THE DIGITAL REVOLUTION has influenced the practice of medicine in the 21st Century from the conversion of medical records into a digital format to the practice of medicine via computers and other forms of telecommunications. Patients can now obtain advice from a physician by videoconferencing 24 hours a day. Even intensive care patients are being monitored remotely. This article will address some of the legal issues associated with a very common form of telemedicine known as teleradiology.¹

Teleradiology deals with the exchange of digital images via electronic communication.² It enables health care providers to transmit radiological images, like X-rays, CT scans, and MRIs, from one location to another for diagnostic or consulting purposes.³ The premise is that a radiologist can read images remotely from anywhere in the world as long as there is a phone or internet connection.⁴ This allows small healthcare

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providers which do not employ a radiologist on a 24-hour basis to send their films for immediate interpretation by an imaging specialist at a distant location.\textsuperscript{5}

The rise of the computer facilitated the store-and-forward method,\textsuperscript{6} simplifying operations by eliminating the need for all parties—patients, providers, and other support staff—to be present at both sites simultaneously.\textsuperscript{7} With the advent of digital imaging, teleradiology became possible, but different practices for how these images were stored made displaying them on various machines complicated.\textsuperscript{8} A standard for storing digital images was created in 1993 and widely accepted by image machine manufacturers, creating uniformity among these entities.\textsuperscript{9}

Commercial use of teleradiology systems became available in the 1980s, but their quality, adaptability, and enlargement capabilities to handle a growing amount of work were limited.\textsuperscript{10} Thus, the high costs and low performance hindered their widespread adoption.\textsuperscript{11} The changes in computer technology and performance, medical imaging, and the birth of the Internet, however, created an economical and functional platform for realizing teleradiology on a large scale.\textsuperscript{12}

WHO IS RESPONSIBLE WHEN SOMETHING GOES WRONG WITH TELERADIOLOGY? •

The advantages of teleradiology are obvious, but who is responsible when something goes wrong? The complex and sometimes far removed relationships teleradiology creates can make ascertaining who is liable and how to seek legal redress uncertain. Parties involved at a minimum are the teleradiologist; the employer, which may be a hospital or an independent contractor; the treating physician; and the hospital with whom the teleradiology company or medical practice has contracted.

The Radiologist

Two entities, the American Board of Radiology (ABR) and the American College of Radiology (ACR), have established guidelines for standards of care governing outsourcing of radiologists’ services\textsuperscript{13} Both entities work with state medical boards to ensure high quality medical care and professional integrity in the practice of radiology. The ABR works with the American Board of Medical Specialties to establish board certifications in radiology, offering different certificates in radiology.\textsuperscript{14} The ABR strives, through certification, to improve the quality of medical care, to improve radiological education, and to improve training and standards within radiology.\textsuperscript{15} There are various radiological subspecialties, such as pediatric radiology and neuroradiology, however, diagnostic radiology is the basic certification enabling one to interpret a variety of different images.\textsuperscript{16} In addition to the certification requirements set forth by the ABR, the ACR works to improve the practice of radiology by furnishing ongoing education and overseeing research for the advancement of radiology.\textsuperscript{17} The organization devotes “its resources to making imaging safe, effective and accessible to those who need it.”\textsuperscript{18}
With this background in mind, the ACR first published standards for teleradiology in 1974, which standards have been revised on several occasions. The criteria state that the individual providing the formal interpretations is responsible for the quality of the images. It also notes that a diagnostic radiologist should interpret images only when he or she is involved in the full practice of radiology on a relatively consistent basis, including working to improve quality, regularly reviewing images, and participating in policy matters that affect patient care.

The ACR requires those who interpret images in a state other than the one in which they reside be licensed in both states—the one where the image was produced and the one in which the interpretation takes place. The ACR also supports state legislation that requires out-of-state physicians to obtain and maintain a license to practice teleradiology within a particular jurisdiction.

Though the regulations vary by state, at least thirty-seven states and the District of Columbia have enacted statutes that generally require a full, unrestricted license to practice telemedicine, including teleradiology, within their borders. For example, New Hampshire provides: “Any out-of-state physician…who performs radiological diagnostic evaluations or interpretations for New Hampshire patients by means of teleradiology shall be deemed to be in the practice of medicine and shall be required to be licensed.” Thirteen states and Puerto Rico permit an exception to this requirement if the out-of-state radiologist is consulting with an in-state physician. Minnesota, for example, requires a telemedicine license but not if “the services are provided on an irregular or infrequent basis,” a term which is defined as less than once a month or ten patients annually. Oregon has no statutes regulating telemedicine, however, the Oregon Medical Board provides that a radiologist located outside of Oregon consulting with a physician inside Oregon does not require an Oregon license.

The above requirements and standards proffered by the ABR and ACR as well as individual state licensing requirements seem adequate to ensure that the radiologist reading the image is qualified and has the resources to do so; however, the environment in which one works can make a difference. Prior to the advent of telemedicine, working in a medical facility may have made it relatively easy to stay focused and productive; however, the pitfalls of working from home have the potential to negatively affect a teleradiologist in the same ways it can anyone else. Working from a doctor’s residence may make one more comfortable and thus more prone to become distracted and lose incentive to maintain professionalism. Interruptions and distractions are also common problems that affect telecommunications—two problems that can have disastrous results for a teleradiologist.

The ACR has created extensive guidelines for devices used in the acquisition, digitization, compression