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It’s about time: Stroke care

What a difference evidence-based medicine and time make—especially for a patient with an acute ischemic stroke.

Nearly 800,000 individuals in the United States suffer a stroke each year. The time from the onset of symptoms to treatment remains crucial in stroke patients. You’ve heard the phrase, “time is brain.” For every minute a stroke is untreated, a patient loses 1.9 million brain cells and 14 billion connections between brain cells.

What has been the role of interventional radiology in stroke treatment? Interventional radiologists (IRs) have been involved in the delivery of endovascular stroke care since its inception and remain among the most involved specialists in the delivery of catheter-based therapies in many hospitals across the nation. While many stroke centers worldwide have performed endovascular stroke therapy since the 1990s, uncertainties have remained about its efficacy and which patients are most likely to benefit. Some previous studies suggested that endovascular therapy may be no more effective than intravenous tissue plasminogen activator (t-PA) alone.

However, multiple recent randomized clinical trials have shown that endovascular therapy with mechanical thrombectomy is highly beneficial, as compared to intravenous t-PA alone or more conservative therapies. In select patients with acute ischemic stroke and moderate to severe neurological deficits due to a proximal cerebral artery occlusion. These quality outcomes-based findings—along with improved patient selection criteria, refined imaging and device technology, and a heightened awareness of the importance of time—have demonstrated improved outcomes for stroke patients. (1-4)

What do these recent stroke studies mean to interventional radiologists? These endovascular stroke trials provide a prime opportunity for IRs to further engage in and apply the very best of image-guided therapies. The beneficial results of these trials have major implications for stroke care systems, which is prompting a wide-scale and rapid move to add endovascular therapy to the infrastructure of stroke service lines.

Having the clinical acumen, knowledge of cerebrovascular anatomy, diagnostic imaging expertise and advanced catheter-based technical skills, IRs can help to fill the void and provide the necessary high-quality physician services to address this medical practice need. In collaboration with a multidisciplinary team focused on stroke care, IRs can become an even greater and more integral component of this service line and have a profound and positive impact on patients who present with a potentially devastating acute ischemic stroke due to a large cerebral artery occlusion.

I challenge IRs to continue to be involved in and/or expand their service involvement in this arena to help health care systems deliver on the promise of these current stroke thrombectomy trials. We want stroke patients to benefit, and IRs can have a significant part in their outcome.

How is SIR supporting members? With our “vision to heal,” we plan to drive the future of our specialty by supporting you. We are championing the importance that IRs hold in today’s medical practice, demonstrating how you are helping to improve outcomes by offering new treatment options for patients. Because of the findings from these recent trials—along with urgent recommendations voiced by members of our Interventional Neuroradiology Service Line—SIR will be providing new learning opportunities in stroke care to address ongoing educational needs, while also increasing our collaboration with other specialties.

SIR is developing a course, targeted to IRs with cerebral angiography experience who are currently performing or interested in providing endovascular acute stroke therapy as a member of a multidisciplinary stroke team. The one-day course, which will be held at SIR 2016 in Vancouver, will cover establishing an acute stroke system of care, severity assessment, imaging and patient selection criteria for endovascular therapy, current endovascular devices and technical considerations for using catheter-based acute stroke therapies and hands-on instruction on the use of current thrombectomy devices.

SIR will also continue to ensure excellence in practice by developing clinical practice guidelines and tracking outcomes data to provide the necessary support for expanding use of interventional radiology services. In addition to training, we will be reviewing and revising the multisociety quality improvement guidelines for stroke.

For stroke patients and for members…it’s about time.

References
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Why we collaborate

What do all of these ventures have in common? They exist in what is known as the collaborative economy—the concept that, with the help of technology and information, individuals, corporations, nonprofits and even governments are being empowered to distribute, share and reuse the idling (or excess) capacity that exists in goods and services right now. Think eBay, but not just to reclaim that vintage lunchbox you remember from childhood—for housing, insurance, legal counsel and, yes, health care.

Now, I’m a huge user of Uber and would have no problem letting someone else play with my husky to her heart’s content every day. And while I’m not ready to rent out my spare bedroom to any weary traveler, I can see why Time magazine named collaborative consumption one of the “10 Ideas that will change the world.” According to Rachel Botsman, a global thought leader on the power of collaboration, we are most likely to see these more accessible marketplaces and mobile workplaces disrupting traditional institutions that are fraught with complex experiences, broken trust, redundant intermediaries and limited success. (Read about Home Depot’s partnership with Uber for Christmas tree delivery and more in “Established companies, get ready for the collaborative economy,” bit.ly/1LYkqTG.)

As you think of SIR and browse this issue of IRQ, does anything about a collaborative economy seem familiar? For 41 years, SIR has been empowering IRs to distribute, share and reuse individual expert knowledge to learn from peers and benefit IR patients. We have excellent partners who bring new innovations to market. We’ve wrestled with how to collaborate with physician colleagues—who are in many cases are also competitors—knowing that, when our patients benefit, open collaboration enhances the specific skills and contributions that distinguish the practice of IR.

But merely gathering with competitors or even like-minded organizations to share ideas and information does not constitute collaboration; there must be a larger, collective goal in mind—something everyone can point to and say, “We made a disruptive change and together we accomplished that.”

So how is SIR helping IRs disrupt the status quo through collaboration? In this issue of IRQ, SIR President Alan H. Matsumoto, MD, FSIR, discusses stroke care [page 4] and how collaboration teams have once again put IRs in the position of delivering a “profound and positive impact on stroke patients.” Learning opportunities in stroke care, once put on hold, will resume to address educational needs while also increasing our collaboration with other specialties. Who among you is not surprised by the rapidity and magnitude with which the tide turned as soon as the results of newer trials were published? This is the collaborative IR economy, disrupting old treatments for the benefit of countless patients and their families.

You may also notice in this issue of IRQ, banners with icons for SIRcloud™ and SIR Connect. These two new services, launched over the past year, are specifically designed to empower you to distribute, share and reuse the intellectual capacity that exists in our IR community. Today, in SIRcloud, you can access more than 2,700 slide decks and presentations and 100 case studies derived from SIR activities and resources, as well as files uploaded from the IR community—extending the reach of trusted, shared content. You can also login to SIR Connect and join the nearly 400 active discussions in the Open Forum alone, on topics ranging from “Embolic material for thoracic duct” to “hiring a vascular surgeon” into an IR practice—a complicated collaboration topic if there ever was one. Every day, I’m impressed by the number of you sharing information and ideas openly, all in the spirit that collaboration makes IR (and IRs) stronger in their home communities, and on behalf of their patients.

Whether you believe that collaborative marketplaces could replace traditional industries, like hotels, or that micropreneurs can slay giants just by making transactions less complex, there is no question that the trust and value within the IR community puts us in a good position to keep on empowering innovation and collaboration for the next 41 years, at least.

RELATED RESOURCES
Want more on how share economy will impact medicine? Read an interesting blog I found by National Institute of Mental Health Director Tom Insel, MD, at 1.usa.gov/1Qm01uE.
SIR prepares new stroke training opportunity

The data from the MR CLEAN Trial is promising for the continued and expanded role of IR in stroke care. As such, the leadership of SIR and its Neurointerventional Service Line will work aggressively to address the education and training needs of members and collaboration across specialties.

SIR is currently developing a course that will target interventional radiologists with cerebral angiography experience who are either currently performing or interested in providing acute stroke therapy. The course will offer blended learning elements including self-paced online course work leading up to a full-day, in-person program that contains both didactic and hands-on learning at SIR 2016 in Vancouver. More information about this opportunity can be found on page 18 of this issue.

Notable moves

Philip S. Cook, MD, FSIR, was elected to the American College of Radiology (ACR) Board of Chancellors–Commission on Interventional and Cardiovascular Radiology.

Meredith J. Englander, MD, was elected as a member-at-large of the Governing Council of the AMA Specialty and Service Society (SSS).

Jeff H. Geschwind, MD, FSIR, was made radiology department chair at Yale University, New Haven, Conn.

Hyun S. “Kevin” Kim, MD, FSIR, was made radiology department vice chair at Yale University, New Haven, Conn.

Isaac R. Kirk III, MD, was elected to the ACR Council Steering Committee.

Katharine L. Krol, MD, FSIR, was reappointed by the AMA Board of Trustees to the national Current Procedural Terminology (CPT) Editorial Panel.

Alan H. Matsumoto, MD, FSIR, was appointed vice chair of the ACR Commission on Interventional Radiology and Cardiovascular Radiology.

Anne C. Roberts, MD, FSIR, was appointed the American Board of Radiology (ABR) associate executive director for interventional radiology and elected ACR vice president.

Timothy L. Swan, MD, FSIR, was elected vice speaker of the ACR Council Steering Committee.

Would you or your SIR member colleagues like to announce a new role, retirement, etc.? Let us know at bhaefs@sirweb.org.

SIR and Thieme join in publishing partnership

The Society of Interventional Radiology has selected Thieme Medical Publishers as its new publishing partner. Plans include the publication of several books each year about interventional radiology topics.

Read the joint press release at bit.ly/1IsaxZ7. An article on how you can get your research published will appear in the fall issue of IRQ.

Like what you see?
Find more related content online by searching the phrases cited throughout the issue in banners like this one at the corresponding online resources:

sircloud.sirweb.org
connect.sirweb.org

RELATED RESOURCES
Watch timely IR/DR Certificate presentations from #SIR15ATL

Watch important informational presentations given during SIR 2015 in Atlanta:

- **Hot Topics II: IR Residency: “A New Training Path to a New Specialty Certificate”**
  Speaker: John A. Kaufman, MD, MS, FSIR, Dotter Interventional Institute, Portland, Ore.

- **IR/DR Primary Certificate: Developing a Curriculum “Introduction”**
  Workshop Coordinator: Paul Rochon, MD, University of Colorado-Anschutz Medical Campus
  Speakers:
  - “IR/DR Certificate Implementation”—Saher Sabri, MD, University of Virginia, Charlottesville
  - “IR/DR Certificate: Experience of a Small Group Conversion to Residency”—Derek Mittleider, MD, Vascular & Interventional Physicians, Spectrum Medical Group, Portland, Maine

To view additional content from SIR 2015, and earn SA-CME credit, go to the SIR Digital Video Library at [dvl.sirweb.org](http://dvl.sirweb.org).

