

Sunrise Report

**West Virginia Radiologic
Technology Board of Examiners**

The Lack of Regulation of Nuclear Medicine Technologists, Magnetic Resonance Imaging Technologists, and Radiologist Assistants Poses a Discernable Risk to the Public. The Lack of Regulation of Sonographers Does Not Pose a Discernable Risk to the Public

Licensure Is the Best Way to Regulate Nuclear Medicine Technologists, MRI Technologists, and Radiologist Assistants



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Executive Summary

Finding 1: The Lack of Regulation of Nuclear Medicine Technologists, Magnetic Resonance Imaging Technologists, and Radiologist Assistants Poses a Discernable Risk to the Public. The Lack of Regulation of Sonographers Does Not Pose a Discernable Risk to the Public.

Sonography machines pose little to no physical risk to patients, even in the case of fetal sonograms.

The West Virginia Radiologic Technology Board of Examiners (the Board) submitted a Sunrise application requesting authority to license ultrasound technologists (sonographers), nuclear medicine technologists, magnetic resonance imaging (MRI) technologists, radiologist assistants (RAs) and radiology practitioner assistants (RPAs). The Legislative Auditor considered potential harm to the public in order to determine the need for regulation of those professions.

Nuclear medicine technologists expose patients to ionizing radiation by administering radiopharmaceuticals orally and intravenously.

Sonography machines pose little to no physical risk to patients, even in the case of fetal sonograms. Sonograms cannot be performed without physician prescription, and ultimate responsibility over image quality belongs to physicians. The unregulated practice of sonography does not pose a discernable risk to the public. Therefore, sonographers should not be regulated in West Virginia.

Nuclear medicine technologists expose patients to ionizing radiation by administering radiopharmaceuticals orally and intravenously. Because of the risks associated with radiation exposure, significant risk of harm is being posed upon the public by the unregulated profession. Nuclear medicine technologists should be regulated in West Virginia.

Magnetic resonance imaging (MRI) does not expose patients to radiation, but it does pose several risks to patients.

Magnetic resonance imaging (MRI) does not expose patients to radiation, but it does pose several risks to patients. The magnetic field produced by MRI can cause metal objects in the surrounding area to become dangerous projectiles. The magnetic field can also cause certain metal implants to move within a patient's body, resulting in soft tissue tears. Additionally, the magnetic field can interfere with certain electronic implants, such as pacemakers, and can cause them to cease functioning properly. Furthermore, the magnetic field created by MRI produces heat in certain metal objects that can result in burns both externally and internally. There is significant risk involved with MRI, and MRI technologists should be regulated to ensure that they conduct proper safety screenings and follow proper machine operating procedures.

The profession of RAs and RPAs is fairly new, and a defined role is not clearly set for the profession. RAs and RPAs are meant to serve as physician extenders to radiologists (medical doctors who specialize in radiology and medical imaging) by alleviating some of the duties of radiologists, freeing up their time, and allowing them to treat more patients. Some national certifying organizations have suggested that RAs and RPAs could be allowed to perform a variety of invasive procedures

RAs and RPAs may be permitted by some to perform procedures that are suitably performed only by a radiologist or other type of physician. Thus, radiologist assistants and radiology practitioner assistants should be regulated in West Virginia.

ranging from lumbar punctures to venous catheter placement for dialysis to feeding tube placement, and that RAs and RPAs could be allowed to administer conscious sedation, radiopharmaceuticals, and contrast agents. Some of those procedures could reasonably be considered the practice of medicine, and appropriate regulation of the profession is needed. Because of the lack of clear regulation and the newness of the profession, many are confused about the duties of the profession. RAs and RPAs may be permitted by some to perform procedures that are suitably performed only by a radiologist or other type of physician. Thus, radiologist assistants and radiology practitioner assistants should be regulated in West Virginia. Additionally, to avoid confusion, RAs and RPAs should be referred to by one title. The Legislative Auditor determines that the title, radiologist assistant, should be used to describe both radiology practitioner assistants and radiology assistants.

Finding 2: Licensure Is the Best Way to Regulate Nuclear Medicine Technologists, MRI Technologists, and Radiologist Assistants.

Licensure will provide title protection and restrict unqualified individuals from practicing each profession, and should be the method used to regulate the professions.

The procedures performed by nuclear medicine technologists, MRI technologists, and RAs pose a discernable risk to the public, and require training and expertise in order for safety to be ensured. Title protection is important in this instance, but for the purpose of protecting the public, it is also important to restrict the practice of each of the occupations to individuals who have proven training and qualifications. Licensure will provide title protection and restrict unqualified individuals from practicing each profession, and should be the method used to regulate the professions.

Additionally, the Board proposes that the regulation of medical imaging should be written into its existing mandate.

