the staff and processes in her center. Then, a couple of things happened at about the same time: we were in the process of creating a joint venture that would spin off our outpatient centers, and I had a CT supervisor position opening up in my department. I was able to convince Ashley that it would be better for her career development to return to the hospital and continue to grow.

The only issue with Ashley's rapid acceleration up the career ladder was the lack of "learning opportunities" (ie, opportunities to make mistakes) that most leaders are afforded. Without those experiences, it was difficult to identify areas of improvement for more focused growth and development for her. It was at that point that I intentionally put Ashley in positions to make some more difficult decisions that were not necessarily related to her scope of responsibility, which included making some interdepartmental decisions. In her role, she didn't have much opportunity to work with physicians and develop relationships with them or with other leaders outside of radiology. For some interdepartmental decisions I put her in charge of, she thought she was doing the right thing for the patient and facility, but she did not include all stakeholders and had to back track. All of this was intentional, and a great learning opportunity.

After she had been in her CT supervisor role for close to one year I had an open interventional radiology manager position. I thought that this would be a great opportunity for her and would get her out of her comfort zone. She accepted the challenge right away, and began to make an impact on a very tumultuous department, with challenges including physician behavior issues that were causing an increase in turnover, turnaround time issues, and differing levels of expectation between the staff and leadership. We were able to work through all of the issues, and while it was not easy (and in some cases rather painful) she gained the confidence of the staff and physicians. It took over nine months for us to rebuild the team to a culture of respect and accountability, all while improving our capacity to get patients imaged safer and faster.

She was the manager over CT and interventional radiology for two years and made many improvements in those areas. There are still growth opportunities for Ashley; in fact, last fall she was selected as the director of imaging services at one of the community hospitals within our system after a relatively short four years of being in leadership positions. While I hated to lose a great leader, I am proud that she has grown

and learned so much while we had the opportunity to work together.

A few things that I look for in potential leaders are initiative—staff members who accept a situation and identify solutions rather than only recognizing the problem. After implementing our daily huddles a couple of years ago, it has been much easier to identify innovators in the department as well as those seeking growth. I give every employee the opportunity to meet with me and their immediate leader to talk about "what they want to be when they grow up" by creating an individual development plan for them with projects and timelines for completion. A key trait of any leader is great communication skills, so I always look for those employees who are great at communicating with their peers, as well as with leaders in and out of imaging.

As I work to identify future leaders who have the knowledge, skills, and abilities to be successful, the most important trait that I look for is their passion for wanting to be great, and what drives them. I have two other managers that I anticipate will move to open director positions soon, and I'm working on keeping that pipeline going!

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The Diagnostic Imagination in Radiology: Part 3

By Rodney Sappington, PhD

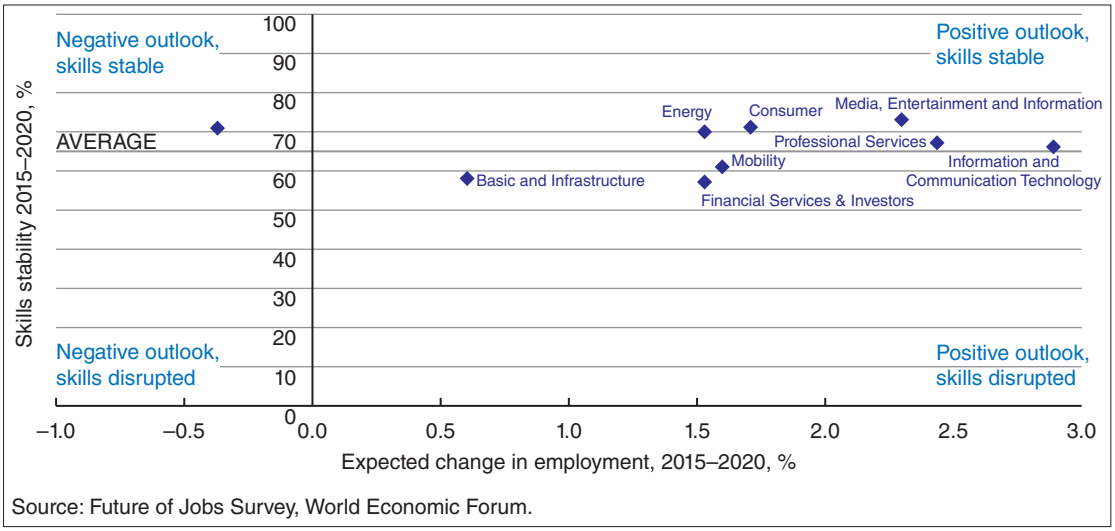
EXECUTIVE SUMMARY

- The final part in this series addresses the impact of machine learning on jobs and expertise in radiology services.
- Machine intelligence automation is a complex picture. There are trends moving in opposite directions. One direction represents job reductions, another direction represents expanding opportunities and new types of jobs.
- Computerization and machine intelligence together reallocate rather than displace jobs. The skills required to do and carry out diagnostic image interpretation will change rather than be replaced.