SIR, ACP, AVF respond to controversial JAMA article about catheter-directed thrombolysis; emphasize need for clinical trial data

Working collaboratively, officers from SIR, the American College of Phlebology (ACP) and the American Venous Forum (AVF) responded to a study depicting catheter-directed thrombolysis (CDT) as costly and unsafe for deep vein thrombosis (DVT). The presidents from the three organizations (James B. Spies, MD, FSIR; Mel Rosenblatt, MD; and Fedor Lurie, MD) submitted a letter to the editor, which has been published in the April issue of JAMA Internal Medicine. The officers noted that the potential for bias in the nonrandomized study had been underestimated and that some associations drawn between CDT and adverse outcomes are not directly attributable to CDT.

[bit.ly/1HxF1NJ](http://bit.ly/1HxF1NJ)

SIR reaches out to medical students

SIR, through the activities of its Resident Fellow and Student Section (RFS: [rfs.sirweb.org](http://rfs.sirweb.org)), is continuing its effort to expose medical students to IR earlier in their education.

Last month, six medical schools collaborated to host the 1st Annual Midwest Interventional Radiology Medical Student Symposium in Chicago. More than 113 medical students attended this one-day event and participated in lectures, panel discussions and hands-on workshops.

Visit the RFS website to

- Learn more about this event and other past Med Student symposia
- View a map of existing medical student interventional radiology interest groups (IRIGs)
- Learn more about creating an IRIG at your institution

Listening posts

**Recent posts on SIR Connect ([connect.sirweb.org](http://connect.sirweb.org))**

- Embolic material for thoracic duct?
- Drug eluting technology for PAD?
- Does anyone have experience with hiring vascular surgeons to hire join their practice?

@SIRspecialists

RT @cmsgov: Use the new CMS #ICD10 Quick Start Guide to get up to speed on ICD10. Find it on the CMS website [http://go.cms.gov/1RcEn7o](http://go.cms.gov/1RcEn7o)

"Hi. I’m an SIR Foundation Summer Research Intern. I’m going to intern at Bard in a couple weeks. Can I stand here and talk to other med students about IR?"

—Abhi Aggarwal, an AMA Medical Student Section Annual Meeting attendee, who spontaneously volunteered to help SIR at the recent AMA Medical Student Specialty Showcase
SIR economics leader
George A. Fueredi,
MD, FSIR, passes

SIR and SIR Foundation members were saddened to learn last week that former SIR Health Policy and Economics Division Councilor George A. Fueredi, MD, FSIR, had passed away. The society has sent a letter to Dr. Fueredi’s family expressing its condolences on behalf of SIR’s leaders and members.

Highly active in SIR’s advocacy and economics efforts, Dr. Fueredi was also a past chair of the SIRPAC board of directors and the Government Affairs and Health Care Policy and Economics committees and served as member of several other committees.

In tribute to Dr. Fueredi, a fund in his name has been established by friends and SIR colleagues that will allow donations to be made to SIR Foundation in recognition of his many outstanding contributions. Please visit sirfoundation.org and select the “Remembering George Fueredi, MD, FSIR” link on the homepage.

Read the letter at bit.ly/1Id4TyO. Read the full obituary at bit.ly/1M1PP4b.

CMS submits report to Congress on first year of open payments

On April 6, the Centers for Medicare and Medicaid Services (CMS) opened the review and dispute period, during which health care providers can log into Open Payments and review the payments attributed to them. Now CMS has clarified that the 45-day period ended on May 20. Payments that are disputed but not resolved within 15 days after the review period (June 3) will be made public on June 30.

bit.ly/1Fe3FzK
ARIN update

Clinical change and the electronic health record

Greg Laukhuf, ND, RN, CRN, RN-BC, NE-BC, 2015 ARIN Past President

I recently had the opportunity to read a column by Dr. Robert Tarr, “Nothing Changes on New Year’s Day.” The point of the article was that “change is constant and no matter how we yearn for the old days...for better or worse change is constantly occurring” (Tarr, 2013).

This insight is true regarding our radiology clinical practice and health information technology. The tried-and-true methods of old technology with documentation are comforting but the age of the electronic health record is upon us. Recently, the Joint Commission released Sentinel Event Alert Issue 54. This alert centers on the establishment of safety cultures, process improvements and leadership in health information technologies. The increased use of electronic health records has introduced new risks into our clinical practices. A three-year Joint Commission analysis of sentinel events revealed computer interface issues accounted for 33 percent of the errors, workflow and communication issues accounted for 24 percent of sentinel events, clinical content issues were involved in 23 percent of events, organizational issue policies accounted for 6 percent of errors, human elements were involved in 6 percent of issues, hardware issues were 6 percent of errors, external factors accounted for 1 percent and system monitoring issues accounted for 1 percent of errors. The Joint Commission has proposed action in three crucial areas: Culture of Safety, Process improvement, and Leadership to address these events (Joint Commission, 2015).

The first proposed action is to maintain and create a culture of safety in each organization. The culture should include a culture of high reliability and emphasis on change management using collective mindfulness. The team should have shared responsibility and involvement in safety and a process for analyzing adverse events that occur (Joint Commission, 2015).

The second proposed action involves process improvement. The process improvements should embrace the development of a methodical, proactive, approach to health information technology (IT) process. The process includes an assessment of patient safety risks from the technology by examining IT hardware and software for potential malfunctions. Effective and appropriate use of IT by clinicians can positively impact patient safety. (Joint Commission, 2015).

Finally, leadership should examine departmental workflow processes and procedures for risks involving health IT. Clinicians should be incorporated into system planning and system improvements. Changes should occur in a controlled manner and the systems effectiveness scrutinized to assess the accuracy and reliability of data exchanges with the modifications (Joint Commission, 2015).

We live in challenging health care times but a historical perspective reveals that has always been the case. In our current environment, end users should consider the use of technology and be attentive to the potential risks to patient safety in clinical situations. In the end for better or worse, change is constant.

References


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2015 Calendar

**September**

- **September 1**
  - National Peripheral Arterial Disease (PAD) Awareness Month
  - Suggested IR Residency application submission date to have best chance to be included in 2016–17 Main Residency Match ([bit.ly/1R628Oh](http://bit.ly/1R628Oh))
  - SIR volunteer program application process opens ([members.sirweb.org/members/volunteer/index.cfm](http://members.sirweb.org/members/volunteer/index.cfm))

- **September 7**
  - Labor Day: SIR office closed

- **September 18**
  - LEARN early registration deadline

**October**

- **October 1**
  - SIR 2016 registration opens

- **October 3**
  - SIR volunteer program application process closes

- **October 6**
  - SIR 2016 Annual Scientific Meeting abstract deadline (5 p.m. EDT)

- **October 20**
  - World Osteoporosis Day

- **October 22–24**
  - Lower Extremity Aterial RevascularizatioN (LEARN), Orlando, Fla.

- **October 29**
  - LEARN early registration deadline

- **November 8**
  - International Day of Radiology

- **November 20**
  - SIR committee appointment notification
Not too long ago, the concept of “marketing” a medical practice was considered unnecessary at best and in bad taste at worst. After all, it’s plumbers and painters who advertise to attract customers; physicians just need to be good and reputable, and patients will find their practices…right?

Over the past two decades, however, numerous factors have contributed to a change in this viewpoint:

- Decreasing reimbursement rates that prompt the need to supplement lost income
- Increased competition from the growing number of other medical professionals offering minimally invasive procedures
- The rise of the Internet and its role in feeding information to health care info-hungry consumers

As a result, more and more physicians have come to realize that they need to change the way they operate and actively vie for the attention of their once-loyal patient base.

But the concept of marketing can be challenging for nontraditional business managers, like physicians, to grasp. Aaron Shiloh, MD, who has operated an IR practice in the Philadelphia area for nearly 15 years, says that, on the whole, marketing just doesn’t come naturally to him or his colleagues.

“We do an excellent job at patient care, but we are not good at getting our own patients,” he says. “We don’t get that training in medical school.”

Furthermore, marketing for medical specialists can be daunting—IRs, for instance, must reach out to several target audiences, such as referring physicians, patients, hospital administrators and others, often all at once. But how can you do it all and be effective?

Making a connection

Eric A. Wang, MD, an interventional radiologist with Charlotte Radiology, in Charlotte, North Carolina, says his practice recently faced this exact challenge. As with most IRs, Dr. Wang and his colleagues rely heavily on physician referrals. However, despite the best promotional efforts of Charlotte Radiology, they were not growing the business as effectively as planned.

“We created a strong brand for Charlotte Radiology as imaging experts, but we were not effective in promoting our IR procedures,” he says.

Charlotte Radiology administration conducted research with physicians, hospital staff and patients to better gauge the need to create a unique brand for IRs. Interviews with referring practices about how choices were made revealed areas in which some previous marketing was not successful and where there were future opportunities.

“We eventually realized that many physicians have a hard time distinguishing between IRs and other radiologists,” Dr. Wang says. “The referring physicians don’t always make the connection with imaging and our role with both diagnosing and being able to treat the disease.”

The practice leadership and both the IR manager and director of marketing decided to create a unique brand for the IRs as “vascular and interventional specialists,” which was a separate division of Charlotte Radiology, to make it easier for patients and physicians to understand the difference. Then they conducted a traditional marketing campaign, creating flyers and brochures, as well as a unique logo and letterhead, to increase awareness that the new vascular and interventional specialists of Charlotte Radiology represent “the softer side of surgery,” through the use of minimally invasive techniques to diagnose and treat a variety of diseases.

Conducting research and tracking data are important elements of a successful marketing campaign, Dr. Wang says: “This combination of efforts has led to a targeted marketing approach that has been successful for our practice.”
Social circles
Dr. Shiloh, who has been featured on local NBC and ABC affiliates discussing new treatments for venous disease and women’s health, also sees the benefit that marketing in general, and social media marketing in particular, can have on his practice’s success.

“Social media is a natural fit [for IRs and others],” he says. “We all have Facebook accounts and check them regularly.”

The key, he says, is to learn the value of the “social” aspect of the media for your business—branding and name recognition—and use it as a way to connect with and attract patients. To do that well, Dr. Shiloh advises, IRs should keep their postings personal.

“You need to create content that people can relate to and find relevant to their daily lives,” he says. “People want to hear news and receive information, like a new hire announcement, a work anniversary or dates for a health fair. Try not to sound like an advertisement.”