The Board is financially self-sufficient, and is capable of being, and should be the entity that licenses nuclear medicine technologists and MRI technologists. In order to reflect the new types of licensees, the Board proposes that its name be changed to the West Virginia Medical Imaging and Radiation Therapy Board of Examiners. Additionally, the Board proposes that the regulation of medical imaging should be written into its existing mandate, since MRI does not involve radiation. The Legislative Auditor supports that proposed name and mandate change.

Because the profession of RAs and RPAs involves some procedures that may qualify as the practice of medicine, it may be appropriate for the West Virginia Board of Medicine to regulate the profession, instead of the West Virginia Radiologic Technology Board of Examiners. If adequate restrictions are created and imposed upon RAs and RPAs, then public safety could be ensured through regulation by either board. Currently the two boards are working cooperatively to achieve the best regulatory solution.

The Board proposed a grandfather clause for members of the professions that become licensed. A grandfather clause is one that allows an exception to people or situations that existed before a law was created.

In this instance, the Board proposes to license people who have been practicing nuclear medicine technology or magnetic resonance imaging for three of the last five years without requiring them to ever meet new licensure requirements. More than experience is needed to ensure patient safety. The Legislative Auditor determines that licensing currently practicing individuals without requiring a test of competency and knowledge would defeat the purpose of creating a new type of licensure by possibly allowing unqualified individuals to continue to practice in the state. However, the Legislative Auditor also recognizes that individuals currently practicing nuclear medicine technology or MRI technology should be given adequate opportunity to meet the new requirements before being required to do so. Otherwise, qualified individuals could unnecessarily become unemployed because of new licensure requirements. Currently practicing nuclear medicine technologists and magnetic resonance imaging technologists in West Virginia should be given a time-sensitive conditional license in order to give established individuals the opportunity to obtain required education and certification status. No exceptions are needed for RAs or RPAs because there are not any currently practicing in West Virginia.

Currently practicing nuclear medicine technologists and magnetic resonance imaging technologists in West Virginia should be given a time-sensitive conditional license in order to give established individuals the opportunity to obtain required education and certification status.

Recommendations

1. *The Legislative Auditor recommends that nuclear medicine technologists should be regulated in West Virginia.*
2. *The Legislative Auditor recommends that magnetic resonance imaging technologists should be regulated in West Virginia.*
3. *The Legislative Auditor recommends that radiologist assistants and radiology practitioner assistants should be regulated in West Virginia.*
4. *The Legislative Auditor recommends that sonographers should not be regulated in West Virginia.*
5. *The Legislative Auditor recommends that nuclear medicine technologists, magnetic resonance imaging technologists, radiologist assistants and radiology practitioner assistants should be regulated through licensure.*
6. *The Legislative Auditor recommends that currently practicing nuclear medicine technologists and magnetic resonance imaging technologists in West Virginia be given a time-sensitive conditional license in order to give established individuals the opportunity to obtain required education and certification status.*

7. *The Legislative Auditor recommends that the West Virginia Radiologic Technology Board of Examiners' name and mandate be amended in code if the Legislature chooses to allow the Board to license MRI technologists.*

8. *The Legislative Auditor recommends that the West Virginia Radiologic Technology Board of Examiners and the West Virginia Board of Medicine should continue to work together to determine exactly how and by whom radiologist assistants and radiology practitioner assistants will be regulated, and that the two Boards should reapproach the Legislature if a consensus cannot be reached.*

9. *The Legislative Auditor recommends that all radiologist assistants and radiology practitioner assistants who obtain corresponding state licensure should be referred to as radiologist assistants.*

10. *The Legislative Auditor recommends that a clear scope of practice should be developed for radiologist assistants and included in West Virginia law.*

Finding 1:

The Lack of Regulation of Nuclear Medicine Technologists, Magnetic Resonance Imaging Technologists, and Radiologist Assistants Poses a Discernable Risk to the Public. The Lack of Regulation of Sonographers Does Not Pose a Discernable Risk to the Public.

In accordance with WVC §30-1A-3, the West Virginia Radiologic Technology Board of Examiners (the Board) submitted a Sunrise application to license additional medical imaging and radiologic professions. The Board currently licenses radiologic technologists (RTs) and gives permits to podiatric medical assistants. However, the Board is requesting authority to also license nuclear medicine technologists, ultrasound technologists (sonographers), magnetic resonance imaging (MRI) technologists, radiologist assistants (RAs) and radiology practitioner assistants (RPAs).

The cameras used by nuclear medicine technologists do not produce ionizing radiation; however, nuclear medicine procedures pose a discernable risk because the radiopharmaceuticals used during such procedures expose patients to ionizing radiation.

Nuclear Medicine Technologists Pose a Significant Risk to the Public.

According to the U.S. Department of Labor, nuclear medicine technologists administer radiopharmaceuticals to patients orally or intravenously and then monitor the characteristics and functions of tissues or organs in which the drugs localize. Nuclear medicine technologists operate cameras that detect and map radioactive drugs in a patient's body to create diagnostic images. When preparing radiopharmaceuticals, technologists adhere to safety standards that keep the radiation dose to workers and patients as low as possible. Nuclear medicine technologists keep patient records and record the amount and type of radiopharmaceuticals that they receive, use, and discard.