This final article in the series on the diagnostic imagination will examine job loss and shifting professional expertise in radiology. As a set of deployments, machine intelligence not only has a technical impact but social and economic implication. Diagnostic expertise has been taught to radiologists for generations as a decade long right-of-passage based on extensive medical education and residency training. Radiologists have been trained to think of themselves at the center of pathology, anatomical, and functional diagnostic orders. Their expertise (and cognitive and perceptual pattern recognition) is developed over years.

What's been called the "The Fourth Industrial Revolution" by the World Economic Forum, challenges these medical training times and approaches.[1] This socio-economic shift affects radiology but also the larger global economy. Machine learning, advanced robotics, and biotech are some of the fields disrupting old lines of employment. In this revolution we're seeing the time horizon shrink between training and employment and adapting to new skills. As the World Economic Forum states, 65% of our children starting first grade today will end up working in new job types that don't yet exist.[2] This accelerated training-to-employment cycle puts enormous pressure on planning for how jobs will shift, emerge, and disappear not tomorrow but next month, next year. Between 2015-2020 it's estimated that there will be a "total loss of 7.1 million jobs—two thirds of which are concentrated in routine white collar office functions, such as office and administrative roles—and a total gain of 2 million jobs, in computer and mathematical and architecture and engineering related fields."[2] In economic parlance, this global disruptive labor market change and churn between job families and functions has significant import upon radiology. Such features of radiology make it prone to disruption and job churn due to its fully digitized, networked uses of Big Data, teleradiology, and under-realized application of real-time image analyses at the point of diagnostic interpretation. Healthcare will be hit hard across specialties and organizations with automation, in part, due to machine intelligence but also changing demographics, market consolidation, and still unforeseen but volatile public-private reimbursement structures. Radiology may be hit harder due to the digital maturity of its image archives, image compression, and cloud-based distributed services.

As seen in Figure 1, we can begin to place healthcare in this global perspective of labor markets and jobs by



Source: Future of Jobs Survey, World Economic Forum.

Figure 1 • Employment outlook and skills stability, by industry

industry. The graph locates healthcare among other industries undergoing rapid change from machine intelligence in two respects: healthcare skills are the most likely to be disrupted among all industries and yet healthcare will retain some skill stability into 2020.

This tension will continue beyond 2020. The number one barrier to leveraging machine intelligence for optimal clinical benefit and job creation, cites the World Economic Forum report, is insufficient understanding of disruptive changes. That is, healthcare may be particularly resistant to such proactive understanding due to a recalcitrant and complex payment mix, insular hospital competition, and medical science resistant to change.

Machine intelligence automation is a complex picture. There are trends moving in opposite directions. One direction represents job reductions, another direction represents expanding opportunities and new types of jobs. These trends mean different things to different people on the economic spectrum of the "American Dream." One of the key features of the American Dream is how we compare our standard of living to our parents. In economic terms this is measured as absolute income mobility. Those who are upwardly mobile have fallen sharply over several decades. "Rates of absolute mobility have fallen from approximately 90% for children born in 1940 to 50% for children born in the 1980s."[3] As digital technologies have advanced and globalization has taken hold across industries the economic pie has become increasingly less distributed. There are fewer winners in the middle and lower economic areas of the US economy. People are reaching up, but there are fewer brass rings to latch on to.

If we were to drive up GDP mobility would not change. Real change lies in "the distribution of growth across income groups." What this means is that growing GDP by itself does not revive the "American Dream" for subsequent generations, instead economic growth must be "spread more broadly across the income distribution." In short, to climb up the economic ladder requires a more equitable distribution of wealth not just a wealthier country for the few. We are placing machine intelligence on top of an American Dream of haves and have-nots.

When we look at radiology we see a microcosm of this larger economic mobility scenario with an annual radiologist income above $300,000 and job growth over 15% over 10 years.[4] However, radiologists are experiencing wage fracturing due to the piece working interpretation services. Radiologists have benefited from flexible work hours and cloud-based digital interpretation systems. However, what was once one job and one income can now be several teleradiology jobs being cobbled together to achieve a similar income. This can be inefficient, operationally exhausting for an individual radiologist and opens the radiologist to ongoing contract and credentialing administration not to mention diagnostic error.

