

ACR and ASRT Development of the Radiologist Assistant: Concept, Roles, and Responsibilities

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ACR and ASRT joined forces to address the workforce shortages of radiologists and radiological technologists with the development of a radiologist assistant. This paper discusses the rationale for the evolution and development of the radiologist assistant as designed by ACR and ASRT.

With the profession of radiology experiencing workforce shortages among radiologists and radiological technologists many radiological groups were beginning to hire ancillary personnel to fill efficiency gaps in practices. Many academic institutions were in the process of considering programs to initiate advanced practice status for radiologic technologists. Several state legislatures were considering laws that would provide extended scope of practice technology with additional training. The ACR and ASRT entered into discussions to address these concerns in order to: (1) assure patient safety by allowing only properly trained personnel to provide radiological service to patients; (2) assure that these ancillary personnel are not allowed to practice without appropriate physician supervision; (3) assure that there are not 50 different state scope of practice laws based more on political expediency than quality patient care; (4) alleviate workforce shortages for radiological technologists by creating a professionally satisfying career path; (5) alleviate some of the time pressures placed on radiologists as a result of their workforce shortages. The ACR had a choice to lead on the development of the roles and responsibilities of the radiologist assistant or continue to allow the process to evolve as market and political pressures warranted. As a leader in the profession, the ACR believed that it was in the best interest of its members and the profession to be at the table with the development of the roles and responsibilities of the radiologist assistant to assure the best for our patients. The roles and responsibilities of the RA as approved by the ACR Council are presented.

Key Words: Radiologist assistant, workforce shortages, radiologist shortages, technologist shortages, ACR Council actions

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In 1989 and 1990, the ACR Council considered separate resolutions aimed at encouraging the development of advanced-level radiologic technologists, to be known as radiologist assistants (RAs) [1]. After careful consideration, the council voted to oppose the development of educational programs for RAs [2]. Fast-forward to May 2003. The ACR Council once again carefully considered moving forward with the development of RAs. This time, the council voted nearly unanimously in favor of delineating roles and responsibilities for the new profession [3]. The reversal in the council's thinking on this

issue reflects the culmination of over a year of careful reflection by ACR leaders to weigh multiple political and economic factors that had already begun to shape the radiology profession. This paper examines the antecedent factors that affected the change in the council's position and reflects on the process that brought the leadership of the college to confront this emerging issue.

HUMAN RESOURCES: THE SHORTAGE MOUNTS

Clearly, one of the most significant factors to affect the profession since the beginning of the 1990s has been the development of workforce shortages. Indeed, the current shortage of radiologists is well documented. As far back as 1998, an ACR survey found that there were at least 600 more jobs available than there were radiologists to fill them [4]. Since that time, the situation has grown worse.

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The ACR Professional Bureau noted that the ratio of jobs offered to job seekers increased from 1.3:1 in 1998 to 3.8:1 in 2000 [5]. A 2000 survey of radiologists' workloads found that 51% of radiologists said that they had too much work to do, whereas only 5% noted that they had too little to do [6]. In a recent survey, 63% of hospital administrators identified radiologists as the most difficult physician specialists to recruit. A Dallas-based physician recruitment firm noted that "the demand for them [radiologists] continues to go up but the supply. . . remains static" [7].

Although the number of radiologists has remained relatively flat, the demand for their services has continued to escalate. An internal analysis performed at the ACR for the Task Force on Human Resources showed that although the number of radiologists entering the field is growing by only 2%, radiology procedures are increasing at a rate of 6% per year [8]. Over the next 20 years, it is estimated that age increases in the baby-boom generation will increase the number of hospital visits by 48%. During that same period, the demand for imaging examinations is estimated to rise from 350 million to over 500 million per year [9].

Radiologic technologists are experiencing similar workforce shortages. A survey in the fall of 2001 noted that the vacancy rate for imaging technologists was the highest of any health profession. Indeed, the survey found a 15.3% vacancy rate for imaging technologists, compared with 13% for registered nurses and 12.7% for pharmacists [10]. Although the recent downturn in the economy has resulted in an increase in the number of students entering radiologic technology programs, increasing demand and shifting demographics still lead to projected future shortfalls. The Bureau of Labor Statistics has estimated that between 2000 and 2010, 75,000 additional radiologic technologists will be needed [11]. Meanwhile, the number of people taking the radiologic certification examination offered by the American Registry of Radiologic Technologists (ARRT) declined from 10,529 in 1994 to only 7434 in 2001 [12, p. 4]. Additionally, the average age of technologists has increased to 41—one of the highest among health professionals. Over 17% of the profession is now over the age of 51 [13].