The cameras used by nuclear medicine technologists do not produce ionizing radiation; however, nuclear medicine procedures pose a discernable risk because the radiopharmaceuticals used during such procedures expose patients to ionizing radiation. Any person, other than those exempted by law, who operates an x-ray machine in West Virginia must be licensed through the Board as an RT; however, nuclear medicine technologists, who often expose patients to more radiation than RTs (see Table 1) through the administering of radiopharmaceuticals, are not currently regulated in the state.

Ionizing radiation exposure in high and, or repeated doses can cause cancer, hereditary effects, tissue damage, and burns.

MRI poses two primary risks to patients: magnetization and heat. Magnetization poses several problems. Magnetizable objects introduced into an MRI machine's magnetic field can become dangerous projectiles.

Table 1 Comparison of Radiation Exposure Received During Nuclear Medicine Procedures and Chest X-rays*		
Nuclear Medicine Procedure	Single Procedure Dose (mSv)**	Equivalent Number of Chest X-rays
Bone Imaging	3.6	180
Cerebral Perfusion	4.5	225
Lung Perfusion	1.0	50
Myocardial Perfusion	5.0	250
Thyroid Imaging	1.0	50
Hepatobiliary	2.3	115
Liver Sulphur Colloid	0.7	35
Gastric Emptying	0.3	15

* Source: "Living With Risk" published by the British Medical Association, 1987.
 ** mSv stands for millisievert, which is a measure of radiation dose.

Ionizing radiation exposure in high and, or repeated doses can cause cancer, hereditary effects, tissue damage, and burns. According to the U.S. Food and Drug Administration (FDA), "*ionizing radiation is a weak carcinogen . . . [and] properly conducted medical radiation exams are always more beneficial than the underlying individual risk.*" Nuclear medicine can be beneficial and is needed, but it is important that any such use of radiation be done properly by a trained individual to ensure that radiation exposure is kept to a minimum.

Because nuclear medicine technologists expose patients to ionizing radiation by administering radiopharmaceuticals, there is a significant risk of harm to the public. **The Legislative Auditor recommends that nuclear medicine technologists should be regulated in West Virginia.**

Magnetic Resonance Imaging Technologists Pose a Significant Risk to the Public.

Magnetic resonance imaging (MRI) uses giant magnets that create radio waves, rather than radiation to form an image. According to the American Registry of Radiologic Technologists (ARRT), MRI technologists evaluate medical records, document patients' medical procedures and histories, operate MRI machines, and conduct MRI safety screenings.

MRI does not expose the patient to ionizing radiation; however, MRI carries risks not related to radiation. MRI poses two primary risks to patients: magnetization and heat. Magnetization poses several problems. Magnetizable objects introduced into an MRI machine's magnetic

field can become dangerous projectiles. For example, a case documented by the FDA involved a nurse walking into an MRI room with scissors in hand. The scissors were magnetized, became a projectile, and cut a patient on the head. In 2001, in New York, a six year-old boy was killed during an MRI scan when an oxygen tank became a projectile while he was in the MRI chamber. The tank delivered a fatal injury to his head.

Devices can be pulled and moved by the magnetic field created by MRI, resulting in tears to soft tissue.

Additionally, magnetization can pose a problem for patients with metal implanted in their body. Devices can be pulled and moved by the magnetic field created by MRI, resulting in tears to soft tissue. Such damage to soft tissue can be especially dangerous when involving implants such as aneurysm clips in the brain or ocular implants in the eye. Furthermore, any type of electrically, magnetically, or mechanically activated implant (such as pacemakers, neurostimulators, infusion pumps, etc.) can be contradicted by the magnetic field produced by an MRI. There are documented cases of death caused by the interruption of a pacemaker during an MRI procedure.

MRI produces energy fields that can heat certain metal materials, and burn patients who have certain metal implants or patients who are in contact with or are wearing metal during a scan.

Another risk of MRI is heat. MRI produces energy fields that can heat certain metal materials, and burn patients who have certain metal implants or patients who are in contact with or are wearing metal during a scan. For example, patients wearing certain dermal medication patches that have metal components can suffer second degree burns if the patch is worn during an MRI scan. Burns caused by metal implants inside the body can have serious consequences. Proper screening and safety precautions are critical to preventing burns during MRI.

Due to the risks involved with magnetism, the heating potential of energy fields produced by MRI, and the importance of MRI technologists' use of proper screening and safety precautions to prevent patient harm, **the Legislative Auditor recommends that MRI technologists should be regulated in West Virginia.**

Radiologist Assistants and Radiology Practitioner Assistants Pose a Significant Risk to the Public.