Another threat to radiology jobs is the very thing that radiologists have claimed with pride: their lengthy and intellectually demanding training. Machine learning and data science is moving much faster in providing guidance to identifying clinical features in CT, MRI,

Healthcare skills are the most likely to be disrupted among all industries and yet healthcare will retain some skill stability into 2020.

and plain film. We have already reached beyond human performance in identifying muscular skeletal disorders, early signs of breast cancer, and are making strides in lung cancer. The phrase "beyond human performance" does not necessarily point to moving beyond the radiologist, but instead to adding value through reduction of radiologic error. One study noted identified, through examples, four strategies for reporting that added value through reduction of radiologic error, helping to mitigate the 12.4% clinically significant error rate found in reinterpretation of outside studies.[5] What this means is that training algorithms and training radiologists to be good at pattern recognition are on entirely different time lines. Radiologists require a decade, but once automated cloud-based machine learning platforms are further perfected (eg, Google's TensorFlow, Amazon's AWS, Microsoft's Azure, IBM Watson) such algorithms will be trained and tested in a day or week, faster than humans can be medically trained. The notion of training to reduce medical error and gain efficiency will increasingly fall upon new sets of skills across data science, machine learning, automating workflows, and clinical judgement.

With daily announcements that AI will be reducing millions of jobs in the near term, we should pay attention to these realities that in some cases predate such technological shifts but also are amplified by the rise of machine intelligence. The reality is: we live in an economically polarized and cognitively polarized economy. Non-routine jobs are first to be reduced by automation brought on by machine intelligence; however, as noted here, non-routine jobs in diagnostic radiology will undergo shifts in the ways of wage earning, image analysis, and machine-radiologist collaboration.[6] The radiologist and radiology department will change, more images and pathology will be identified by more algorithms. Jobs that did not exist today will exist in five to ten years. Taking cues from other industries is helpful. In other industries from using ATMs in banking to using online shopping via Amazon, bank tellers and storefront retailers have shifted their skills, but such jobs have not disappeared. These shifts happened in less than a decade. Our timeline is greatly shorter than this.

Machine intelligence also creates new jobs and allows for new types of business models to gain traction. In a highly cited study, computerization and machine intelligence together reallocate rather than displace jobs. The skills required to do and carry out diagnostic image interpretation will change rather than be replaced. Dr. Elliot Siegel, Professor Radiology, University of Maryland School of Medicine outlines current tasks that would benefit from machine intelligence automation:[7]

- Intelligent screening criteria for mammography, lung cancer, and other cancers including genomic/liquid biopsy data and other lab info
- Automatic protocoling of studies
- Assessment of patients at high risk to have positive findings (or low risk)
- Communication and tracking of findings
- Multiparametric analysis across multiple modalities
- Improved departmental efficiency with decreased waiting times
- Dose optimization

Administrators and technologists are differently impacted by coming automation. Administrators can prepare by focusing on one of the key linkages in data science: business-data alignments. Radiology business leadership (where most financial and resource driven decisions are made) and IT (where most computerized data is analyzed and resourced) are often siloed organizational areas of expertise and may not share a common language of setting priorities for radiology services. One of the revolutions of machine learning has been the expansive online course offerings outside of expensive academic settings. Radiology administrators should leverage these tools, courses, and online accreditation processes. They arm administrators with a new appreciation of data science, leveraging data for clinical gain, leveraging data for financial gain, and understanding coding procedures. Technologists are differently impacted by coming automation due to their hands-on patient contact and patient safety focus. Although these areas of direct patient care stand to do well in the coming years, technologists are uniquely positioned to expand their radiology service reach to a deeper focus on data flows, imaging workflow, and the automation of radiology protocol, and improved pre and post image processing.

Radiology exists within larger socioeconomic change. As a medical specialty it is not special nor will it be spared in terms of the impact of machine intelligence. This series has attempted to position radiology (or reposition radiology) into a wider technical-clinical and economic context in which it belongs. Questions remain that underlie AI's potential to usher in a jobless future and may indicate change often not acknowledged. What is happening today to the way we represent and manage care when human-centered diagnostic expertise is perceived as temporary, a transition to a greater machine intelligence to come? What kinds of radiology service jobs and expertise are beginning to lose value today, not tomorrow? How do we plan for and deal with job and wealth polarization within our own field? What forms of knowledge, data, gender roles, and professional adaptation are being considered useful in diagnostic radiology with a horizon of AI before us?

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My Final "On that Note"

What a joy it has been for me to be a part of AHRA for the past 30 years. The many experiences I have had are priceless. The years I have spent on the board of directors and as your president gave me experiences that I will always hold close to my heart. When I was younger and had the energy to be more active, we accomplished a lot of really good things in those olden days. When I think of the many friends I made in our organization and the experience and expertise that they possessed, I marvel as to how incredibly fortunate I have been to be surrounded by this sea of knowledge. I learned so much from all of you, and it made me a better person when I brought it home with me. But it really was about the character of the people I had the honor of working with. Our members comprise the best and brightest in our profession and, even more remarkably, they are some of the best human beings I have met in my life. That won't ever change.