Social media offers other benefits, as well. For example, compared to other forms of marketing, such as creating, printing and mailing brochures or postcards, social media can be relatively inexpensive.

But it’s not free, he says. “Social media marketing takes a lot of time—several hours a week. It’s a commitment,” he cautions. “Time is money, whether it’s your time spent away from patient care and other tasks related to practice management, or someone else’s that you outsource. You can spend as much as $500 per week.”

Dr. Shiloh says he pays someone to handle many of the “nuts and bolts” office management tasks he can’t do on his own, such as search engine optimization management, but he handles all the content creation himself, out of necessity.

“Unless I can hire another IR as a writer, I am the subject matter expert,” he says.

Changing channels
It’s important to know the differences between the various social media outlets and how to use them properly.

Dr. Shiloh says. Twitter, for instance, is good for one-off announcements and offers.

“It’s immediate and has a very short lifespan because it’s moving so fast,” he says, adding that it’s very time-dependent, too. “Tweeting in the middle of the night will not yield as much of a response as doing it at the start or end of the work day, or at lunch time, when people are more apt to be checking their accounts.”

Other forms of social media useful for IRs include Instagram and Pinterest, which are ideal for image-obsessed audiences: “They’re a good vehicle for showing before and after photos,” he suggests.

It’s also important to set expectations for yourself, when it comes to outcomes, Dr. Shiloh says: “MDs are used to being programatic and linear, direct. Social media is none of these things. It’s much more organic. It’s all about awareness and recognition. There’s no direct cause-and-effect-relationship—your phone is not going to ring every time you post something.”

“Marketing requires a multi-pronged approach, and you should always put out new content, in different ways,” adds Dr. Shiloh. “The phrase, ‘I found you on the Internet’ has a lot of different meanings these days.”

Using organizational tools such as HootSuite can help IRs be more efficient with their efforts. HootSuite lets users view all of their social media accounts in one place, and schedule and post once for all.

Dr. Shiloh also says that, no matter who is handling the account, it’s important to have a plan and stick to it.

“The key to success,” he says, “is consistency. If you start a blog, you don’t have to be good—just be consistent. If you can’t, then assign someone or share the task.”

And be engaging, he advises. “Don’t just repost what others are saying. Interact with your followers and others. Respond to comments and make comments on blogs and posts by others.”

Have you connected with SIR?

In fact, real-time, face-to-face engagements may be the best follow-up to any marketing effort, says Dr. Wang.

“We evaluate our patients in a modern IR clinic setting, and that is something we emphasize to referring physicians and patients in the community,” he says. “Also, having IRs active within multiple hospital committees and having a strong presence at multi-disciplinary hospital conferences to discuss patient management with other physician specialists, has made a positive impact on our referrals.”
Repeal of an unsustainable system

Over the past decade, perhaps no acronym has resonated more in the minds of the health care community than “SGR.”

The sustainable growth rate (SGR) was established in 1997 as part of the Balanced Budget Act to control growth in Medicare spending. The law mandated that the total spending for physician reimbursement could not exceed the total growth rate of the U.S. economy. It was designed as a statutory formula to determine Medicare Part B reimbursement rates for physicians. However, many saw flaws in the formula and urged Congress to reconsider this formula.

The clearest evidence of these flaws may have been the multiple occasions in which the SGR formula targeted physicians for reimbursement cuts, some as high as 24 percent. In fact, between 2003 and 2014, Congress had to step in 17 different times to override scheduled cuts to physician Medicare reimbursement. Although Congress considered repealing the formula many times, legislators could never agree on the proper policy or offsets needed.

As each year passed without a repeal, and the cost to permanently replace the system continued to grow, the scenario worsened. The turning point came in 2013 when a report from the Congressional Budget Office (CBO) estimated the cost for a full repeal to be $135 billion, which was less than half previous estimates. Over the past few years, feeling that the time to act was now or never, legislators on both sides of the aisle sat down in earnest to find a resolution to the ongoing problem.

The fruits of that labor finally came on April 16, when President Obama signed into law H.R. 2, the “Medicare and CHIP Reauthorization Act” (MACRA), following months of debate in Congress. The new bill permanently repealed the SGR formula and addressed several other health care policy measures. It did not come cheap, however, as the overall cost of the legislation was $213 billion, with a third of the costs being offset. (Congress waived the pay-go rules for this legislation.) Without congressional intervention, physicians would have faced a 21 percent cut to Medicare reimbursement on April 1, 2015.

This new bill will, ostensibly, eradicate what many saw as a flawed formula and replace it with a new payment model: the Merit-based Incentive Payment System (MIPS). Congress’ goal was to replace the fee-for-service payment system with one that rewards quality over volume. In essence, this bill could be seen as the flag bearer for pay-for-performance. This is unsurprising as policy makers have, for some time, been looking for a means to encourage greater quality of care and expediency in provider services. Congress has always considered the over-utilization of services to be a negative, which is why imaging has been a constant target of legislators for so long.

The current fee-for-service system will remain in place until the value-based system officially takes over in 2019. Last year’s physician fee schedule (PFS) will extend through June 2015 and, for the remainder of 2015, those rates will increase by 0.5 percent. Beginning on July 1, 2016, the rates will be increased annually by 0.5 percent, through 2019. For 2020 through 2025, PFS payment rates will be frozen at 2019 levels, with payments adjusted to account for performance on certain quality metrics under MIPS or participation in alternative payment models (APMs). For 2026 and subsequent years, qualified APM participants will receive an annual 0.75 percent update on Medicare physician payment rates, while those not participating in APMs will receive a 0.25 percent annual payment update, plus any applicable MIPS-based payment adjustments.
What is unique about the new payment model is that providers will now be judged against their peers on the basis of quality of services. Under this new system, physicians will be assigned a composite score of 0–100, which will be used to develop a performance threshold. The scores will be based on the previous two years of an eligible professional’s performance on MIPS measures and apply adjustments to base payment rates for each year, based on the composite score relative to the mean. Payment adjustments will be distributed accordingly on the basis of a rate adjustment factor. Providers falling above the quality threshold will receive a payment increase, while those falling below the threshold will receive a decrease in payment. Penalties will be assessed on a graduated basis so that scores that fall closer to the threshold will receive a smaller penalty, while scores that fall further from the threshold will be subject to the larger penalty.

MIPS essentially consolidates the existing Physician Quality Reporting System (PQRS), the Value-based Modifier and the electronic health record (EHR) meaningful use program into one updated system. Each of the penalties for noncompliance and/or nonreporting of these programs sunsets at the end of 2018. Starting in 2019, MIPS will be the only Medicare Quality Reporting program.

Under the new model, MIPS divides the system into four separate categories: 1) quality of care, 2) resource use, 3) EHR meaningful use and 4) clinical improvement activities. Eligible professionals will have the option to report on these measures through an EHR, a physician specialty maintained clinical data registry or another appropriate system that best fits their practice environments. For the quality of care category, the Health and Human Services secretary will publish annually a list of quality measures to be used in the forthcoming MIPS performance period, after considering input from relevant stakeholders. Eligible professionals will select from that list the measures on the final list to report and on which they will be assessed. CMS will allow for the submission of quality measures from relevant stakeholders and organizations, which, unless otherwise noted, must be based on evidence.

To the extent practicable, quality measures selected for inclusion on the final list will address all five of the following quality domains:
• Clinical care
• Safety
• Care coordination
• Patient and caregiver experience
• Population health and prevention

Before including a new measure in the final list, the secretary will submit the measure for publication in an applicable specialty-appropriate peer-reviewed journal, including the method for developing and selecting the measure.

Eligible professionals can report as a group or as individuals and will be assessed only on categories and activities that are applicable to their practices. The maximum penalty and bonus starts at 4 percent in 2019 and moves to a high of 9 percent in 2022 and subsequent years. MIPS scores can be accessed on the physician compare website, which will allow providers to see how they rank among their peers. To incentivize improved performance, professionals will also receive credit for improvement from one year to the next in the determination of their quality and resource use performance category score and may also receive credit for increased scores in clinical practice improvement activities.

There’s an alternative
CMS will allow providers who do not wish to participate in MIPS to be reimbursed through an APM should they meet certain criteria. In this scenario, providers who receive a significant portion of Medicare revenue through such payment mechanisms would receive a 5 percent annual fee-for-service bonus from 2019 to 2024, in addition to the payment they would otherwise receive for such service. Eligible Medicare APMs include demonstration projects administered by the Center for Medicare and Medicaid Innovation (CMMI), the Medicare Shared Savings Program for Accountable Care Organizations (ACOs), bundled payment demonstrations or other demonstrations required under federal law. For participation in APMs, providers must have quality measures comparable to Medicare quality measures, require the use of EHR technology and include downside financial risk for participants.

• In 2019 and 2020, at least 25 percent of all Medicare payments are attributable to services furnished through a qualifying APM.
• In 2021 and 2022, at least 50 percent of all Medicare payments are attributable to services furnished through a qualifying APM, or at least 50 percent of payments from all payers and at least 25 percent of Medicare payments are attributable to services furnished through a qualifying APM.
• In 2023 and subsequent years, at least 75 percent of Medicare payments are attributable to services furnished through a qualifying APM, or at least 75 percent of payments from all payers and at least 25 percent of Medicare payments are attributable to services furnished through a qualifying APM.

Physicians have the option of participating in one payment method or the other on an annual basis, but may not participate in both at the same time. While there are advantages and disadvantages to both models, choosing one method over the other will have to be determined on a case-by-case basis. However, physicians are offered the flexibility of switching from one model to another from year to year, depending upon which models may best suit their needs.

Conclusion
The shift from the SGR system to these new payment models is a clear indicator of Congress’s strong desire to measure quality and efficiency. The new paradigm of Medicare reimbursement looks to lean towards the two-sided risk models we see in MACRA. While there may not be a perfect system, the new models do seemingly offer physicians more flexibility than in previous years. The next step for Congress and CMS is to define the quality metrics and other guidelines in order to make the system work properly.