A statement developed by the American College of Radiology (ACR) and the American Society of Radiologic Technologists (ASRT) defines a radiology assistant (RA) as an advanced-level radiology technologist (RT) who works under the supervision of a radiologist (a medical doctor who specializes in medical imaging and radiology) to promote high standards of patient care by assisting radiologists in the diagnostic imaging environment. Under a radiologist's supervision, the RA performs patient assessment, patient management, and selected clinical imaging procedures.

The scope of practice adopted by the Certification Board for Radiology Practitioner Assistants (CBRPA) states that a radiology practitioner assistant (RPA) is an RT who is "qualified by graduation from an educational program recognized by the CBRPA. Within the radiologist/RPA relationship, RPAs exercise autonomy in decision making in the role of a primary care

giver with regard to patient assessment, patient management, and in providing a broad range of radiology diagnostic and interventional services.”

The profession of RAs and RPAs is fairly new, and a defined role is not clearly set for the profession. Essentially, both titles indicate that an RT has obtained advanced training that enables that individual to do more than an RT is allowed to do, but less than a radiologist. RAs and RPAs are meant to serve as physician extenders to radiologists by alleviating some of the duties of radiologists, freeing up their time, and allowing them to treat more patients. The two national certifying organizations, the ARRT and the CBRPA, have differing views on the role of RAs and RPAs. The two associations have given two different titles to the role, impose different training requirements, and adhere to a different scope of practice and role delineation. As a result, there is a lot of confusion in the radiologic community about what RAs and RPAs should and should not be allowed to do. In general the RA concept endorsed by the ARRT allows less autonomy than the RPA concept endorsed by the CBRPA.

The profession of RAs and RPAs is fairly new, and a defined role is not clearly set for the profession.

All nationally certified RAs and RPAs must also be certified by the ARRT as an RT, and are licensed by the Board as an RT if operating x-ray machines in the state. Therefore, the Board already has some authority over members of the profession. If the Board were to revoke an RA's RT license, then he or she could no longer operate any form of x-ray machine in West Virginia, and by default would be unable to do many of the duties of an RA, so on some level, RAs and RPAs are regulated under current code. However, the problem lies in the fact that the training, testing, and standards set by the ARRT and the CBRPA imply that RAs and RPAs have the ability to do things that are beyond the scope of practice for an RT.

According to the ARRT, under varying levels of supervision, an RA could reasonably be allowed to perform a variety of invasive procedures ranging from lumbar punctures to venous catheter placement for dialysis to feeding tube placement, and an RA could be allowed to administer conscious sedation, radiopharmaceuticals, and contrast agents.

The CBRPA condones allowing RPAs to evaluate and screen images initially on behalf of the radiologist, whereas, the ARRT does not. Both the CBRPA and the ARRT condone allowing RAs and RPAs to perform various specialized imaging procedures, including invasive procedures. According to the ARRT, under varying levels of supervision, an RA could reasonably be allowed to perform a variety of invasive procedures ranging from lumbar punctures to venous catheter placement for dialysis to feeding tube placement, and an RA could be allowed to administer conscious sedation, radiopharmaceuticals, and contrast agents.

There is concern within the medical community that without state regulation, physicians and facilities will allow RAs and RPAs to perform procedures that they are not properly trained to perform. A radiologist and member of the Board stated, *“Lumbar punctures, myelograms, central lines, conscious sedation, and breast localizations should never be within the scope of practice of RPA/RAs.”* Another radiologist and member of the Board commented, *“We are concerned about the scope of practice of these professionals. With RPA and RA recommendations to allow them to perform some invasive (potentially harmful) radiology procedures, some of which I do not perform as an experienced radiologist, it is very important to regulate these professionals to protect the citizens*

of West Virginia.” The Executive Director of the West Virginia Board of Medicine stated, “there is a strong consensus among physicians and ourselves that a number of RPA/RA defined duties fall into the realm of medical practice and thereby need to be regulated. You are looking at some procedures that take considerable expertise such as setting PICK lines, lumbar punctures, lumbar myelogram, various forms of catheterization, etc. Those who put these duties into practice need to be licensed.”

Other similar professions such as advanced nurse practitioners and physicians assistants are specifically regulated in the state, and along those same lines, it would benefit the citizens of the state if RAs and RPAs were specifically regulated too.

The danger that RAs and RPAs pose to the public is that because of lack of clear regulation and the newness of the profession, RAs and RPAs may be allowed to perform procedures that are actually suitably performed only by a radiologist or other type of physician. Other similar professions such as advanced nurse practitioners and physicians assistants are specifically regulated in the state, and along those same lines, it would benefit the citizens of the state if RAs and RPAs were specifically regulated too. **The Legislative Auditor recommends that radiologist assistants and radiology practitioner assistants should be regulated in West Virginia.**

Sonographers Do Not Pose a Significant Risk to the Public.

Sonograms do not release ionizing radiation, and pose little to no physical risks.

