ACR PRACTICE PARAMETER FOR RADIOLOGIST COVERAGE OF IMAGING PERFORMED IN HOSPITAL EMERGENCY DEPARTMENTS

Revised 2023 (Resolution 30)*

The American College of Radiology, with more than 30,000 members, is the principal organization of radiologists, radiation oncologists, and clinical medical physicists in the United States. The College is a nonprofit professional society whose primary purposes are to advance the science of radiology, improve radiologic services to the patient, study the socioeconomic aspects of the practice of radiology, and encourage continuing education for radiologists, radiation oncologists, medical physicists, and persons practicing in allied professional fields.

The American College of Radiology will periodically define new practice parameters and technical standards for radiologic practice to help advance the science of radiology and to improve the quality of service to patients throughout the United States. Existing practice parameters and technical standards will be reviewed for revision or renewal, as appropriate, on their fifth anniversary or sooner, if indicated.

Each practice parameter and technical standard, representing a policy statement by the College, has undergone a thorough consensus process in which it has been subjected to extensive review and approval. The practice parameters and technical standards recognize that the safe and effective use of diagnostic and therapeutic radiology requires specific training, skills, and techniques, as described in each document. Reproduction or modification of the published practice parameter and technical standard by those entities not providing these services is not authorized.

PREAMBLE

This document is an educational tool designed to assist practitioners in providing appropriate radiologic care for patients. Practice Parameters and Technical Standards are not inflexible rules or requirements of practice and are not intended, nor should they be used, to establish a legal standard of care[1]. For these reasons and those set forth below, the American College of Radiology and our collaborating medical specialty societies caution against the use of these documents in litigation in which the clinical decisions of a practitioner are called into question.

The ultimate judgment regarding the propriety of any specific procedure or course of action must be made by the practitioner considering all the circumstances presented. Thus, an approach that differs from the guidance in this document, standing alone, does not necessarily imply that the approach was below the standard of care. To the contrary, a conscientious practitioner may responsibly adopt a course of action different from that set forth in this document when, in the reasonable judgment of the practitioner, such course of action is indicated by variables such as the condition of the patient, limitations of available resources, or advances in knowledge or technology after publication of this document. However, a practitioner who employs an approach substantially different from the guidance in this document may consider documenting in the patient record information sufficient to explain the approach taken.

The practice of medicine involves the science, and the art of dealing with the prevention, diagnosis, alleviation, and treatment of disease. The variety and complexity of human conditions make it impossible to always reach the most appropriate diagnosis or to predict with certainty a particular response to treatment. Therefore, it should be recognized that adherence to the guidance in this document will not assure an accurate diagnosis or a successful outcome. All that should be expected is that the practitioner will follow a reasonable course of action based on current knowledge, available resources, and the needs of the patient to deliver effective and safe medical care. The purpose of this document is to assist practitioners in achieving this objective.

---

1 *Iowa Medical Society and Iowa Society of Anesthesiologists v. Iowa Board of Nursing, 831 N.W.2d 826 (Iowa*

2013) Iowa Supreme Court refuses to find that the "ACR Technical Standard for Management of the Use of Radiation in Fluoroscopic Procedures (Revised 2008)" sets a national standard for who may perform fluoroscopic procedures in light of the standard's stated purpose that ACR standards are educational tools and not intended to establish a legal standard of care. See also, Stanley v. McCarver, 63 P.3d 1076 (Ariz. App. 2003) where in a concurring opinion the Court stated that "published standards or guidelines of specialty medical organizations are useful in determining the duty owed or the standard of care applicable in a given situation" even though ACR standards themselves do not establish the standard of care.

I. INTRODUCTION

It is the policy of the American College of Radiology (ACR) that radiologists provide comprehensive imaging services for patients seen in the emergency department (ED) and timely consultative services for health care providers [1,2]. The services of the radiologist available in the emergency setting include, but are not limited to, consultation with health care providers on the appropriate choices regarding use of imaging studies; the design and standardization of safe and effective radiological procedures; and continuing supervision of technical performance and quality control of imaging. Services also include timely interpretation of imaging examinations and effective reporting of the results, including rapid communication of critical results when needed and consultation with health care providers regarding the next steps in patient management to include recommendations for any needed additional or follow-up imaging or interventional radiology procedures that may benefit patient care [3].

The timely interpretation of ED imaging examinations by qualified radiologists facilitates decisions regarding patient diagnosis, treatment, and the potential need for hospital admission. Radiologists should be available, either onsite or remotely via teleradiology [4], to provide timely interpretation of imaging examinations performed on ED patients. These interpretations are then promptly made available to the ED health care providers so they may be integrated into patient care decisions. Communication of the interpretation should be in accordance with the ACR Practice Parameter for Communication of Diagnostic Imaging Findings [5].