SIR continues to monitor this legislation and will provide updates as needed.
It’s a matter of time
By Jeffrey Carpenter, MD, and Martin Radvany, MD, FSIR

Building evidence
The published results of five recent endovascular stroke treatment trials have ushered in a new era in stroke therapy. For the first time, endovascular stroke therapy was shown to improve outcomes compared to standard therapy when used early (essentially within 6–8 hours of onset) in the setting of large vessel ischemic stroke. The trial results of MR CLEAN, ESCAPE, EXTEND IA, SWIFT PRIME and REVASCAT are unusual in their consistency and robust treatment effect. These trials were not limited to a few sites in any single country, nor did they use a single protocol. The devices and processes were robust enough to ring true through Europe, North America and Australia.

The SWIFT PRIME and ESCAPE trials pushed the envelope of the results that can be achieved if patient selection and streamlined interventions are optimized. CTA and/or CT perfusion imaging were used in the vast majority of these cases to select patients with intracranial ICA or M1 occlusions and a small core infarct or robust collaterals. The odds ratio (OR) for improvement at 90 days on the modified Rankin scale was 2.6 in ESCAPE and 2.8 in SWIFT PRIME. Absolute improvements over standard therapy in outcomes measuring functional independence at 90 days were 27 percent and 25 percent, respectively. EXTEND IA was a very small trial that looked at functional outcomes only as a secondary endpoint but it too was strongly positive (OR of 2.0).

The MR CLEAN and REVASCAT trials represent a more practical assessment of the likely treatment effect of the current devices when used with conventional imaging and a more varied patient mix. Noncontrast head CT and standard CTA were used but no rigorous perfusion imaging was employed to select patients. Patients with intracranial occlusions of the ICA, ACA (MR CLEAN only), MCA and any associated cervical carotid stenoses were treated. The ORs of improvement in outcome at 90 days on mRS were about 1.7 (the same as tPA demonstrated in the pivotal NINDS Stroke trials parts 1 and 2 published in 1995) and the absolute improvement in functional independence at 90 days was about 15 percent.

These results contrast starkly with the publication of three purportedly neutral studies of endovascular treatment just two years prior. Although IMS III, the most pertinent of the studies, did not find significant improvement with respect to its primary outcome measure, there were no safety issues identified and those patients with documented large vessel occlusion did significantly better with endovascular treatment than with IV tPA alone, even with prior generation devices and procedures. Stent-retrievers overwhelmingly outperformed the Merci devices in their FDA approval trials in terms of both patient outcomes and vessel recanalization but were not significantly used in IMS III. So while there was room for optimism regarding newer trials, the field was surprised by the rapidity and magnitude with which the tide turned.

Difficult delivery
As history has shown, delivering these therapies to all who need it will prove difficult. Twenty years ago there were no effective options for the treatment of acute stroke. Then the NINDS Stroke trial demonstrated improved outcomes for stroke patients treated within three hours of symptom onset using IV tPA. This led to FDA approval of IV tPA for
the treatment of acute stroke. It would be a number of years before systems of care (and physician acceptance) caught up with the potential of IV tPA and significant increases in rate of treatments occurred.

There is now near universal interest by hospitals and hospital systems to provide stroke care similar to the recent trials and improve stroke outcomes to their patient populations. These systems already have a mindset of treating acute stroke in a rapid fashion, which will need to be tweaked but not reinvented. The real challenge of delivering stroke treatment in the mode of acute coronary interventions will be the organization of the manpower necessary to do so on weekends, nights and holidays.

The participating sites in the recent trials were for the most part not community hospitals and not new to endovascular stroke therapy. Making endovascular stroke intervention as accessible as acute coronary intervention will require large numbers of endovascular interventionists thus necessitating several specialties and, in some cases, differing hospital systems to cooperate. It will not be professionally or financially viable otherwise.

A golden opportunity ...
Unlike cardiology, in which the case volumes and practice patterns allow multiple cardiologists to practice within modest-sized communities, the maladies amenable to endovascular treatment in the head, neck and spine are relatively few. The number of endovascular neurosurgeons, interventional neuroradiologists and interventional neurologists who are needed to treat all the aneurysms, fistulae and AVMs already exist. In truth, one of the yearly discussion topics at annual meeting of the Society of Neurointerventional Surgeons (SNIS) is whether and how to limit additional trainees so that sufficient case volumes exist to maintain minimum skills of existing practitioners.

Despite the abundance of interventional physicians to perform elective neurointerventional procedures, there are too few physicians available to treat hyper-emergent stroke patients. In reality, there is incredible competition for these cases. Hospitals occupying the same city block but in different health systems each want their own specialists. This makes sustainable, instantaneous endovascular stroke coverage difficult for most hospitals unless physician resources are used to best advantage (possibly combined and shared).

Large vessel ischemic strokes with imaging features suggestive of a small core infarct or robust collaterals are a relatively small subset of acute ischemic strokes. Simply stated, there are not enough patients who would benefit from endovascular stroke therapy for a single physician to make a career of endovascular stroke treatment. At the same time, it is unreasonable to expect a single physician to be able to provide this type of care around the clock, 365 days a year. At a bare minimum, it will likely require at least three physicians working together to provide a sustainable level of coverage in any geographical area.

...your opportunity
Interventional radiologists are on staff at nearly all hospitals and a substantial number are already involved in emergency stroke treatment. This is especially true in nonacademic hospitals and nonurban areas. Many of those not currently engaged in stroke treatment possess the expertise in both stroke neuroimaging and cervicocerebral vascular access to supplement the pool of physicians currently providing endovascular stroke treatment.

The efficacy of the current generation of stroke devices when used early in large vessel stroke should no longer be questioned. The methods and workforce used to deliver the care will be. In nearly all foreseeable models of delivering this treatment to patients there will be a need for additional manpower to deliver expert endovascular stroke care. Interventional radiologists have been and will be asked to participate in stroke call and SIR will provide quality instruction in the methods and techniques necessary to achieve excellent outcomes for stroke patients.

There is now near universal interest by hospitals and hospital systems to provide stroke care similar to the recent trials and improve stroke outcomes to their patient populations.

Prior to publication of IMS III, SIR and the IR community laid the groundwork by participating in development of training standards, multisociety quality guidelines and creating the CLOTS course with a comprehensive set of educational materials for physicians performing endovascular stroke therapy. The society is taking a leadership role in providing training to interventional radiologists committed to endovascular stroke therapy by establishing the Contemporary Endovascular Stroke Therapy (CEST) course as an educational track in conjunction with the SIR 2016 Annual Scientific Meeting (April 2–7, 2016, Vancouver, B.C.). This updated course will build on CLOTS to provide interventional radiologists with experience in endovascular therapy and cerebral angiography, the most current updates on endovascular stroke therapy with emphasis ranging from imaging and patient selection to endovascular treatment and patient management.

We encourage all SIR members to mark your calendars for this important course, and to take advantage of critical opportunity in our field.

Jeffrey Carpenter, MD, is co-chair of the SIR Interventional Neuroradiology Service Line.

Martin Radvany, MD, FSIR, is co-chair of the SIR Interventional Neuroradiology Service Line.
SIR answers your coding questions

Q: We do contrast injection for each epidural steroid injection we perform just to confirm we are in the epidural space. Is this formal epidurography and should we be coding 72275 for all of these injections?

A: When performing contrast injection only to confirm location of the needle, one should not code for formal epidurography. In these instances, it is appropriate to code 77003 (fluoroscopic guidance for needle/catheter tip localization for spine/paraspinal injection procedures) with 62310–62311 (injection of therapeutic and/or diagnostic substance, such as steroids, into the epidural or subarachnoid spaces).

Formal epidurography, rather, is coded with 72275, which includes 77003. Therefore, 77003 should not be additionally coded when performing formal epidurography. 72275 should only be used when an epidurogram is performed for diagnostic purposes (e.g., assessing flow of contrast to assess area(s) of scarring, nerve constriction or possible nerve inflammation, images are documented, and a radiologic report is issued describing the findings of the epidurogram).

Q: I heard that there were new vertebroplasty/kyphoplasty codes for 2015. How should these new codes be properly used?

A: First, the new code set helps differentiate between vertebroplasty (22510–22512) and vertebral augmentation (22513–22515; 0200T–0201T). For simplicity, vertebral augmentation = kyphoplasty. Kyphoplasty includes cavity creation (e.g., with a balloon) and attempted height restoration. Vertebroplasty refers to injection of cement only. Category 1 codes are available for cervicothoracic (22510) and lumbosacral (22511) vertebroplasty. Code 22512 is an add-on code to be used for each cervicothoracic or lumbosacral vertebral body treated in the same session.

Kyphoplasty codes are slightly different in that there is no CPT code for cervical kyphoplasty (as it is not yet considered standard of practice). Thoracic kyphoplasty (22513) and lumbar kyphoplasty (22514) have category 1 CPT codes. 22515 is an add-on code for each additional thoracolumbar vertebral body treated in the same session via kyphoplasty. Sacral kyphoplasty can be coded using two Category III CPT codes: 0200T (unilateral) and 0201T (bilateral).

Imaging guidance and bone biopsy are included in all new vertebroplasty and kyphoplasty codes. So it is not permissible to code additional radiologic supervision and interpretation and bone biopsy codes when performing vertebroplasty and/or kyphoplasty.

Disclaimer: SIR is providing this billing and coding guide for educational and information purposes only. It is not intended to provide legal, medical or any other kind of advice. The guide is meant to be an adjunct to the American Medical Association’s (AMA’s) Current Procedural Terminology (2014/CPT”). It is not comprehensive and does not replace CPT. Our intent is to assist physicians, business managers and coders. Therefore, a precise knowledge of the definitions of the CPT descriptors and the appropriate services associated with each code is mandatory for proper coding of physician service.

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I have spent most of my career in academic IR practices. Aside from the satisfaction that came with training the next generation of IR docs, the biggest advantage of academic practice for me was the focus on IR. Everyone I worked with every day was full-time IR—lived and breathed it throughout the work day and beyond—and was not expected to do otherwise. There were no distractions, and my partners and I shared our vision of what we wanted to accomplish.

People often talk about the “publish or perish” paradigm of academic medicine as if it’s a bad thing, but I found it to be a constant source of excitement. It’s really only in an academic setting that you have the freedom to chase down whatever aspect of IR happens to catch your interest. You find yourself with a question about something you’ve seen and, rather than cast it aside for someone else, you can focus on it, study it, answer it and then tell people about it. That’s not a punishment—it’s a joy.