According to the U.S. Department of Labor, sonography (ultrasonography) is the use of special equipment to direct non-ionizing, high frequency sound waves into areas of a patient’s body to generate an image for the assessment and diagnosis of various medical conditions. Sonographers may specialize in obstetric and gynecologic sonography (the female reproductive system), abdominal sonography (the liver, kidneys, gallbladder, spleen, and pancreas), neurosonography (the brain), or breast sonography. In addition, sonographers may specialize in vascular technology or echocardiography.

Federal law requires that all sonograms be prescribed by a physician.

Sonograms do not release ionizing radiation, and pose little to no physical risks. Even in the case of fetal ultrasound, the FDA released a statement saying, “*Ultrasound is conducted with a prescription medical device that is regulated by the FDA. . . . The standard restricts ultrasound exposure to levels that produce few, if any, effects on the fetus based on epidemiological evidence.*”

According to the West Virginia Medical Practice Act (§30-3-1 et al), “*The diagnosis or treatment of, or operation or prescription for, any human disease, pain, injury, deformity or other physical or mental condition,*” is the practice of medicine, and the privilege to do so in the state must be granted by the West Virginia Board of Medicine. The West Virginia Radiologic Technology Board of Examiners argues that regulation of sonographers is needed to ensure that quality medical images are produced during sonograms. However, federal law requires that all sonograms be prescribed by a physician. Furthermore, since state law lists diagnosing within the definition of the practice of medicine, it is the responsibility of the physician to distinguish poor images from quality images during the process of diagnosing, and to take appropriate action to obtain a proper image.

Insurance providers do not require that sonographers be credentialed. They do require facilities to obtain proper state credentials. No other state licenses sonographers. Additionally, there is national testing and certification available for any sonographer who would like to obtain validation of his or her skills for employment purposes. There does not appear to be any additional need for West Virginia to regulate the profession of sonography at this time.

Because sonograms cannot be performed without physician prescription, ultimate responsibility over image quality belongs to physicians, and ultrasounds pose little to no physical risk to patients, it is evident that the unregulated practice of sonography dose not pose a discernable risk to the public. **The Legislative Auditor recommends that sonographers should not be regulated in West Virginia.**

Because sonograms cannot be performed without physician prescription, ultimate responsibility over image quality belongs to physicians, and ultrasounds pose little to no physical risk to patients, it is evident that the unregulated practice of sonography dose not pose a discernable risk to the public.

Conclusion

The Board is requesting authority to license nuclear medicine technologists, magnetic resonance imaging (MRI) technologists, radiologist assistants (RAs) and radiology practitioner assistants (RPAs), and ultrasound technologists (sonographers). Nuclear medicine technologists should be regulated. They pose a significant risk to the public because they expose patients to radiation through the administering of radiopharmaceuticals. MRI technologists should be regulated because MRI creates a magnetic field that can turn metal objects into projectiles, move metal implanted in the body, resulting in soft tissue tears, and interfere with certain electronic implants, such as pacemakers. Furthermore, the magnetic field produced by MRI can cause certain metals to conduct heat, which can cause both internal and external burns. Because of such dangers, MRI technologists should be regulated. RAs and RPAs are often trained to perform a variety of invasive procedures ranging from lumbar punctures to venous catheter placement for dialysis to feeding tube placement. Additionally, they are often trained to administer conscious sedation, radiopharmaceuticals, and contrast agents. Many of those procedures qualify as the practice of medicine, and should be performed by regulated individuals. Therefore, RAs and RPAs should be regulated. Sonography poses little to no physical risks to patients. Image quality is the responsibility of a supervising physician. Federal law requires that all sonograms be performed as a result of a physician prescription. Because of those facts, it appears that sonography does not pose a significant risk to the public, and should not be regulated at this time.

Recommendations

1. *The Legislative Auditor recommends that nuclear medicine technologists should be regulated in West Virginia.*
2. *The Legislative Auditor recommends that magnetic resonance imaging technologists should be regulated in West Virginia.*

3. *The Legislative Auditor recommends that radiologist assistants and radiology practitioner assistants should be regulated in West Virginia.*

4. *The Legislative Auditor recommends that sonographers should not be regulated in West Virginia.*

Finding 2:

Licensure Is the Best Way to Regulate Nuclear Medicine Technologists, MRI Technologists, and Radiologist Assistants.

Finding 1 discussed whether or not there is a need for regulation. Finding 2 addresses how the professions that need regulation should be regulated, and answers the following questions:

- What type of regulation is appropriate?
- Can the profession be regulated in a fiscally sound manner?
- Should the Board's proposed grandfather clause be approved?
- How is the profession regulated in other states?
- Which state agency should regulate the profession?
- How should licensees' qualifications be measured?

West Virginia Offers Several Types of Regulation.

What separates each level of regulation is whether or not the potential harm to the public is the result of a lack of competency, and whether or not this competency should be possessed by all members who participate in an occupation.

