

# How to Improve the Imaging Experience

## *Strategies for Physicians and Radiologists*

**The overuse of diagnostic imaging modalities—X-ray and CT scanning in particular—and the exposure of patients to excessive radiation has received a lot of attention recently.**

Since the FDA released its Public Health Notification, “Reducing Radiation Risk from Computed Tomography for Pediatric and Small Adult Patients,” in November 2001<sup>1</sup>, the National Cancer Institute<sup>2</sup>, the American College of Radiology<sup>3</sup>, the Joint Commission<sup>4</sup>, the Institute for Clinical Systems Improvement<sup>5</sup>, the American Academy of Pediatrics<sup>6</sup> and others have jumped on the medical radiation safety bandwagon.

The main focus of the national radiation safety campaigns and research studies has been the appropriate use of diagnostic imaging modalities, i.e., always using the imaging modality and study that will yield the highest level of diagnostic acuity with the least amount of medical radiation. A parallel issue is the significant, financial impact of diagnostic testing—whether tests are medically necessary or ordered as “defensive medicine.”

As with all tests, it is incumbent on clinicians to assess whether the results will make a difference in the management of the patient and how they will address positive (or negative) findings. For instance, in an elderly patient, if the physician finds a tumor, would the patient be able to withstand surgery or other therapies that might be indicated by the diagnosis?

With this in mind, how can physicians order diagnostic imaging studies without placing their patients at risk for excessive radiation or undue financial burden? Many care providers express frustration about radiology reports received from imaging referral centers. Complaints include:

- Vague reports
- Absence of definitive diagnoses
- Failure to provide information beyond what they knew before the X-ray
- Recommendations for more studies or more views
- Lack of accountability for identifying definite diagnoses
- Delays in receiving study results or reports

Referring physicians surveyed for their feedback by a major Pennsylvania

teaching hospital<sup>7</sup> commented that interpreting radiologists need to “make a commitment about the finding. . . either rule out something or don’t, but don’t put clinicians in the position of trying to interpret the radiologist’s interpretation.”



### Concerns from Radiologists

In contrast, radiologists complain about the lack of information provided in physician requests. They claim that many times additional views or studies, unnecessary radiation exposure, and delayed or missed diagnoses and treatment could have been prevented if adequate information was provided. For example: “If sufficient clinical information had been provided upfront, I could have told him that CT was NOT the imaging modality of choice.”

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## Ideally, imaging should yield the highest level of diagnostic acuity with the least amount of medical radiation.

Radiologists do not expect non-radiologists to be knowledgeable about the various imaging modalities and ever-changing technological advances in their field. Nor is a referring physician expected to know which modality or study of choice is needed in every patient situation.

To determine which imaging study will be the most effective in obtaining a timely diagnosis with the least amount of radiation exposure, there must be an exchange of information between referring physician and radiologist. Following are some tips for the referring physician and the radiologist:

### Strategies for Physicians

- **Expect that imaging recommendations will be increasingly challenged** by patients who are concerned about their lifetime radiation exposure. Patients are being urged to retain their personal radiation history through a jointly sponsored program of the FDA and Image Wisely™, an initiative of the American College of Radiology (ACR)/RSNA Joint Task Force on Adult Radiation Protection. (See “My Medical Imaging History” in the Resources section of this article.)
- **Contact a radiologist before sending the patient** to the facility if you’re unsure which modality or diagnostic study would be the most appropriate. A discussion with a radiologist may determine that a particular imaging modality may be more appropriate, special views are indicated or what you needed is not available at the facility (e.g., your patient is extremely claustrophobic, and the facility does not have an open CT scanner).

Consulting with a radiologist before ordering tests may save you and your patient time, money and inconvenience.

- **Provide essential clinical information** to the facility. Most hospital radiology departments and freestanding radiology facilities have a preferred diagnostic study order form or template and will provide a supply to physicians. These forms include information required by the radiologist, such as the reason for referral and the studies requested. The forms may also ask for a brief patient history, symptoms and possible diagnoses.



- **Provide any other information** that could be important to the facility, radiologic technologists or radiologists performing the study. Examples include sharing that the patient cannot lie flat due to a spinal deformity or that the patient suffers from extreme vertigo and should not be asked to stand without assistance/support. Such information could also improve patient safety and comfort.
- **Prominently note any history of allergic reactions** to contrast media, seafood, medications and latex on the exam request. Consult with the radiologist if you are uncertain if

***Expect patients to be increasingly “radiation-aware” due to recent publicity and public health education about the risks.***

your patient should have contrast media due to known allergies, impaired renal function or other medical conditions. The radiologist may advise prescribing medications or requiring certain creatinine levels before performing a study with contrast. Or, they may feel the use of contrast is contraindicated and alternative studies should be used.