II. QUALIFICATIONS AND RESPONSIBILITIES OF PERSONNEL

The radiologist should meet the qualifications stated in the ACR practice parameter or technical standard for the particular procedure or examination being performed or interpreted.

III. RECOMMENDED COVERAGE

A. A qualified radiologist should be available to interpret imaging studies in accordance with criteria determined by collaboration between the radiology department, the ED, and the medical staff of the hospital, depending on resources available.
   1. The qualified radiologist may be on-site and may include supervised radiology residents with demonstrated competence, consistent with department and institution policy of the American College of Graduate Medical Education resident supervision recommendations [6].
   2. The qualified radiologist may be off-site and provide interpretation remotely, with an appropriate teleradiology link (see the ACR–AAPM–SIIM Technical Standard for Electronic Practice of Medical Imaging [7]). Such teleradiologist may provide either a preliminary interpretive report, which is later finalized by the local radiologist, or may provide a final interpretation as allowed by the hospital bylaws.

B. Administration of intravascular contrast media for emergency contrast-enhanced imaging studies should be supervised by a qualified radiologist or their physician designee in accordance with the ACR–SPR Practice Parameter for the Use of Intravascular Contrast Media [8] and the ACR Manual on Contrast Media [9].

IV. EXAMINATION ACQUISITION AND INTERPRETATION

A. Most ED patients will be evaluated through the well-established and monitored internal pathways of the ED facility and its parent institution.

   1. Examinations should be acquired following the guidance of the ACR Practice Parameters specific to

each modality.

2. Examination interpretations may be in the form of final reports or preliminary reports and should be in accordance with the ACR Practice Parameter for Communication of Diagnostic Imaging Findings [5].
    a. Final Interpretive Report: In order to provide final interpretive reports, the radiologist should have access to pertinent prior imaging, reports, and the patient's medical record when possible.
    b. Preliminary Interpretive Report: Preliminary interpretive reports may be issued when creation of a final report would unnecessarily delay care of an emergency patient.

B. Specific guidelines for interpretation timeliness.
    1. In accordance with American College of Surgeons Committee on Trauma guidelines [10], a radiologist covering Level I and/or II trauma centers must have access to patient images and be available for imaging interpretation, in person or by phone, within 30 minutes of request.
    2. Centers for Medicare and Medicaid Services measures the percentage of patients with acute ischemic or hemorrhage stroke patients that have either a head computed tomography (CT) or magnetic resonance imaging (MRI) scan interpreted within 45 minutes after arrival to the ED [11].

C. Some ED patients may present with relevant, recently obtained imaging examinations performed at an outside facility or institution. These may be transferred on physical digital storage media or between centers over the internet [12-15].

    1. If the examination is technically adequate to address the clinical scenario, repetition of the study should be avoided. Processes should be developed to acquire, store, integrate, and retrieve these examinations, making them available for real-time review in order to avoid unnecessary examination duplication with its associated costs and radiation exposure to the patient.
    2. To facilitate continuity of patient care between institutions, official reports should be packaged with imaging examinations when possible.

V. ELECTRONIC DATA DISPLAY

Each institution should be prepared to re-examine its policies and procedures in light of rapidly changing local technological and institutional capabilities.

Imaging departments should apply continuous improvement standards in the use and application of electronic imaging technologies. Obtaining, storing, reporting, and transmitting images by electronic means are performed in accordance with the ACR–AAPM–SIIM Technical Standard for Electronic Practice of Medical Imaging [7].

VI. QUALITY IMPROVEMENT MECHANISM

All physicians providing interpretation of ED imaging examinations are subject to quality of care oversight and review. For ED imaging, this applies to all reports generated, whether on-site or off-site, preliminary or otherwise. Errors in interpretation or reporting must be documented and corrected in accordance with department and institutional policies.

ACKNOWLEDGEMENTS

This practice parameter was revised according to the process described under the heading *The Process for Developing ACR Practice Parameters and Technical Standards* on the ACR website (https://www.acr.org/Clinical-Resources/Practice-Parameters-and-Technical-Standards) by the Committee on Practice Parameters—General, Small, Emergency and/or Rural Practice of the ACR Commission on General, Small, Emergency and/or Rural Practice.