For each profession it must be decided which type of regulation is appropriate. West Virginia allows for different levels of regulation. What separates each level of regulation is whether or not the potential harm to the public is the result of a lack of competency, and whether or not this competency should be possessed by all members who participate in an occupation. The different levels of regulation include:

- **Registration** - Under registration, individuals are required to comply with specified standards in order to be placed on a registry. The standards may involve passing an examination, submitting proof of possessing certain credentials, or meeting other specified requirements, such as passing a background check. The registry indicates those individuals who are "registered" or qualified to perform in a given occupation. Unregistered individuals may perform a registered occupation. The registry gives the public the choice of whether to employ someone registered or unregistered. However, in some cases employment may be restricted by law or by policy to those on a registry.
- **Certification** - Under certification, individuals are required to comply with specified standards, such as passing an examination or possessing certain credentials. The primary difference between registration and certification is that certification grants individuals the right to use a specified title. Although any individual can practice the occupation, those who are not certified are prohibited from presenting themselves to the public under the title that is reserved for those who are certified in the occupation. A certification process is generally considered "title protection."
- **Licensure** - Under licensure, only individuals who are licensed can practice the occupation and the occupational title is restricted to individuals who are licensed. Individuals who possess certain educational or experiential requirements are licensed, and continuing education is generally required.

The procedures performed by nuclear medicine technologists, MRI technologists, and RAs and RPAs pose a discernable risk to the public, and require training and expertise in order for safety to be ensured. Title protection is important in this instance, but for the purpose of protecting the public, it is also important to restrict the practice of each of the occupations to individuals who have proven training and qualifications. Licensure will provide title protection and restrict unqualified individuals from practicing each profession. Because of the risks posed to the public, **the Legislative Auditor recommends that nuclear medicine technologists, magnetic resonance imaging technologists, radiologist assistants and radiology practitioner assistants should be regulated through licensure.**

Title protection is important in this instance, but for the purpose of protecting the public, it is also important to restrict the practice of each of the occupations to individuals who have proven training and qualifications.

The Board Is Financially Self-sufficient.

In FY 2005, the Board had an end of year balance of \$24,011. Table 3 shows the fees that the Board currently charges licensees. (The Board currently offers only an RT license and a podiatric medical assistant permit.)

Type of Fee	Amount
Application Fee	\$100
Annual Renewal Fee	\$65
Temporary Permit Fee	\$40
Reinstatement Fee	\$25
* Source: CSR §18-1-1 et al.	

All fees will be applied once per individual regardless of multiple types of licensure.

The Board plans to set the same fees for any new licensed profession. If an individual, who already is a state-licensed RT, applies for dual licensure in a newly licensed profession, the individual will not be charged to add the additional title to his or her existing license. All fees will be applied once per individual regardless of multiple types of licensure.

The Board provided information showing that 94 West Virginians are ARRT-certified in nuclear medicine technology, and 114 West Virginians are ARRT-certified in MRI technology. There are two individuals that are in the process of obtaining RPA education. It can be expected that those individuals will seek corresponding licensure if required to do so by the State. However, some of them will be seeking dual-licensure because they are already licensed by the Board as RTs. Such dual licensees will not bring any extra revenue to the Board. When asked if additional fees are needed to fund the extra work that the Board will have to do in order to offer dual-licenses, the director of the Board replied,

The extra workload would not justify the expense of another office assistant. If it was determined that a part time office assistant would be needed, it would be for no more than 2 days a week at a cost of approximately \$ 110.00 per week. This individual would work on an as needed basis. The greatest original expense would be in printing of the new licenses and postage.

The Legislative Auditor supports the Board's plan to charge new licensees its standard fees and to use a one-time fee schedule for individuals seeking multiple types of licensure. The Board should be able to operate in a fiscally sound manner under that plan.

The Legislative Auditor supports the Board's plan to charge new licensees its standard fees and to use a one-time fee schedule for individuals seeking multiple types of licensure. The Board should be able to operate in a fiscally sound manner under that plan.

A Conditional License or Permit Would Be More Appropriate than a Grandfather Clause.

The Board proposed the following legislative language in its sunrise application:

An individual that has been practicing [nuclear medicine technology/magnetic resonance imaging technology] in this state for three of the previous five years prior to the implementation of this article may be issued a license without examination to practice the profession. A notarized letter, signed by the supervising physician, must be submitted with the individual's application, stating that the individual has performed the duties of a [nuclear medicine technologist/magnetic resonance imaging] for the required time frame.

More than experience is needed to ensure patient safety.

In this instance, the Legislative Auditor determines that licensing currently practicing individuals without requiring a test of competency and knowledge would defeat the purpose of creating a new type of licensure by possibly allowing unqualified individuals to continue to practice in the state.

This type of language is what is commonly known as a "grandfather clause." A grandfather clause is one that allows an exception to people or situations that existed before a law was created. In this instance, the Board proposes to license people, who have been practicing nuclear medicine technology or magnetic resonance imaging for three of the last five years, without requiring them to ever meet new licensure requirements.