THE MARKETPLACE RESPONDS: TOWARD RAs

The marketplace adapted to such shortages by expanding training programs and redefining the possible roles within radiology departments. Indeed, the concept of an advanced-practice radiologic technologist was not new. In the 1970s, radiology physician assistant programs were initiated at the University of Kentucky, Brown Uni-

versity, and Duke University. Although all of them eventually closed because of a lack of demand, some of their graduates are still in the workforce. In 1996, the Department of Defense asked Weber State University to design a radiology practitioner assistant (RPA) program in an attempt to address a shortage of radiologists in the armed forces. Although the Department of Defense subsequently withdrew support because of budgetary cutbacks, Weber State continued the program, hoping in part that recent human resource shortages in radiology offered potential growth for radiologic technologists who sought extended roles in radiology practice. Roughly 100 RPAs are currently practicing in the field [12, p. 3].

The interest in Weber State's program by radiologic technologists not only reflected their desire to advance in their careers but also highlighted a trend that was beginning to occur throughout the discipline because of workforce shortages in diagnostic radiology. Physician assistants and nurse practitioners were hired to assist in radiologic practices, providing new skill sets for the radiology suite and allowing some practices to become more efficient in the delivery of medical imaging services. However, the hiring of these individuals raised some important questions:

- What were the training and background of these individuals? Were they certified to perform radiologic procedures?
- Were those engaged in the performance of radiologic procedures in compliance with state laws and regulations?
- Would these individuals interpret diagnostic tests?

Although physician assistants and nurse practitioners provide important advantages in patient assessment and management in other medical disciplines, their training and educational background do not necessarily translate into the best ancillary personnel for radiology departments.

Some practices were trying to fill the void by increasing the scope of service provided by radiologic technologists. This too raised some questions concerning formal training and education for the procedures being performed as well as some compliance concerns with state laws.

In addition, the ACR was also concerned about RPAs' scope of practice. A 2003 survey of RPA graduates found that some of the common procedures performed by RPAs included gastrointestinal barium studies, fistulograms, genitourinary studies, arthrograms, thoracentesis, paracentesis, ultrasound-guided and computed tomography (CT)-guided biopsies and drainages, peripherally inserted central venous catheter line placement, angiography, venography, Dobhoff tube placement, lumbar punctures, and myelograms [14]. The same study noted

that RPAs were providing preliminary image evaluation reports to supervising radiologists on procedures including reports of the chest, abdomen, pelvis, orthopedics, spine and skull, as well as barium and interventional studies, CT, magnetic resonance imaging, ultrasound, nuclear medicine, vascular and cardiac procedures, and mammograms [14]. It was thought that RPAs, with their radiologic technologist education, training, and experience, offered distinct advantages to radiology practices that physician assistants or nurse practitioners typically do not offer. However, concern was expressed that RPAs' identified scope of practice was too far removed from traditional roles and responsibilities. Additionally, state laws and federal regulations created significant barriers to the more advanced level of services performed by RPAs, as noted in the survey.

In 2001, in response to the passage of a council resolution in 2000, the Task Force on Human Resources was formed to explore ways to ameliorate workforce shortages in radiology [15]. A subcommittee on radiologic technologist workforce shortages chaired by myself met for several months to explore concepts for improving the work situation in the field. After some debate, the task force recommendations included that the ACR participate with the American Society of Radiologic Technologists (ASRT) to "explore the possibility of career ladders for radiologic technologists with the intent of increasing their numbers in the workforce and to explore possible radiologic extenders to increase productivity and efficiency of radiologists" [16].

THE CONSENSUS GROUP MEETS

Given the workforce situation and the continued demand for advanced-trained professionals in the radiology suite, in March 2002, the ACR met with representatives of the ASRT, the ARRT, and the National Society of Radiology Practitioner Assistants to discuss the development of advanced practice radiologic technologists. The panel members also included a representative from state government (from the Arizona Board of Medical Radiologic Technology) and a representative from E-Z-Em, Inc.

In March 2002, the ACR joined the Advanced Practice Advisory Panel and met for 2 days. Two draft documents, *The Radiologist Assistant: Improving Patient Care While Providing Workforce Solutions* [12] (also known as "the consensus paper") and *Radiologist Assistant—Roles and Responsibilities*, were produced.

CONSENSUS PAPER DEVELOPMENT

Each participant was given an opportunity to respond to the draft documents. For the consensus paper, some revisions dealing with the envisioned title and scope of RAs

were forwarded from the ACR to the ASRT. The revised document was then sent to the ACR's Board of Chancellors (BOC) for consideration at its meeting in June 2002. After discussing the consensus document, the BOC agreed to support the concept of RAs as expressed in the consensus paper. The board agreed to pursue this pathway for several reasons. First, providing a pool of well-qualified and well-trained RAs would help radiology practices manage the current shortage of radiologists. Additionally, it was thought that RAs would allow radiologists to more efficiently handle ever increasing patient workloads. Finally, the board agreed with the principles embodied in the document, which included the supervision of RAs by radiologists and a clear distinction that RAs would not interpret images. Although conceptually, the board provided its support, it requested that regular updates be provided to the ACR's Executive Committee on issues involving curriculum and delineation of roles and responsibilities.