In more recent years, I’ve been in private practice. Unlike an academic setting, which is clearly divided into large, monolithic departments in which the chair has an enormous amount of power, private hospitals tend to be more loosely organized. Though this may change with time, physician groups in private practice are generally smaller and less unified, and the chair position is almost a formality. These factors reduce the ability of any one group to dominate another.

It’s really only in an academic setting that you have the freedom to chase down whatever aspect of IR happens to catch your interest.

For example: in an academic setting, a chair of surgery might pressure his or her surgical oncologists to direct port placements, gastrostomies and even (perhaps) catheter-directed oncologic treatments to other surgeons rather than IRs. In a private practice, such pressure is far less likely to be effective. Also, the opportunity for IR to compete with other physicians is greater when their finances are separate: the dean of a medical school would have no reason to fund competing vascular labs in surgery and radiology, but a private radiology group that wants to increase its vascular diagnostic and interventional
work could certainly choose to invest in its own vascular lab.

Even in a fairly large private practice, there is usually an expectation that all members of the group will contribute to the general imaging work. Full-time, exclusively IR jobs are the exception rather than the rule. This makes it very difficult to have the kind of focus on IR that one sees in academics; i.e., members of the IR group might alternate between IR and imaging work over the course of the day and might be completely out of the IR suites for days at a time, which disrupts continuity. I have found it much harder in private practice to organize a daily review of cases, a monthly M&M, a journal club, and other peer review or educational activities that are integral to the academic world.

One fear that I had in leaving an academic practice was that I would no longer be doing interesting cases. I had always enjoyed being at the end of the referral chain, getting the cases that others had found to be too difficult. I do think that is a real risk for many who make the transition.

However, I was fortunate enough to land at a private facility with a liver transplant program and a very active oncology service. I find that I am doing a similar volume of TIPS, yttrium, ablation and similar cases, but I no longer have to let “the fun part” be done by someone else as I supervise. Cases move through the angio lab much more quickly than when a trainee is involved.

The trade-off is that I now have to do all of the paperwork as well, such as H&Ps, consents, pre- and post-op orders, the procedure note and the dictation. So while I am able to do my cases more quickly, I’m actually spending a larger percentage of my time on paperwork than in the academic setting.

The financial considerations of a move to private practice are much less compelling now than in the past. For years, I watched my fellows take jobs that paid more than mine but, as I moved into administrative positions and the economy changed, that gap shrank. By the time I moved out of academics, the relative balance had actually shifted and my salary went down. I also find that, as a partner in a private practice group, the issues of reimbursement, contracts, equipment costs, etc—which I had rarely if ever thought of in the past—are now unavoidable.

For me, the greatest single difference in private practice is a marked increase in free time. Since I no longer have either research or administrative responsibilities, I can leave my work behind me at the end of the day. In fact, I no longer have an office at the hospital because, when I am not working in the angio lab, I am not working at all. On the other hand, in many practices, the IR docs are expected to share in general call responsibilities while also having either separate IR or IR backup call. Many of us who move from academic to private practice find that call frequency actually increases.

All things being equal, I preferred the focused and insular academic environment over the increased freedom of private practice. If I had the flexibility to relocate, I would pursue another academic job. Since that’s not the case, I’ll instead use my extra free time to play with my kids. Not a bad trade at all.

R. Torrance Andrews, MD, FSIR, is an interventional radiologist with Seattle Radiologists.
New federal X-ray guidance published

On Jan. 15, 2015, U.S. Environmental Protection Agency (EPA) administrator Gina McCarthy signed Federal Guidance Report No. 14: Radiation Protection Guidance for Diagnostic and Interventional X-Ray Procedures (FGR-14), finalizing a multiyear, interagency effort to update federal x-ray guidance. While not binding on any agency or facility, incorporating the best practices defined in this guidance will improve the safety of diagnostic and interventional imaging.

The new federal x-ray guidance updates the 1976 guidance in Federal Guidance Report No. 9 (FGR-9). Since 1976, two related trends in x-ray technology have emerged:

1. Digital technology has largely replaced x-ray film. With digital technology, overexposure does not degrade the image. This is different from film where an overexposure blackens the film, making the overexposure obvious as soon as the film is developed.

2. The availability and use of interventional fluoroscopy and CT scanning have increased rapidly. Associated with this increase, there have been several reports of unnecessarily high radiation doses given to children because equipment exposure settings were not properly dialed down from adult settings.

Trends and reports from the National Council on Radiation Protection and Measurements show a sharp increase in imaging studies resulting in a doubling of the average annual radiation dose to the U.S. population from diagnostic and interventional x-ray procedures over the past 20 years. In response to these findings, the federal Interagency Steering Committee on Radiation Standards asked the EPA to consider revising FGR-9.

As a result, the Interagency Working Group on Medical Radiation was formed, which included medical and radiation protection professionals from the EPA, the Department of Health and Human Services, the Department of Veterans Affairs, the Department of Defense (Departments of the Army, Navy and Air Force), the Occupational Safety and Health Administration, and the Commonwealth of Pennsylvania.

The EPA’s federal guidance authority allows the agency to provide advice to federal agencies with respect to radiation matters that directly or indirectly affect public health. While most of the recommendations in FGR-14 can be applied to any type of medical, dental or veterinary facility using radiological diagnostic and interventional imaging equipment, some considerations are unique to certain federal facilities, such as military field hospitals.

FGR-14 includes facility guidance for each modality (radiography, CT, interventional fluoroscopy and bone densitometry). The guidance covers a range of important matters, such as radiation shielding, training and credentialing, providing options for practitioners who refer patients and order studies, and managing informatics of patient records. Some of the key aspects of the update include:

• Agencies should ensure that all radiation use in medical, dental and veterinary imaging is justified and optimized.

• Agencies should promote the development of national diagnostic reference levels for use as quality assurance and quality improvement tools in each type of examination.

• Facilities should ensure that sufficient staffing is maintained and trained to appropriately address radiation safety issues.

• Facilities should image only the area of anatomy in question, acquire only the necessary sequences, and select and adjust the protocol to ensure that the patient is examined using the appropriate techniques and dose.

• Facilities should use the dose information from individual patient imaging procedures that is provided by imaging equipment as part of the quality assurance program for identifying opportunities to reduce dose.

• Facilities should have adequate quality assurance and quality control programs for each of their modalities.

• Facilities should ensure that advances in techniques and technology that reduce radiation dose are used and used properly.

• Facilities should establish infrastructure for collecting, storing, reporting and analyzing dosimetry data from patient examinations.

Private health care facilities may already be familiar with the recommendations in this document. Many of the recommendations have been identified as best practices by international and U.S. radiation protection organizations and professional medical organizations. This guidance should serve as a reminder to all medical professionals who use radiological diagnostic and interventional imaging equipment to keep patient doses as low as reasonably achievable without compromising patient care.

FGR-14 and supporting information are available at epa.gov/radiation/federal/fgr-14.html.
Making your membership yours

SIR sections are an exciting new way to customize your experience as an SIR member.

To bring together groups of members with a special interest or other commonality so they may more easily exchange information, SIR recently developed SIR sections. Guided by governing councils elected by section members, these groups actively engage with each other through webinars, conference calls and in-person meetings during the SIR annual meeting. Sections establish and maintain their operating guidelines with oversight of the SIR Executive Council.

Sections provide many opportunities for the society and its members alike:

• A means for SIR to make use of the expertise of an identifiable group of members on specific issues
• A forum for members with a special interest to speak as a unified group to the leadership of the society
• A pathway for professional leadership development within the organization

Get it together

If you’re interested in forming a new section, carefully consider whether your proposed section meets these requirements:

1. The objectives of the section will assist and be consistent with furthering and supporting the stated mission, values, objectives or policies of the society.
2. The objectives of the section will be related to the clinical or administrative practice of interventional radiology.
3. Sections may not duplicate chapters or membership categories that currently exist.

Once you have determined that your section meets these criteria, you’re ready to begin the process:

1. Notify volunteer@sirweb.org of your interest in forming a section.
2. You will receive additional information about forming a section by email.
3. After notification, send volunteer@sirweb.org the following:
   a. Prospective section objectives
   b. Description of the subject area that will be addressed by the section
   c. Description of how the establishment of your proposed section will further SIR’s ability to meet its objectives
   d. Proposed first-year activities
4. If the SIR Executive Council approves these materials, the section is chartered. The Executive Council will use the criteria described earlier in this article when reviewing a section charter.

5. Upon approval by the Executive Council, each member who has e-mailed his/her interest in joining the section will be notified of the section’s approval.
6. The SIR president will assign a member of the Executive Council to serve as liaison to the section and the executive director will appoint a staff liaison.
7. The section originator will act as the section chair until the next Annual Scientific Meeting.

For more information about SIR sections and to view a complete list of current sections, visit bit.ly/1m5D9QS or members can visit members.sirweb.org/members/volunteer/index.cfm. SIR is always looking for new section ideas; if you have questions about forming a new section, contact volunteer@sirweb.org.
The circle is growing!

**SIR Foundation welcomes our 2015 Pioneer Circle members**

“Sustaining innovation relies on our support now more than ever. I make a living by being an IR, and SIR and SIR Foundation are where I am inspired to dream big and see it come true. The thrill of giving to SIR Foundation lasts a lifetime—see your legacy live on!” —Mehran Midia, MD, Life Member of the Pioneer Circle

SIR Foundation, a 501(c)(3) charitable organization, does not receive operational funding from SIR member dues. We rely on charitable donations to the Annual Fund to foster IR research, increase the number of skilled investigators, and encourage the development of innovative therapies leading to improved patient care and quality of life.

Please visit [sirfoundation.org/pioneer](http://www.sirfoundation.org/pioneer) to find out more about the Pioneer Circle, a new way to support SIR Foundation’s work. Your donation will lead to increased funding for grants and awards, evidence-building initiatives, research education and mentoring, medical student outreach, and so much more. Donate online at [sirfoundation.org/donate](http://www.sirfoundation.org/donate), or call Michelle Lockwood at (703) 460-5598.

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- Elan H. Rosenthal, MD (gift made in his honor by Dennis Dewenter)

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Your donation makes a real difference in IR research!

1. Work is underway on a global quality registry for IR leading to better data collection and increased outcomes research.
2. Foundation donors have made possible more than 150 grants totaling more than $3.1 million in research funding.
3. Through research consensus panels (RCPs), we have identified top research priorities for the specialty and have helped to bring more clinical trials to fruition.
4. Excellence in IR research is recognized and promoted through the annual Dr. Charles T. Dotter Lecturer, Leaders in Innovation Award and Dr. Gary J. Becker Young Investigator Award.
5. SIR Foundation does not receive any support from SIR member dues; we rely solely on the generosity of donors to make our work possible.