More than experience is needed to ensure patient safety. As demonstrated in Finding 1, a person acting as a nuclear medicine technologist or MRI technologist poses a discernable risk to the public if they lack knowledge and competency. In this instance, the Legislative Auditor determines that licensing currently practicing individuals without requiring a test of competency and knowledge would defeat the purpose of creating a new type of licensure by possibly allowing unqualified individuals to continue to practice in the state.

However, the Legislative Auditor also recognizes that individuals currently practicing nuclear medicine technology or MRI technology should be given adequate opportunity to meet the new requirements before being required to do so. Otherwise, qualified individuals could unnecessarily become unemployed because of new licensure requirements.

When Ohio first began licensing nuclear medicine technologists, conditional licenses were offered to individuals already employed in the profession. Doing so allowed Ohio to begin ensuring public safety while protecting the jobs of qualified individuals. Under Ohio's conditional license, any person who could submit satisfactory evidence by a certain date that he or she had been employed during the year prior to the onset of licensure requirements could obtain a conditional license that allowed the individual to practice for up to three years, after which time the individual was required to meet all regular licensure requirements to practice in Ohio.

However, the Legislative Auditor also recognizes that individuals currently practicing nuclear medicine technology or MRI technology should be given adequate opportunity to meet the new requirements before being required to do so.

Likewise, **the Legislative Auditor recommends that currently practicing nuclear medicine technologists and magnetic resonance imaging technologists in West Virginia be given a time-sensitive conditional license in order to give established individuals the opportunity to obtain required education and certification status.** The Legislative Auditor has discussed this recommendation with the Board, and it supports the idea of conditional licenses.

Grandfathering is not relevant to RAs and RPAs because no individuals currently practice in that capacity at this time in West Virginia.

Nuclear Medicine Technologists Should Be Licensed.

As noted in Finding 1, ionizing radiation exposure in high and, or repeated doses can cause cancer, hereditary effects, tissue damage, and burns. Because nuclear medicine technologists expose patients to ionizing radiation by administering radiopharmaceuticals, significant risk of harm is being posed upon the public by the unregulated profession.

There are two national associations that offer certification in nuclear medicine technology. Those associations are the ARRT, and the Nuclear Medicine Technology Certification Board (NMTCB). As Table 3 shows, some surrounding states also regulate nuclear medicine technologists.

**Table 3
The Status of Regulation of Nuclear Medicine Technologists in Surrounding States***

State	Regulation Status
Ohio	Yes
Kentucky	No
Maryland	Yes
Virginia	No
Pennsylvania	Yes
* Source: Information from various states' agencies	

In Ohio, Pennsylvania, and Maryland, nuclear medicine technologists are regulated by the same agency that regulates RTs. Likewise, it is appropriate for the West Virginia Radiologic Technology Board of Examiners to be the entity that licenses nuclear medicine technologists in West Virginia.

In Ohio, Pennsylvania, and Maryland, nuclear medicine technologists are regulated by the same agency that regulates RTs. Likewise, it is appropriate for the West Virginia Radiologic Technology Board of Examiners to be the entity that licenses nuclear medicine technologists in West Virginia.

The Board will require a person to pass the ARRT's, the State's, or the NMTCB's nuclear medicine technology tests to be licensed. The ARRT's, the State's, and the NMTCB's certification tests and requirements are sufficient to validate that an individual has the training and experience needed to perform nuclear medicine technology in a manner that should ensure public safety. Additionally, the Board may set further experience and training requirements for applicants. **The Legislative Auditor supports the Board's proposed requirements for nuclear medicine technologists.** The Board has not yet outlined the scope of practice that will be used for nuclear medicine technologists, but will do so if it is granted the right to license the profession.

The Board will require a person to pass the ARRT's, the State's, or the NMTCB's nuclear medicine technology tests to be licensed.

Magnetic Resonance Imaging Technologists Should Be Licensed.

As noted in Finding 1, due to the risks involved with magnetism, the heating potential of energy fields produced by MRI, and the importance of MRI technologists' use of proper screening and safety precautions to prevent patient harm, state regulation of the profession is needed. There are two national associations that offer certification in MRI technology. Those associations are the ARRT, and the American Registry of Magnetic Resonance Imaging Technologists (ARMRIT). No other state requires licensure of MRI technologists. However, despite that fact, the Legislative Auditor still concludes that licensure of MRI technologists is needed because of the inherent risks posed by MRI.

Furthermore, the ASRT introduced a bill titled the Consumer Assurance of Radiologic Excellence (CARE) bill in 1999-2000, 2001-2002, and during the current session of the U.S. Congress. The bill would require all

states to regulate MRI technologists. Although the bill has not yet passed, it is quite possible that it will pass in the future if it is reintroduced and continues to gain support. At this time, the House version of the bill has 124 co-sponsors including all three of West Virginia's Representatives.