Despite the BOC's concurrence with the concepts expressed in the consensus agreement, some concerns were articulated. For instance, it was noted that the performance of certain radiologic examinations by RAs might prompt a reevaluation of the relative value units that partially reflect the time it takes physicians to perform the service. Staff members were also asked to look into what changes might be needed to make procedures provided by RAs consistent with the many policies and standards of the college.

ENVIRONMENTAL CHANGES

In the months following the first meeting in March 2002, the states of Kentucky, Washington, and Montana began to consider the recognition of advanced-practice radiologic technologists with an expanded scope of practice. The ACR worked with the Kentucky chapter to postpone specific legislation establishing RPAs in the spring and summer of 2002. Although no new laws had been passed by the summer and fall of 2002, increased legislative and regulatory activity by the states put a new emphasis on the need to provide guidance and take a leadership role on this issue. It seemed increasingly clear that the marketplace and the states were now poised to address the workforce shortage on their own.

The ACR sent out an *ACR E-News* to its members on September 23, 2002, alerting them to recent legislative and regulatory activity on the subject and discussing the ACR's work on a solution to come before the ACR Council in May 2003 [17]. The *ACR E-News* piece also requested feedback from members on the use of ancillary personnel to assist radiologists. The ACR received 39 responses from members. Fifteen of the responses were negative. Most of those comments focused on the scope

of practice, with some expressing the concern that RAs would become the nurse anesthetists of the radiology community. Twenty-four responses were quite favorable, with most correspondents stating that they already employed individuals beyond radiologic technologists at their offices to perform a broad array of radiology procedures.

During this same period, the ASRT reported that several academic institutions had initiated the development of university-based academic programs that encompassed advanced clinical roles for radiologic technologists [18]. The ASRT entered into discussions with these programs to make them consistent with the RA concept [18].

The ACR became increasingly concerned about the effects of not acting. With various programs already allowing ancillary personnel to perform a wide variety of services, a lack of participation would affect the ability to (1) ensure patient safety by allowing only properly trained personnel to provide radiologic services to patients; (2) ensure that these ancillary personnel would not be allowed to practice without appropriate physician supervision; and (3) ensure that there would not be 50 different state scope-of-practice laws for ancillary personnel authorizing the performance of a wide array of services, the outcome of which could be based on political expediency rather than quality patient care.

ROLES-AND-RESPONSIBILITIES DOCUMENT

From the consensus agreement, a draft roles-and-responsibilities document was transmitted to the group for further input. This document took the conceptual framework of the consensus document and identified the types of roles and responsibilities envisioned for RAs. The roles-and-responsibilities document was more problematic than the consensus document. The original document included 16 procedures that could be performed by RAs (all of which currently require personal supervision by a physician in the room under Medicare) [19]. An ACR subcommittee was appointed to review the roles-and-responsibilities document and develop an alternative that would balance the human resources needs with patient care. The subcommittee made significant amendments to the ASRT roles-and-responsibilities document but retained a role for RAs to perform fluoroscopy for noninvasive procedures, among other duties envisioned for RAs.

NEGOTIATIONS WITH ASRT

On October 22, 2002, ACR and ASRT leaders met to discuss the roles-and-responsibilities document and the ACR's alternative. After significant discussions, the ASRT agreed to the ACR's document (see the Appen-

dix), with some minor changes [20]. The document became the basis for a resolution considered by the ACR Council in May 2003.

ISSUES REMAIN: MUCH WORK TO BE DONE

The council's action defining, through a joint statement with the ASRT, the roles and responsibilities of RAs did not end the ACR's involvement with this issue. In many ways, it has just begun. In April 2003, the Montana legislature passed the first RA law in over 30 years [21]. The law establishes that the scope of practice of RAs must be consistent with guidelines established by the ACR, ASRT, and ARRT [21]. The ACR will be working over the coming months with the ASRT to develop model state regulations for RAs. ACR Practice Guidelines and Technical Standards still need to be modified to reflect the role of RAs in the quality and delivery of radiologic care. Reimbursement and supervision issues must also be resolved with the Centers for Medicare & Medicaid Services to allow for consistency between the roles and responsibilities outlined and the way services are currently reimbursed by Medicare.