One of the easiest ways to support SIR Foundation is through your online dues renewal. Simply select to donate a gift of any amount when you pay your member dues.

Last year, more than 600 SIR members donated through dues or the Pioneer Circle, representing about 14 percent of SIR membership. This is a great show of support. Please help raise the bar for IR this year by giving a donation when you renew. Consider taking on the challenge of matching your SIR member dues with a gift to SIR Foundation or joining the Pioneer Circle with a gift of $1,000 or more. For questions, please contact the SIR Foundation development department at (703) 460-5598 or email [development@sirfoundation.org](mailto:development@sirfoundation.org).
Announcing the Dr. and Mrs. W.C. Culp Named Fund for Medical Student Research

“Support what you believe in. For me, that is IR research and development—innovation and science applied to real medical problems.” —William C. Culp, MD, FSIR

William “Bill” C. Culp, MD, FSIR, and his wife Tracy Culp have been generous SIR Foundation donors for years, giving funds to seed the Academic Transition Grant and campaign donations in the early 2000s and annual fund donations, as well as regularly attending galas. Today, that spirit of giving continues and SIR Foundation’s Board of Directors is pleased to acknowledge the Culps, who have made a significant donation that will advance IR for years to come. We are honored to have helped the Culps achieve their philanthropic goals through a gift that will support our mission and encourage medical student research.

We are especially excited to pay tribute to the Culps’ generosity by establishing a new SIR Foundation Named Fund for Research Excellence—the Dr. and Mrs. W.C. Culp Named Fund for Medical Student Research—and through naming of the Dr. and Mrs. W.C. Culp Student Research Grant for the next decade. This Student Research Grant is designed to foster an interest in research by funding a summer research project conducted by a medical student in an area identified by SIR Foundation as important to the advancement of interventional radiology and patient care. (See sirfoundation.org/grants-awards/index.shtml#stu for details; applications are due Feb. 1, 2016.)

Through their named fund, longtime donors Dr. and Mrs. Culp find a vehicle to make a meaningful gift that will directly touch the lives of medical students and encourage them to become physician scientists—as well as find a way to advance the science and practice of IR, both today and for many years to come. Please join us in thanking Dr. and Mrs. Culp for their continued vision and their incredible philanthropic spirit. Please join us in thanking Dr. and Mrs. Culp for their continued vision and their incredible philanthropic spirit.

Read the full story about how the Culps’ generosity is advancing IR’s future in the summer edition of the SIR Foundation Chair’s Update (mailed to you with this issue of IR Quarterly). Are you interested in establishing a named fund through a generous donation to support research? Please contact Julie M. Wolfe, SIR Foundation development director, at (703) 460-5591 or email jwolfe@sirweb.org.
A consultative, innovative approach to IR

An interview with the leaders of VIR Chicago

By Henry Mortimer

Operating a successful IR practice in today’s dynamic health care environment requires new strategies to bring value to a diverse set of stakeholders. Regulators, payers, health systems and patients, coming from different angles, have effectively reorganized the priorities of health care delivery. While maintaining a focus on high-quality patient care is still the top priority, greater emphasis is being given to more efficient access, enhancement of patient experience, and documented proof of high-quality outcomes—all at reduced cost.

One practice taking advantage of such innovations is Chicago-based Vascular and Interventional Radiology, or VIR Chicago, for short. As its name implies, the group’s eight physicians and four physician assistants are an independent group who practice vascular and interventional radiology exclusively and have successfully transitioned from a primarily inpatient service to an outpatient one.

According to Francis R. Facchini, MD, FSIR, the dual focus on developing both the clinical and business aspects of the practice has contributed to VIR’s success for nearly a decade. Recently, IR Quarterly spoke with physician practice co-leaders Dr. Facchini (whose area of interest is interventional oncology), Luke E. Sewall, MD (whose focus is on endovascular IR), and Beth Cummings, MBA, CMPE, CCRA, director of VIR, about how VIR Chicago has adapted to the changing health care landscape and what the future holds for the specialty.

What makes Vascular and Interventional Radiology (VIR) Chicago successful?

We are embracing the rapid changes occurring in the health care industry as it transitions from a business-to-business model to a consumer-oriented one. For example, we now provide 24/7 consultative services and have adopted a longitudinal care model, both of which have been instrumental in the development of a successful practice, in the hospital and out in the community. By being better able to engage with patients, families and the multidisciplinary care team throughout a course of care—ranging from weeks to years—we can open up a dialogue, build trust, enhance our reputation and boost our opportunities to collaborate with others seeking options for patients.

Adopting a longitudinal care model also has caused an increase in volume, prompting a need for increased scale and an investment in practice infrastructure. We have centralized our practice management functions, added physicians, physician assistants, and practice sites, improved our technology and Internet presence, and hired operational specialists to improve our reach in and service to the community.

We also made the decision to switch from a general IR practice to subspecialized IR practice, which has opened a lot of doors for us. As a result, we have become less of a commodity and are providing more diversified services. This has secured referrals from inside of our primary and secondary areas and made referrals from outside these areas more common.

How have these changes impacted patients?

These investments have helped improve both practice quality and the patient experience. The larger group of VIR Chicago physicians practicing full-time IR has fostered physician sub-specialization and clinical research participation, expanding treatment options, and enhancing our technical expertise and value as consulting physicians in the areas of cancer, spinal fractures, peripheral arterial disease, uterine fibroids, varicose veins, and portal hypertension. Engaging, educating, and advocating for patients has become a large part of what we do and is enriched by our passion for our sub-specialties.

Equally important, VIR Chicago’s enhanced infrastructure allows us to care for the sickest and costliest of patients, both in the hospital and in the community, providing opportunities for cost reduction and quality care close to home. VIR Chicago’s full-time presence in six hospitals and 24/7 call coverage...
facilitates timely inpatient treatment for liver and kidney obstruction, pulmonary embolism, DVT and vascular emergencies, helping community health systems manage care efficiently in-house with minimal transfers out. In addition, our three outpatient clinics are staffed with physicians and physician assistants to provide convenient, ongoing patient care and a cost-saving alternative to the emergency room.

Specialty outpatient medical care can be disjointed and confusing for consumers. By leveraging the centralized support services, our outpatient clinics can provide patients from a larger geographic area with a single point of contact for call-center enhanced nurse triage services, schedulers and insurance specialists to help coordinate care. Also, we are developing customized patient financial services to help meet patients’ needs for transparency in pricing and better-informed decision-making for their health care.

What innovations have you made to keep VIR on the leading edge?

Over the years, we have instituted a number of changes that have transformed the practice completely. We like to think of it as moving from “VIR 1.0” to “VIR 2.0”—going from a traditional IR practice model to one that is more interactive, collaborative and beneficial to patients and collaborating physicians. In VIR 2.0, our specialists are able to engage with patients along the continuum of care, consulting with them and other providers, collaborating about treatments, and providing follow-up care and communications. We know we are not alone in adopting this practice model, but it has been instrumental to our success. By being actively involved in patient care committees, on the floor in the hospitals and clinics, and participating in the decision-making process, we have become a more accessible, relationship-based practice. We are able to help people solve their clinical problems and are no longer just order-takers. More important, referring physicians have grown to trust our decision-making and our commitment to care beyond the procedure.

Changes we have made to accommodate this new model include moving a number of key employees from part time to full time, establishing uniform practice protocols, and upgrading our technical and business infrastructure in order to implement and support care across the continuum.

Also, the decision to switch from a general IR practice to subspecialized IR practice was a game-changer for us. We transitioned from being referred patients to being a referrer. Using a football analogy, it’s like switching from playing wide-receiver to starting quarterback. And by offering defined subspecialties, we are able to market to physicians and patients. Promoting along service lines—for instance, advertising our varicose vein, UFE or varicocele treatments in print and online—allows us to reach out to a specific and defined patient population in a way that’s understandable to all.

What has made the biggest difference?

Centralizing our business infrastructure has been critically important, providing economies of scale, greater efficiency, reducing variability in care and allowing us to cover more geography. With all of our supportive processes concentrated in one unit, we can think beyond the clinical practice model and design tools and business processes tailored to providing full-time IR care for the long haul. It allows us to scale up, develop and share best practices, and ultimately reach and treat more patients.

It is a combination of factors, really—the changes made to all of the people, processes, technology and training required to engage patients and referring physicians from consultation to treatment (procedural or not) to follow-up—that has allowed us to deliver value beyond the inpatient setting. It has been not what we do, as much as how we do it that has made the difference so far.

What does the future hold for VIR Chicago?

Interventional radiology, as a specialty highly regarded for its technical innovation, will need to continue to innovate in new ways. Future success will require effectiveness beyond the procedure table—at the board room table, at the dinner table and at the conference table—and with a healthy respect for the timetable of change within the industry and for care delivery. Advances in our practice will need to dovetail with changing payer and health system needs.

For us, the future of VIR Chicago—moving to VIR 3.0—requires continued excellence in consumer-focused, outpatient health care delivery, plus our internal push toward the mastery of the business of VIR Chicago. We must become masters of revenue cycle management, quality assessment, and reporting. To do this, we must generate and evaluate data and develop the systems and criteria in support of these efforts. This will allow us to identify and develop collaborative methods to reduce costs, improve outcomes, and deliver the value of VIR 3.0—clinically and financially—to a broader audience on a larger scale. When we get there, VIR 3.0 will be a solid business that is good for IR and great for patients.

Henry Mortimer is president of MortimerCommunications.com, which works with health care companies to find their voice and tell their story in order to achieve their strategic goals.
My experience at the 2015 Fellows Spring Practicum

I recently attended the SIR Spring Fellows Practicum in Chicago. Past years’ fellows at my program had strongly recommended that I attend, but all had graduated and moved on before I could get any details on why they thought it was important. I didn’t know what to expect, but the lectures in last year’s program seemed to cover a lot of ground. Given the schedule and agenda provided this year, I hoped that the topics would help solidify many of the concepts and procedures I have been learning throughout the year.