I will miss talking to you every other month. Making a rough estimate, including notes I have written to you in other capacities, I have written here for AHRA over 150 times. I would call them articles, but for me that is just a fancy word for a letter. In my mind, over these years, all I have done is to sit with you and chat about life's experiences. I always tried to make it relevant to our profession, but it was always fun to mix it with a pinch of personal salt and pepper and occasionally a touch of Asian herbs and spices (no MSG). Any way you want to describe it, you were great to talk to, and you were a patient listener. I had the time of my life, and I will always feel I have been given an incredible gift with this column that always came from my experiences and countless woven emotions. Thank you all, and thank you, AHRA, for a lifetime of memories including this very last note, which is a final declaration of the love I will always hold near and dear for our wonderful organization, AHRA. And AHRA is you.

Gordon Ah Tye, FAHRA is director of imaging and radiation oncology services for Kaweah Delta Health Care District in Visalia, CA. He holds a bachelor's degree in biological sciences from California State University in Fresno. Gordon is a past president of AHRA, received the AHRA Gold Award in 2001, and received the 2006 Minnie for Most Effective Radiology Administrator of the year. He may be contacted at gahtyes@aol.com.

Retirement Creep and a Final Note

By Gordon Ah Tye, FAHRA

Over the past several decades I have witnessed the retirement of many friends and colleagues. What seemed to be fairly consistent was that they would announce their retirement dates, but would seem to linger on for indefinite periods of time. I likened it to the movie *Ghost*, where he is halfway to the afterlife. So I said to myself: "Not me. I'm not going to be one of these creatures who won't leave." Well, here I am to tell you . . . I'm doing it. A dead giveaway is when people ask you, "Oh, are you still here? I thought you left." Here is some food for thought and some final coaching moments from your trusted old Chinese Philosopher.

Starting rule: Don't set a date for retirement. When you get serious about it, and you start doing some planning and research, it can change your timeframe and decision points. Here is a list of things I've learned in the past year and a half when I first flipped my turn signal on for the road to retirement:

1. If you haven't already done it, sit down and tally up what you spend in the course of a month or year to get some idea as to what you spend and save. (Most of you already keep a budget. Okay, I'm stupid.)
2. If you are in a pension plan, you're lucky. If you are in a 401k plan, max it out ASAP. Make sure you trust the people managing your money. If you are into the stock market, never believe what they say it will be worth in 25 years. And, last, remember 2008 and how it changed a lot of peoples' retirement plans when the market tanked.
3. Fear factor. How will life be if I don't have that paycheck coming in every two weeks? Do I have enough money between Social Security and my 401k to have a comfortable lifestyle? Friends tell me: don't retire and start spending like crazy. You are going on a long or short trip without a watch.
4. Healthcare insurance. Coverage is a gift! And there is nothing to cover dental and vision post retirement, yet retirement age is when your eyesight goes and your teeth fall apart. Go figure.
5. As much as I complain about headaches at work, what will life be like when I'm home all day with my wife? Hmmm. I leave that to your discretion. I kindly plead the fifth.
6. What am I really going to do with myself? If I volunteer they want me to be on a schedule, which might as well be work. Continuing my music with some Uber sounds cool. Or maybe some grandspoiling. (We love eating ice cream and doughnuts!)
7. Just when I'm at the top of my administrative game, I'm done? Took me decades to learn how to lead, negotiate, budget, discipline, schmooze, and now I bail? It's right up there with no vision or dental. Life is in reverse, man.
8. Watch for floating target dates. Social Security has a moving scale for retirement age. By the time you rookies retire, the recommended age in which you can retire could very well be 80. Also know when your 401k matching date is. That pushed me another three months or I would have left a year's worth of funds unmatched.

The last thing I want to address is a matter of the heart: separation anxiety. After all the stress I've had at work, retrospectively, it's not looking so bad now. You tend to look back at 40 years and filter out the bad things and people. The diversity and joy of those you work with is a lot of hearts to leave behind. We take for granted this warm, thick comforter of people that we work with, and the thought of not having them close is scary and sad. I love the people I work with, and for me they will always be my work family.

But in the big scheme of things, we all must evolve and focus on the next phase of life. There is a lot of living to do, God willing. To quote Andy Dufresne from *The Shawshank Redemption*, we need to "Get busy living, or get busy dying." I choose to get busy living. You just need to understand the complexity of this retirement creep as you, too, inch toward this next plateau. You can count on one thing. I'll be just fine.

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