Loma Linda University began the first RA program in the fall of 2003 [18]. Twelve other institutions have noted their intent to begin RA programs in the fall of 2004 [18]. The ACR has worked with the ASRT to develop model curriculum for these programs. Three members of the ACR are now serving on an ARRT exam committee for RAs. Their input will be critical in ensuring that the RA certification examination appropriately reflects the scope of practice embodied in the roles and responsibilities of RAs. Another issue to be considered by the ARRT includes the proper credentials necessary for taking the certification examination.

The ACR's Commission on Human Resources will continue to monitor workforce shortages for radiologists and RAs over time to determine what effect RAs have on the recruitment of radiologic technologists into the field.

SUMMARY

The ACR believes that the development of RAs should help alleviate the workforce shortages for radiologic technologists by creating a professionally satisfying career path. The ACR accepts that RAs, as envisioned, will alleviate some of the time pressures placed on radiologists as a result of their workforce shortages. The ACR also trusts that working with the ASRT and the ARRT will increase the chances for successful scope-of-practice delineation at the state legislative and regulatory levels.

RAs will undoubtedly change the way radiology is currently being practiced. However, environmental forces are already changing the way radiology is being

practiced. The ACR had a choice to lead on the issue and try to effect a positive outcome from the beginning or continue to allow the process to evolve as market and political pressures warranted. As a leader in the profession, the ACR believed that it was in the best interest of its members and the profession to develop reasoned solutions to the workforce shortage while doing the best it can to ensure the best for radiology patients. I believe that this approach strikes that important balance.

The professions of radiology and radiologic technology are over 100 years old, yet they continue to evolve and progress. Every decade has brought about improvements in safety, technology, and the delivery of quality patient care. Today, as radiology strives to meet the challenges brought on by increasing patient demand and growing workforce shortages, the introduction of RAs into the health care system represents an innovative, cost-effective way to meet patient demands while improving the quality, efficiency, and productivity of radiologic care.

Much has transpired between 1990 and today. The purpose, scope, and function of the ACR Council did not change. Rather, workforce shortages leading to market and political responses led the council to decide to take an affirmative stance. The leadership necessary to guide the RA issue to an appropriate conclusion clearly rests with the college and other interested radiology organizations. It is critically important that as the issue continues to evolve, the changing workforce environment balance be balanced with the need to do what is best for the patients radiologists serve. The ACR stands committed to making sure that such a balance is maintained.

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APPENDIX

ACR-ASRT Joint Policy Statement Radiologist Assistant: Roles and Responsibilities

A radiologist assistant is an advanced-level radiologic technologist who works under the supervision of a radiologist to enhance patient care by assisting the radiologist in the diagnostic imaging environment. The radiologist assistant is an ARRT-certified radiographer who has successfully completed an advanced academic program* encompassing a nationally recognized radiologist assistant curriculum and a radiologist-directed clinical preceptorship. Under radiologist supervision, the radiologist assistant performs patient assessment, patient management and selected exams (as outlined below).

- Obtaining consent for and injecting agents that facilitate and/or enable diagnostic imaging
- Obtaining clinical history from patient or medical record
- Performing preprocedure and postprocedure evaluation of patients undergoing invasive procedures
- Assisting radiologists with invasive procedures
- Performing fluoroscopy for noninvasive procedures with the radiologist providing direct[†] supervision of the service

- Monitoring and tailoring selected exams under direct[†] supervision (e.g. IVU, CT urogram, GI studies, VCUG, and retrograde urethrograms)
- Communicating the reports of radiologist's findings to the referring physician or an appropriate representative with appropriate documentation
- Providing naso-enteric and oro-enteric feeding tube placement in uncomplicated patients
- Performing selected peripheral venous diagnostic procedures

The radiologist assistant will not perform interpretations (preliminary, final or otherwise) of any radiological examination, nor will he or she transmit observations other than to the supervising radiologist. The radiologist

*"Advanced academic program" means a baccalaureate or postbaccalaureate program.

[†]The Centers for Medicare & Medicaid Services direct supervision requirement states that the "physician is required on site and immediately available."

assistant may make initial observations of diagnostic images and forward them to the supervising radiologist.

The education of the radiologist assistant should be granted through nationally recognized academic programs that lead to certification through the ARRT. Advisory committees to such programs should include representation of radiologists.

The radiologist assistant should actively participate in a facility quality assurance program.

Any formal national or state certification or credentialing of radiologist assistant competency should include the representation of radiologists. Any facility radiologist assistant credentialing process should involve radiologists.

The ASRT and ACR believe that the advent of the radiologist assistant, with defined responsibilities as described herein, will enhance the performance of radiological procedures and patient care and also provide a professionally satisfying career pathway for radiologic technologists.