

Inclusion of Pediatric-Specific Indications and Procedures in the New ACR MRI Accreditation Program

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Abstract

MRI equipment with its complex instrumentation and adaptable software applications is vulnerable to technical and image quality problems, and maintaining quality assurance is essential. Accreditation of MRI centers by the ACR has become a routine practice for radiology departments and imaging centers across the country. In its prior format, the ACR MRI Accreditation Program had examination anatomic modules designed primarily to measure quality and validate MR performance primarily in adult imaging practices. In an effort to more closely meet the specific imaging requirements of pediatric patients, an ad hoc MR accreditation committee was created under the ACR Commission on Pediatric Imaging. The committee, consisting of ACR members from five children's hospitals, was tasked with creating suggested revisions to the anatomic modules and helping develop pediatric-specific studies that could be adopted into the ACR MRI Accreditation Program. Updated ACR MRI accreditation anatomic modules incorporating the ad hoc committee's recommendations were released by ACR in May 2017. This article highlights the recommendations made by the ad hoc committee. The revised modules should allow pediatric imaging centers to achieve ACR MRI accreditation for all anatomic modules and will underscore best imaging practices for patients of all ages.

Key Words: American College of Radiology, ACR, accreditation, pediatric, MRI

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BACKGROUND

For the past decade, imaging providers have been required to obtain and maintain accreditation to receive federal insurance reimbursements [1]. Accreditation is also being enforced by several private insurance providers. CMS has approved four national

accreditation organizations—the ACR, the Intersocietal Accreditation Commission, The Joint Commission, and RadSite—to provide accreditation services for those who are responsible for the technical portion of advanced diagnostic imaging examinations [2]. Accreditation is a method of ensuring acquisition technique standardization, reliability, clarity, and accuracy of the diagnostic images acquired [3-5]. The accreditation process allows facilities to validate and maintain the quality of the imaging service offered to their patients. The imaging guidelines provided as part of the accreditation process are designed to assist practitioners in delivering the most appropriate and high-quality radiologic care for their patients.

ACR MRI Accreditation Program evaluates the qualifications of MRI personnel, the quality control program, safety policies, and MR image quality, including a peer-reviewed assessment of clinical and phantom images as well as continuous practice improvement [4]. To qualify for ACR MRI facility accreditation, each MR unit must

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achieve a designated measure of quality and performance for the examination types routinely performed on that unit. There are six anatomic modules (ie, head, spine, body, musculoskeletal [MSK], cardiac, and MR angiography [MRA]) that can be submitted for accreditation on each MRI unit. An MRI unit can be accredited for one or more of these anatomic modules. The details for each of the allowed study types within each module are enumerated in the section “Accreditation Testing Section of the ACR MR Accreditation Program Requirements” found on the ACR website (<https://www.acraccr.com/modalities/mri>). A site has the option to select the number of anatomic modules being applied for accreditation, on the basis of the type of scans performed on that MRI unit. Imprudent selection of accredited anatomic modules may create difficulty for MRI departmental workflow. The ACR allows only 10 studies per month or 50 studies per year for unaccredited module scanning. Choosing all six anatomic modules allows a wide range of MR examinations to be performed on the accredited MRI unit.

Most tertiary care academic children’s hospitals with MRI scanners follow the ACR guidelines and accreditation process [4]. Nevertheless, because the specialty examinations within each module of prior ACR MRI accreditation guidelines before May 2017 were largely reflective of adult imaging practices, dedicated pediatric imaging facilities faced challenges fulfilling the requirements for MRI accreditation. Previously, Serai et al [3] reviewed the ACR MR accreditation process and the challenges pediatric centers faced to achieve accreditation. That review highlighted the need to revise the ACR MRI accreditation module requirements so that they would reflect the best practice for pediatric patients, and facilities that image only children could fulfill those requirements. Upon request from the pediatric imaging community, an ad hoc MR accreditation committee under the ACR Commission on Pediatric Imaging consisting of ACR members from five children’s hospitals (Cincinnati Children’s Hospital Medical Center, The Children’s Hospital of Philadelphia, Ann & Robert H. Lurie Children’s Hospital of Chicago, Texas Children’s Hospital, and Children’s Hospital of Pittsburgh) was formed in the fall of 2013 and tasked to recommend modifications to the required ACR MRI accreditation anatomic modules that would exemplify best practices in pediatric imaging and allow dedicated pediatric imaging centers to fulfill the requirements of all anatomic modules.

In this article, we review the ad hoc committee’s recommended changes to the MRI clinical modules that have since been adopted by the ACR MRI Accreditation Committee in 2017. We believe that the revised modules are an important step in recognizing that children are not simply small adults and will now allow pediatric imaging centers to achieve ACR MRI accreditation in all MRI anatomic modules.

ACR MRI ACCREDITATION ANATOMIC MODULES

The new ACR updated clinical modules were released in May 2017. The current revised requirements have incorporated the changes suggested by the ad hoc committee. When applying for ACR MRI accreditation, each site chooses the number of anatomic modules to submit for accreditation. Per the ACR guidelines, the number of standard and specialty examinations required for submission is based on the number of modules submitted. Choosing all six anatomic modules allows a wide range of MR examinations to be performed on the accredited MRI unit, which is typical for MRI at most children’s hospitals. In addition to incorporating the recommended changes to the anatomic modules, in the new guidelines, the ACR has removed the requirement for specialty examinations.

Head and Neck Module

The prior head and neck module options were limiting for pediatric centers because of the limited number of patients with demyelinating disease and few centers’ performing dynamic contrast-enhanced pituitary MR (Table 1). To help expand the available studies for pediatric centers, the committee recommended changes to the head and neck module, including adding stroke as an indication for noncontrast brain imaging; adding suspected

Table 1. Head and neck module

Head and Neck Module (Old)	Head and Neck Module (New)
■ Brain for TIA	■ Brain for TIA or stroke
■ IAC (IAC/temporal bone)	■ IAC (IAC/temporal bone)
■ Brain for suspected demyelinating disease*	■ Brain for suspected demyelinating disease, encephalitis, or acute disseminated encephalomyelitis
■ Pituitary with contrast enhancement*	■ Pituitary with contrast enhancement
■ Orbits for vision loss*	■ Orbits for vision loss or tumor

Source: ACR MRI Accreditation Program requirements.

Note: IAC = internal auditory canal; TIA = transient ischemic attack.

*Specialty scans.

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