- **Put in place a system to follow up** if results are not back in “x” amount of time. Practices can build alerts into either an electronic medical record system or a paper-based “tickler” system. The important thing is to have one that works consistently for your practice. If a diagnostic test result is outstanding, someone in your office should contact the radiology facility to avoid delays in diagnosing or treating your patient.
- **Ensure all test results are reviewed** by a physician before filing them in patients’ charts to help prevent diagnosis and treatment delays. All too often, an abnormal radiology report is filed without physician review, only to be discovered much later. This can delay the physician from acting upon the diagnostic findings and result in patient injury. It is a scenario that is ripe for malpractice litigation.
- **Act on any recommendations** for additional diagnostic studies or views—it is your responsibility. If

you do not understand or agree with the radiologist's recommendations, contact the radiologist for further discussion and clarification. If you elect not to follow the recommendations, document your rationale for the decision in the patient's record.

## Tips for Radiologists

- **Expect more "radiation-awareness"** in patients and referring physicians, due to recent publicity and public health education on the subject. It would be proactive to create for your staff a list of commonly performed exams and associated radiation dose. It may be helpful to hold an in-service program for department staff on radiation awareness and safety—from the perspective of staff, referring physicians and patients. Develop talking points so that consistent and accurate information will be given when radiation exposure questions arise.
- **Be accessible to referring physicians** when they call for guidance on ordering a particular test or modality. Your input will help assure that a patient receives the test that provides optimal diagnostic capability with the least amount of radiation exposure.
- **Provide referring physicians with preferred forms/templates** for ordering diagnostic studies in your



facility. This helps ensure that you have essential information when a patient arrives for a procedure. Make the forms as concise and user-friendly as possible, using checklists of examinations, and providing adequate space for the referring physicians to include pertinent clinical information.

- **Contact the referring physician if you do not have needed information.** If the clinical information given does not warrant the study ordered or if another study or modality would be more appropriate, discuss alternate options with the referring physician.
- **Develop protocols for providing reports to referring physicians** in a timely manner. The American College of Radiology's Practice Guideline for Communication of Diagnostic Imaging Findings<sup>8</sup> specifically states that an effective method of communication should:
  - Be tailored to satisfy the need for timeliness
  - Support the role of the interpreting physician as a consultant by encouraging physician communication, and minimize the risk of communication errors

Failure to communicate radiologic findings to referring physicians is a factor in 80 percent of malpractice lawsuits against radiologists, according to Leonard Berlin, M.D., Professor of Radiology at Rush University Medical College in Chicago.<sup>9</sup> Communication breakdowns can result in critical treatment delays, increased radiation exposure, increased cost of care, unnecessary tests and contraindicated procedures.

It is a *system* failure rather than a physician negligence issue. Accordingly, it is important to implement specific

***If you're unsure which modality or diagnostic study should be used, contact the radiologist before sending the patient to the facility.***

practice procedures to remedy communication breakdowns and ensure referring physicians receive study results in a timely manner.

1. "FDA Public Health Notification: Reducing Radiation Risk from Computed Tomography for Pediatric and Small Adult Patients," November 2, 2001. [www.fda.gov/MedicalDevices/Safety/AlertsandNotices/PublicHealthNotifications/ucm062185.htm](http://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/PublicHealthNotifications/ucm062185.htm)
2. Cancer Institute, "Radiation Risks and Pediatric Computed Tomography (CT): A Guide for Health Care Providers," Posted August 20, 2002, Updated December 22, 2008. [www.cancer.gov/cancertopics/causes/radiation/radiation-risks-pediatric-CT](http://www.cancer.gov/cancertopics/causes/radiation/radiation-risks-pediatric-CT)
3. Radiology Safety—Radiology Safety Resources, American College of Radiology. [www.acr.org/safety](http://www.acr.org/safety)
4. The Joint Commission, "Radiation Risks of Diagnostic Imaging," Sentinel Event Alert, Issue 47, August 24, 2011.
5. ICSI News, "ICSI Makes Decision-Support Option for Ordering HTDI Scans Available To Medical Groups and Hospital-Based Clinics Across Minnesota." Special Edition, November 3, 2010. [www.icsi.org/icsi\\_launches\\_statewide\\_medical\\_imaging\\_solution/icsi\\_launches\\_statewide\\_medical\\_imaging\\_solution\\_.html](http://www.icsi.org/icsi_launches_statewide_medical_imaging_solution/icsi_launches_statewide_medical_imaging_solution_.html)
6. What Pediatricians Should Know about Medical Radiation Safety. American Academy of Pediatrics. [www.aap.org/sections/radiology/RadiologyPediatricianPage.pdf](http://www.aap.org/sections/radiology/RadiologyPediatricianPage.pdf)
7. Keen, CE: Radiology reports: *What do physicians really want?* AuntMinnie.com, December 3, 2009.
8. ACR Practice Guideline, Revised 2010 (Resolution 11). [www.acr.org/secondarymainmenucategories/quality\\_safety/guidelines/dx/comm\\_diag\\_rad.aspx](http://www.acr.org/secondarymainmenucategories/quality_safety/guidelines/dx/comm_diag_rad.aspx)
9. Yee, KM: *Communication failure: A surefire route to malpractice court.* AuntMinnie.com, February 16, 2010