The three-day course overall far exceeded my expectations. From the panel discussions to the lectures, it covered numerous important topics with a strong sense of mentorship interwoven throughout the lecturers and sessions. It reviewed and tied together many concepts, techniques and procedural details, including new approaches to procedures that we currently perform at my institution. After sessions, lecturers were available for further questions and discussion.

I was able to bring back to my home institution many take-home points. For example, just a few weeks after the meeting, a patient in need of acute thrombolysis for iliofemoral deep vein thrombosis (DVT) presented for consultation to our group. Using protocols and techniques adopted at the conference after much discussion with the lecturers, my co-fellow and I strongly advocated for an aggressive, single-session treatment strategy. My attending agreed and allowed us to successfully complete the case with new treatment strategies learned at the symposium. The patient did well and required no overnight thrombolysis or ICU admission. The course also covered many new topics in detail, such as techniques and application of radial arterial access.

Between sessions and during the evening product demos, it was good to catch up with fellows I had met at other conferences.

I enjoyed sharing fellowship experiences, comparing program details and discussing future job opportunities.

Overall, I felt that the attendees were excited by IR as a specialty and very satisfied with their chosen field. Most attendees I talked with had accepted jobs already and were pleased with their future employment pathways.

The overall sense of accomplishment at getting near the end of our fellowship year was in the air, which was reinforced by the speakers; we are in an exciting and ever-changing specialty and the dynamic future for the individual practitioners was palpable in the room. The current IR leadership encouraged us to reach out for support in our first few years as we develop our skills and grow our practices. They reminded us that fellowship cannot possibly prepare us for every aspect of a rapidly changing specialty. By building on the foundations that our training had prepared us for, we are more than ready to begin our careers.

The practicum was not just an excellent review of current literature. It also reviewed current and proposed future procedural IR skills. The program paid equal attention to career advice for both academic and private practice careers. There were also highly practical sessions on practice building strategies, marketing and coding for attendees who will soon need these skills to survive in the real world. These immensely helpful talks covered topics that are often overlooked during residency and fellowship. Meeting speakers did an excellent job of providing a boot camp of sorts to quickly establishing oneself with a solid foundation in a new upcoming career.

As I left the meeting and headed back home to Vermont, I could not help but reflect on how much ground we had covered in such a short time. The course was fast-paced and filled with useful information. It reaffirmed my excitement at being close to completion of fellowship year and pulled together the concepts I’ve been learning during fellowship. I wholeheartedly recommend that future fellows attend the symposium. It truly was a capstone experience of my fellowship year and is one of the last opportunities one has to learn in a protected environment dedicated solely to our fellow education level.

I extend my many thanks to all of the faculty and organizers who hosted the 2015 symposium for their hard work and dedication to education and the future of the specialty.
YOU PICTURE THE POSSIBILITIES OF IR

Now turn them into realities

“"We find ourselves thinking about the future a lot more than we used to. Not just our future and that of our children, but also the future of interventional radiology. We want to make certain that SIR Foundation, an organization we’ve believed in and supported, will still be doing its job long after we’re gone. We decided it was time to start making definite plans to help ensure interventional radiology’s future as well as that of our family.”

—Michael Edwards, MD, FSIR, and Sherri Edwards

The Edwardses’ planned gift enables them to support an organization that they care about as well as offering a way for them to pay it forward by creating a scholarship fund for future IR fellows. Their philanthropy is critical to the future of interventional radiology. We are grateful for their visionary spirit in choosing to make SIR Foundation a part of their estate plans. Consider following the Edwardses lead by starting your philanthropic legacy today with SIR Foundation.

Visit sirfoundation.org/legacy, our online planned giving resource center, to find out about gift options, including the easiest option, a simple bequest. To learn more about a gift that can impact the future of the specialty, contact SIR Foundation today.

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Randomized assessment of rapid endovascular treatment of ischemic stroke.


BACKGROUND: Among patients with a proximal vessel occlusion in the anterior circulation, 60 to 80% of patients die within 90 days after stroke onset or do not regain functional independence despite alteplase treatment. We evaluated rapid endovascular treatment in addition to standard care in patients with acute ischemic stroke with a small infarct core, a proximal intracranial arterial occlusion, and moderate-to-good collateral circulation.

METHODS: We randomly assigned participants to receive standard care (control group) or standard care plus endovascular treatment with the use of available thrombectomy devices (intervention group). Patients with a proximal intracranial occlusion in the anterior circulation were included up to 12 hours after symptom onset. Patients with a large infarct core or poor collateral circulation on computed tomography (CT) and CT angiography were excluded. Workflow times were measured against predetermined targets. The primary outcome was the score on the modified Rankin scale (range, 0 [no symptoms] to 6 [death]) at 90 days. A proportional odds model was used to calculate the common odds ratio as a measure of the likelihood that the intervention would lead to lower scores on the modified Rankin scale than would control care (shift analysis).

RESULTS: The trial was stopped early because of efficacy. At 22 centers worldwide, 316 participants were enrolled, of whom 238 received intravenous alteplase (120 in the intervention group and 118 in the control group). In the intervention group, the median time from study CT of the head to first reperfusion was 84 minutes. The rate of functional independence (90-day modified Rankin score of 0 to 2) was increased with the intervention (53.0%, vs. 29.3% in the control group; P<0.001). The primary outcome favored the intervention (common odds ratio, 2.6; 95% confidence interval, 1.7 to 3.8; P<0.001), and the intervention was associated with reduced mortality (10.4%, vs. 19.0% in the control group; P=0.04). Symptomatic intracerebral hemorrhage occurred in 3.6% of participants in intervention group and 2.7% of participants in control group (P=0.75).

CONCLUSIONS: Among patients with acute ischemic stroke with a proximal vessel occlusion, a small infarct core, and moderate-to-good collateral circulation, rapid endovascular treatment improved functional outcomes and reduced mortality. (Funded by Covidien and others; ESCAPE ClinicalTrials.gov number, NCT01778335.)

Endovascular therapy for ischemic stroke with perfusion-imaging selection.


BACKGROUND: Trials of endovascular therapy for ischemic stroke have produced variable results. We conducted this study to test whether more advanced imaging selection, recently developed devices, and earlier intervention improve outcomes.

METHODS: We randomly assigned patients with ischemic stroke who were receiving 0.9 mg of alteplase per kilogram of body weight less than 4.5 hours after the onset of ischemic stroke either to undergo endovascular thrombectomy with the Solitaire FR (Flow Restoration) stent retriever or to continue receiving alteplase alone. All the patients had occlusion of the internal carotid or middle cerebral artery and evidence of salvageable brain tissue and ischemic core of less than 70 ml on computed tomographic (CT) perfusion imaging. The coprimary outcomes were reperfusion at 24 hours and early neurologic improvement (≥8-point reduction on the National Institutes of Health Stroke Scale or a score of 0 or 1 at day 3). Secondary outcomes included the functional score on the modified Rankin scale at 90 days.

RESULTS: The trial was stopped early because of efficacy after 70 patients had undergone randomization (35 patients in each group). The percentage of ischemic territory that had undergone reperfusion at 24 hours was greater in the endovascular-therapy group than in the alteplase-only group (median, 100% vs. 37%; P<0.001). Endovascular therapy, initiated at a median of 210 minutes after the onset of stroke, increased early neurologic improvement at 3 days (80% vs. 37%; P=0.002) and improved the functional outcome at 90 days, with more patients achieving functional independence (score of 0 to 2 on the modified Rankin scale, 71% vs. 40%; P=0.01). There were no significant differences in rates of death or symptomatic intracerebral hemorrhage.
CONCLUSIONS: In patients with ischemic stroke with a proximal cerebral arterial occlusion and salvageable tissue on CT perfusion imaging, early thrombectomy with the Solitaire FR stent retriever, as compared with alteplase alone, improved reperfusion, early neurologic recovery, and functional outcome.

Drug-coated balloon versus standard percutaneous transluminal angioplasty for the treatment of superficial femoral and popliteal peripheral artery disease: 12-month results from the IN.PACT SFA randomized trial.


BACKGROUND: Drug-coated balloons (DCBs) have shown promise in improving the outcomes for patients with peripheral artery disease. We compared a paclitaxel-coated balloon with percutaneous transluminal angioplasty (PTA) for the treatment of symptomatic superficial femoral and popliteal artery disease.

METHODS AND RESULTS: The IN.PACT SFA Trial is a prospective, multicenter, single-blinded, randomized trial in which 331 patients with intermittent claudication or ischemic rest pain attributable to superficial femoral and popliteal peripheral artery disease were randomly assigned in a 2:1 ratio to treatment with DCB or PTA. The primary efficacy end point was primary patency, defined as freedom from restenosis or clinically driven target lesion revascularization at 12 months. Baseline characteristics were similar between the 2 groups. Mean lesion length and the percentage of total occlusions for the DCB and PTA arms were 8.94 ± 4.89 and 8.81 ± 5.12 cm (P=0.82) and 25.8% and 19.5% (P=0.22), respectively. DCB resulted in higher primary patency versus PTA (82.2% versus 52.4%; P<0.001). The rate of clinically driven target lesion revascularization was 2.4% in the DCB arm in comparison with 20.6% in the PTA arm (P<0.001). There was a low rate of vessel thrombosis in both arms (1.4% after DCB and 3.7% after PTA [P=0.10]). There were no device- or procedure-related deaths and no major amputations.

CONCLUSIONS: In this prospective, multicenter, randomized trial, DCB was superior to PTA and had a favorable safety profile for the treatment of patients with symptomatic femoropopliteal peripheral artery disease.

P lanning has begun for the SIR 2016 Annual Scientific Meeting, and there is already much to be excited about in the program. Hot topics we hope to feature include:

• Advanced vascular access techniques
• Stroke intervention
• Advances in pain management
• Recent research on pulmonary thrombolysis, just to name a few

We know our attendees want a meeting that is both comprehensive and easier than ever to navigate and SIR 2016 will not disappoint.

Speaking of navigation, I had the great pleasure of visiting Vancouver for the first time in April, a city with a long nautical history. All SIR 2016 attendees are in for a treat next year! The city is full of fountains, gardens and beautiful vista of the surrounding sea and awe-inspiring landscape. The number of excellent restaurants and fine hotels within walking distance of the convention center is outstanding.