Writing Committee – members represent their societies in the initial and final revision of this practice parameter

Justin P. Dodge, MD, Chair

Suzanne T. Chong, MD

Rachel Gerson, MD

Robin D. Hines, MD

Robin B. Levenson, MD

O. Clark West, MD, FACR

Committee on Practice Parameters – General, Small, Emergency and/or Rural Practices (GSER)

(ACR Committee responsible for sponsoring the draft through the process)

Candice A. Johnstone, MD, FACR, Chair

Justin P. Dodge, MD

Brian D. Gale, MD, MBA, FACR

Rachel Gerson, MD ,

Mallikarjunarao Kasam, PhD

Nathan J. Rohling, DO

Samir S. Shah, MD, MMM, FACR

Derrick Siebert, MD

Michael Straza, MD, PhD

Mark D. Alson, MD, FACR, Chair, Commission on General, Small, Emergency and/or Rural Practice

David B. Larson, MD, MBA, FACR Chair, Commission on Quality and Safety

Mary S. Newell, MD, FACR, Chair, Committee on Practice Parameters and Technical Standards

Comments Reconciliation Committee

Melissa L. Chen, MD, Chair

Ivan M. DeQuesada, II, MD, Co-Chair

Mark J. Adams, MD, MBA, FACR

Mark D. Alson, MD, FACR

Suzanne T. Chong, MD

Robin D. Hines, MD

Candice A. Johnstone, MD, FACR

Amy L. Kotsenas, MD, FACR

David B. Larson, MD, MBA, FACR

Robin B. Levenson, MD

Comments Reconciliation Committee

Timothy A. Crummy, MD, MHA, FACR

Mary S. Newell, MD, FACR

Justin P. Dodge, MD

O. Clark West, MD, FACR

Rachel Gerson, MD

Paula Yeghiayan, MD

Atul Kumar Gupta, MD, FACR

REFERENCES

1. Benger JR, Lyburn ID. What is the effect of reporting all emergency department radiographs? Emergency medicine journal : EMJ 2003;20:40-3.
2. Brunswick JE, Ilkhanipour K, Seaberg DC, McGill L. Radiographic interpretation in the emergency department. The American journal of emergency medicine 1996;14:346-8.
3. Berlin L. Standards for radiology interpretation and reporting in the emergency setting. Pediatric radiology 2008;38 Suppl 4:S639-44.
4. Kalyanpur A. The role of teleradiology in emergency radiology provision. Radiol Manage 2014;36:46-9.
5. American College of Radiology. ACR practice parameter for communication of diagnostic imaging findings. Available at: https://www.acr.org/-/media/ACR/Files/Practice-Parameters/CommunicationDiag.pdf. Accessed February 4, 2022.
6. Accreditation Council for Graduate Medical Education. Program requirements for graduate medical education in diagnostic radiology. Available at: https://www.acgme.org/globalassets/pfassets/programrequirements/420_diagnosticradiology_2022.pdf. Accessed April 20, 2022.
7. American College of Radiology. ACR–AAPM–SIIM technical standard for electronic practice of medical imaging. Available at: https://www.acr.org/-/media/ACR/Files/Practice-Parameters/Elec-Practice-MedImag.pdf. Accessed February 4, 2022.
8. American College of Radiology. ACR–SPR practice parameter for the use of intravascular contrast media. Available at: https://www.acr.org/-/media/ACR/Files/Practice-Parameters/IVCM.pdf. Accessed February 4, 2022.
9. American College of Radiology. ACR manual on contrast media. Available at: https://www.acr.org/-/media/ACR/Files/Clinical-Resources/Contrast_Media.pdf. Accessed August 17, 2022.
10. American College of Surgeons. *Resources for Optimal Care of the Injured Patient* 2022.
11. Centers for Medicare & Medicaid Services. Head CT or MRI scan results for acute ischemic stroke or hemorrhagic stroke who received head CT or MRI scan interpretation within 45 minutes of ED arrival. Available at: https://cmit.cms.gov/cmit/#/MeasureView?variantId=684&sectionNumber=1 Accessed April 20, 2022.
12. Flanagan PT, Relyea-Chew A, Gross JA, Gunn ML. Using the Internet for image transfer in a regional trauma network: effect on CT repeat rate, cost, and radiation exposure. Journal of the American College of Radiology : JACR 2012;9:648-56.
13. McNeeley MF, Gunn ML, Robinson JD. Transfer patient imaging: current status, review of the literature, and the Harborview experience. Journal of the American College of Radiology : JACR 2013;10:361-7.
14. Sodickson A, Opraseuth J, Ledbetter S. Outside imaging in emergency department transfer patients: CD import reduces rates of subsequent imaging utilization. Radiology 2011;260:408-13.
15. Sung JC, Sodickson A, Ledbetter S. Outside CT imaging among emergency department transfer patients. Journal of the American College of Radiology : JACR 2009;6:626-32.

*Practice parameters and technical standards are published annually with an effective date of October 1 in the year in which amended, revised, or approved by the ACR Council. For practice parameters and technical standards

published before 1999, the effective date was January 1 following the year in which the practice parameter or technical standard was amended, revised, or approved by the ACR Council.

Development Chronology for this Practice Parameter

2000 (Resolution 32)

Revised 2003 (Resolution 6)

Amended 2006 (Resolution 36)

Amended 2007 (Resolution 13)

Revised 2008 (Resolution 34)

Revised 2013 (Resolution 24)

Amended 2014 (Resolution 39)

Revised 2018 (Resolution 37)

Revised 2023 (Resolution 30)