## Resources on Imaging

**Center for Devices and Radiological Health**—White Paper: Initiative to Reduce Unnecessary Radiation Exposure from Medical Imaging, February 2010. U.S. Food and Drug Administration. [www.fda.gov/Radiation-EmittingProducts/RadiationSafety/RadiationDoseReduction/ucm199994.htm](http://www.fda.gov/Radiation-EmittingProducts/RadiationSafety/RadiationDoseReduction/ucm199994.htm)

**American Academy of Pediatrics**—What Pediatricians Should Know about Medical Radiation Safety, American Academy of Pediatrics. [www.aap.org/sections/radiology/RadiologyPediatricianPage.pdf](http://www.aap.org/sections/radiology/RadiologyPediatricianPage.pdf)

**American College of Radiology (ACR) Appropriateness Criteria®**—Evidence-based guidelines to help referring physicians and other providers make the most appropriate imaging or treatment decision for a specific clinical condition. By employing these guidelines, providers enhance quality of care and contribute to the most efficacious use of radiology. There are more than 175 topics with over 850 variants in the March 2011 version. The ACR allows individuals to use the ACR Appropriateness Criteria® for research, scientific and/or informational purposes only. [www.acr.org/ac](http://www.acr.org/ac)

**ACR Practice Guidelines for Communication of Diagnostic Findings**, Revised 2010 (Resolution 11)—[www.acr.org/secondarymainmenucategories/quality\\_safety/guidelines/dx/comm\\_diag\\_rad.aspx](http://www.acr.org/secondarymainmenucategories/quality_safety/guidelines/dx/comm_diag_rad.aspx)

**Image Gently**—An initiative of the Alliance for Radiation Safety in Pediatric

Imaging. The Alliance was founded by the Society for Pediatric Radiology, American College of Radiology, American Society for Radiologic Technologists, and the American Association of Physicists in Medicine. The Alliance goal is to change practice: to raise awareness of the opportunities to lower radiation dose in the imaging of children. [www.pedrad.org/associations/5364/ig/](http://www.pedrad.org/associations/5364/ig/)

**Image Wisely: Radiation Safety in Adult Medical Imaging**—A campaign to increase awareness about adult radiation protection launched at RSNA 2010 by the American College of Radiology (ACR)/RSNA Joint Task Force on Adult Radiation Protection. It encourages radiology professionals to take personal responsibility to keep patients safe from inappropriate and/or excessive exposure to radiation dose. [www.imagewisely.org](http://www.imagewisely.org)

**My Medical Imaging History**—A record for patients to track their personal imaging history. Available in full-page or wallet-sized versions. Co-sponsored by Image Wisely and the U.S. Food Drug Administration. [www.imagewisely.org](http://www.imagewisely.org)

**Radiation Safety Information and Resources for Referring Practitioners**—Referring physicians and other healthcare providers need reliable information to help manage their patients' imaging needs. [www.imagewisely.org/Referring-Practitioners/Articles/Radiation-Safety-Information-and-Resources-for-Referring-Practitioners.aspx](http://www.imagewisely.org/Referring-Practitioners/Articles/Radiation-Safety-Information-and-Resources-for-Referring-Practitioners.aspx)  
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## Questions?

*If you have any questions you'd like our Connection experts to answer, please e-mail them to [riskmanagement@psicinsurance.com](mailto:riskmanagement@psicinsurance.com)*

**RadiologyInfo.org**—This radiology resource for patients developed jointly by the ACR and RSNA explains how various X-ray, CT, MRI, ultrasound, radiation therapy and other procedures are performed. It also addresses what patients may experience and how to prepare for the exams. The website contains over 100 radiologic procedures and is updated frequently with new information. All material on the website is reviewed and approved by experts in the field of radiology from the ACR and RSNA, as well as other professional radiology organizations. [www.radiologyinfo.org](http://www.radiologyinfo.org)

**Institute for Clinical Systems Improvement (ICSI)**—An organization working with the medical community to enable providers to use appropriateness criteria to order high-technology diagnostic imaging scans at the point of care as an option to health plan prior notification. [www.icsi.org/health\\_care\\_redesign\\_/diagnostic\\_imaging\\_35952/](http://www.icsi.org/health_care_redesign_/diagnostic_imaging_35952/)

**Transforming High-Tech Diagnostic Imaging**—ICSI's Decision Support Brochure. Provides background information on ICSI's option for using decision support to order high-tech diagnostic images. [www.icsi.org/new\\_category\\_53745/icsi\\_decision-support\\_brochure\\_.html](http://www.icsi.org/new_category_53745/icsi_decision-support_brochure_.html)



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