But we need your help: I strongly encourage you to get involved in our society through our biggest and most important meeting. Our annual meeting belongs to all members, but its success comes from the efforts of our member volunteers. If you are looking for a way to be involved in the planning or programming for SIR 2016, do not hesitate to get in touch with me via annualmeeting@sirweb.org. I hope to see all of you in Vancouver next April.
HI-IQ® IRIS facilitates clinical practice

Over the past decade, SIR has increased its emphasis on the importance of longitudinal clinical activity to an IR practice’s viability. IRs are listening—and so is the business world. HI-IQ has continued to monitor the needs of the IR customer through focus group discussions involving interventional radiologists, business managers and other end-users. As a result of needs this group expressed, ConexSys HI-IQ has released HI-IQ IRIS, a more modern, integrated and user-friendly version of the popular tool, which features both new and enhanced functionality to facilitate the longitudinal follow-up of IR patients.

Unlike EMR/RIS systems that typically compartmentalize each patient encounter in a strict chronologic order, Episodes of Care within HI-IQ IRIS are groupings of encounters that are logically related. Encounters can now be grouped together for review and evaluation when considering the patient’s clinical activity, allowing for better medical management of IR patients.

A new data-collection module generates standardized questionnaires for follow-up encounters according to user preferences. Information supplied on the questionnaires can be used for patient documentation as well as for aggregate information collection to evaluate personal or physician group outcomes. For instance, the Follow-up Questionnaire Analysis report allows a physician group to report average level of pain for UFE patients postprocedure at one-week, one-month and one-year intervals. The module will also allow generation of procedure-specific patient instructions or other documentation relevant to the patient’s diagnosis. A Physician Rounds report also tracks patients who need inpatient follow-up and provides standardized postprocedure documentation templates.

HI-IQ IRIS’s enhanced follow-up functionality is intended to serve several purposes. The scheduling component can be used to build in procedure- or disease-specific, automatic follow-up scheduling reminders based on predetermined algorithms. This module can create a reminder to schedule rounds, clinic visits, office visits, follow-up phone encounters or follow-up imaging as determined by one’s practice preferences.

The overwhelmingly positive response to the initial release of HI-IQ IRIS and its ability to assist with the long-term follow-up of patients suggests that more interventional radiologists are demanding support for their clinical endeavors. ConexSys is excited to continue its relationship with SIR and move forward in a collaborative manner with the IR community to develop products that specifically meet the needs of clinical IRS. Future articles in IR Quarterly will explore other elements of the HI-IQ system that support the interventional radiology practice.

Disclaimer: Please note that SIR is not responsible for any products or services offered by ConexSys, including HI-IQ. Nor is SIR responsible for any guarantees offered by ConexSys. Any concerns or questions about HI-IQ should be directed to ConexSys at (866) 604-4447.
The Corporate Ambassador Program (CAP) is a high impact, coordinated recognition program that helps advance the mission of the society and its foundation. Join us in thanking our CAP partners, who have chosen to invest in IR today and in the future.

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*As of April 13, 2015
Establishing a patient safety program in fluoroscopy

Attention to patient radiation safety in fluoroscopy is important from both an ethical and medicolegal perspective. Practices that perform fluoroscopically guided interventions (FGI) should implement policies and procedures requiring adherence to a patient safety program in fluoroscopy. The success of such a program requires the cooperation of everyone involved in FGI, including technologists, nurses, medical physicists and physicians.

There are three phases during which patient safety must be considered: preprocedure, intraprocedure and postprocedure.

### Preprocedure phase
All personnel involved with FGI should undergo training commensurate with their involvement in the procedure. At a minimum, this includes training in radiation safety for all staff; training in basic radiation physics and management for technical staff; and comprehensive training in the physics of fluoroscopy, radiation biology, radiation safety and radiation management for fluoroscope operators. Minimum competence levels should be established and evaluated and regular refresher training required. Satisfaction of training and competency requirements should be part of the privileging process for physicians.

The informed consent process for potentially high-dose FGI should include informing the patient about the small risk of a radiation-induced skin reaction and the procedures in place to prevent such reactions. Patients at increased risk for skin injury should be identified and managed appropriately. The most important risk factors are obesity, prior irradiation of the same skin site and diabetes.

### Intraprocedure phase
Tools should be available to help the operator select the appropriate radiation dose rate for different patients and clinical tasks during FGI. This might include specific imaging protocols for pediatric patients and adult imaging protocols at low, normal and high dose rates. The operator, managing physician and staff involved in FGI should be aware at all times of the total radiation dose used at any point during an FGI and the current dose rate. Radiation dose should be managed like iodine contrast.

Reference air kerma notification levels should be established and posted in each procedure room and, if possible, programmed into the fluoroscope. Policies and procedures should assign responsibility for ensuring that a clear announcement or indication is made when a notification level is reached and should include suggested actions to be taken at each notification level. It is important that the accuracy of integrated dose monitoring devices on fluoroscopes be evaluated by a qualified medical physicist, as regulation requires only that the displayed reference air kerma is within +/-35 percent of the true.

### Postprocedure phase
Policies and procedures should specify a substantial radiation dose level (SRDL) for FGI. The SRDL is the level of a dose metric that, when reached, triggers the organization’s patient follow-up process. The National Council on Radiation Protection and Measurements recommends 5 Gy reference air kerma as the SRDL. Policies should also specify the procedures for patient follow-up when the SRDL is reached or exceeded.

All skin reactions following FGI should be considered radiogenic until proven otherwise. Management of the patient is the responsibility of the physician performing the FGI until complete resolution of any skin reaction is achieved. After extremely large doses of radiation (e.g., > 15 Gy), interim healing may be observed followed by ulceration, breakdown or necrosis of the affected skin site. Keeping the skin intact is of utmost importance. Severe injuries may require surgical intervention and may never heal completely.

Fluoroscopy dose metrics—including but not limited to fluoroscopy time, kerma area product and reference air kerma—should be recorded for each procedure and reviewed on a regular basis. Facility data should be organized into facility data sets (FDS), which should be compared to advisory data sets (ADS) such as the RAD-IR study.

Information necessary for estimating the peak skin dose (PSD) from the reference air kerma should be recorded for all procedures during which the SRDL is exceeded. At a minimum, this should include the patient table height during the procedure and would ideally include gantry angles for all acquired images. It is important to measure the height of the table before lowering it to hold compression on the access site or to transfer the patient. If such information is not recorded, it still may be possible to estimate the PSD with a reasonable degree of accuracy, as it has been shown that the PSD is approximately equal to the reference air kerma for FGI.
performed using a nonisocentric geometry. It is not possible to accurately estimate the PSD from fluoroscopy time alone.

References


Owing IR’s future

As anyone who attended the SIR 2015 Annual Scientific Meeting’s “Debates and Controversies” session knows, our patients do not have a good understanding about what IR entails. We must always be cognizant, though, that the problem is not restricted to our professional environment. The House of Medicine is a complex construct of different and overlapping specialties. It can be tough to navigate as a trained practitioner and nearly impossible for someone not intimately familiar with the blueprint. As a newly recognized specialty in this conglomerate, we have the added challenge of distinguishing ourselves. Failing to give ourselves a distinct voice means not having a say in the critical decisions made at the government level. Fortunately, we do have a voice—the Society of Interventional Radiology Political Action Committee (SIRPAC).

Created in 2006, SIRPAC is its own entity, completely separate from SIR and SIR Foundation. It serves a different purpose: to represent the specific needs of interventional radiologists where critical decisions are made. It is our PAC that allows us to have a constant presence in the government arena.

That presence has led to some important victories, such as the recent sustainable growth rate (SGR) repeal (see p. 16 for more details). SIRPAC has worked on protecting our interests even before the repeal, such as the effort by Congress in 2008 to replace SGR with six different payment silos including imaging, surgical, primary care and anesthesiology. Interventional radiology was slated to go under the “imaging” silo, which some experts say would have resulted in a 38.5 percent cut in reimbursement. After numerous meetings with members of Congress and their staff, SIR succeeded in amending the legislation, moving IR from the imaging silo to surgical and assisting the key decision makers in Congress in understanding our specialty. Thanks to SIRPAC’s effort and the support of SIR’s leaders, interventional radiology services have not seen a direct cut in seven years.

Continuing this task has not been easy, but it is certainly necessary. Because Capitol Hill is a revolving door, we need a consistent campaign to educate today’s policymakers on the practice and value of IR. We must accept that elected and appointed government officials decide how we deliver care, the benchmarks to measure the quality of our care, and future payment models and individual reimbursement.

Yet, despite our PAC’s importance, our constituent support is well behind that of the PACs of comparable societies. In 2014, we raised only $37,776, whereas vascular surgery’s PAC regularly raises $200,000 per cycle, and cardiology PAC typically raises $800,000–$1 million per cycle. Those groups have a significant competitive advantage over SIR, with twice the amount of resources and thus at least twice the amount of influence in the decision-making process.

By underfunding our PAC, we diminish the strength of our voice. Rather than define ourselves, define our quality and our contributions to care, we are allowing other groups such as vascular surgery and cardiology to define us. We are voluntarily ceding the recognition we fought so hard for and the ownership of our future.

We are fortunate to have strong ties with the American College of Radiology’s RADPAC and we continue to support RADPAC’s efforts. However, SIRPAC has distinct and different goals and issues to address and must have our own dedicated voice. It is time for us to accept the responsibility of a new separate specialty with different requirements, challenges and goals.

We all need to commit to our specialty by supporting SIRPAC. To that end, SIR is announcing “Campaign 400,” which has targeted an increase in PAC contributions to $400,000 each cycle. This contribution level will make us more competitive and agile in our efforts to advocate for ourselves and IR’s future. It will allow us to foster new relationships with key policy makers and strengthen old alliances. It will give us an ever-present voice at the table in discussions that vascular surgery and cardiology have already started.

I encourage you to commit to renewable donations to SIRPAC. I currently contribute $100 a year. When I begin fellowship in July, I will increase my automatic donation to a manageable $50 a month. I urge you to join me and support this specialty that we love. Give our leadership the tools it needs to advocate for IR and our patients. Please log into your member account on sirweb.org and commit to supporting the care we are so proud to deliver.

In the meantime, please do not hesitate to contact me or Doug Huynh, SIR director of health policy and government affairs, with questions or comments, or to inquire about ways to get further involved in SIR advocacy.
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Please consult product labels and package inserts for indications, contraindications, warnings, precautions, complications, and information for use.

Central veins = Subclavian Vein and Brachiocephalic Vein

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