Currently, the Board is named the West Virginia Radiologic Technology Board of Examiners. MRI is not a type of radiologic technology. It is classified as a type of medical imaging. X-ray examinations, which the Board regulates, is a type of both radiologic technology and medical imaging. Because the Board already licenses professionals of one type of medical imaging, the Legislative Auditor determines that the Board would be the best regulatory agency for other types of medical imaging. In order to reflect the new types of licensees, the Board proposes that its name be changed to the West Virginia Medical Imaging and Radiation Therapy Board of Examiners. Additionally, the Board proposes that the regulation of medical imaging should be written into its existing mandate. **The Legislative Auditor recommends that the West Virginia Radiologic Technology Board of Examiners' name and mandate be amended in code if the Legislature chooses to allow the Board to license MRI technologists.**

In order to reflect the new types of licensees, the Board proposes that its name be changed to the West Virginia Medical Imaging and Radiation Therapy Board of Examiners.

The Board will require an applicant to pass MRI technology exams offered by the ARRT, the ARMRT, or the State in order to be licensed. The ARRT's, the ARMRT's, and the State's certification tests and requirements are sufficient to validate that an individual has the training and experience needed to perform MRI technology in a manner that should ensure public safety. Additionally, the Board may set further experience and training requirements for applicants. The Legislative Auditor supports the Board's proposed requirements for MRI technologists. The Board has not yet outlined the scope of practice that will be used for MRI technologists, but will do so if they are granted the right to license the profession.

Radiologist Assistants and Radiology Practitioner Assistants Should Be Licensed.

As noted in Finding 1, the danger posed by RAs and RPAs to the public is that because of a lack of clear regulation and the newness of the profession, RAs and RPAs may be allowed to perform procedures that are actually suitably performed only by a radiologist or physician; therefore state regulation is needed.

Two national organizations offer certification for RAs and RPAs. The CBRPA offers both an RPA and RA test. ARRT offers a certification test for RAs and offers a test allowing RPAs certified through CBRPA to receive RA certification, and will continue to make that allowance through 2007.

RA and RPA certification is relatively new. The CBRPA began offering certification in 1999, and the ARRT began offering certification

in 2005. Therefore, many states have not yet begun to regulate the profession. Several states, such as Tennessee and New York, currently regulate RAs. Bills have been introduced in other states, such as Kentucky and Florida, but have not passed and/or been voted on yet.

It is unclear whether or not the Board is the appropriate regulatory agency for RAs and RPAs. RAs and RPAs are trained to perform various medical procedures that can be defined as the practice of medicine, and therefore, might be more appropriately regulated by the West Virginia Board of Medicine.

If adequate restrictions are created and imposed upon RAs and RPAs, then public safety could be ensured through regulation by either board.

It is important that West Virginia use only one title to identify the profession of RAs and RPAs. If the same profession functions under two titles in West Virginia, it will only further the confusion over what the duties of such professionals should be.

It is unclear whether or not the Board is the appropriate regulatory agency for RAs and RPAs. RAs and RPAs are trained to perform various medical procedures that can be defined as the practice of medicine, and therefore, might be more appropriately regulated by the West Virginia Board of Medicine. According to the Board of Medicine's Executive Director,

The issue at hand. . . is that there is no regulatory oversight to govern the extent of what an RPA/RA can or cannot do medically in this state. . . . In regard to defining practice, . . . there is a strong consensus among physicians and ourselves that a number of RPA/RA defined duties fall into the realm of medical practice and thereby need to be regulated. . . . Those who put these duties into practice need to be licensed under the Board of Medicine and certainly hold the necessary Radiology credentials to satisfy [the WV Radiologic Technology Board of Examiners' requirements] as well. . . . We have a group of involved physicians who are currently working toward the consensus of allowable and disallowed duties for RPA/RAs.

The Executive Director of the West Virginia Radiologic Technology Board of Examiners stated, "*The more we get into this, the more I'm being convinced our Board does not need to regulate these individuals, but the Board of Medicine needs to be the regulating agency.*"

If adequate restrictions are created and imposed upon RAs and RPAs, then public safety could be ensured through regulation by either board. Currently the two boards are working cooperatively to achieve the best regulatory solution. **The Legislative Auditor recommends that the West Virginia Radiologic Technology Board of Examiners and the West Virginia Board of Medicine should continue to work together to determine exactly how and by whom RAs and RPAs will be regulated, and that the two Boards should reapproach the Legislature if a consensus cannot be reached.**

Regardless of which board regulates the profession, several regulatory measures should be taken by the licensing agency. It is important that West Virginia use only one title to identify the profession of RAs and RPAs. If the same profession functions under two titles in West Virginia, it will only further the confusion over what the duties of such profession

als should be. According to a consensus statement by the Advanced Practice Advisory Panel which met in 2002 and included members from the ACR, the ASRT, the ARRT, state regulatory agencies, radiologic science educational programs, a medical imaging manufacturer, and two RPAs,

The title of 'radiologist assistant' most accurately reflects the nature of the relationship between the radiologist and the radiologic technologist working in an advanced clinical role. . . . The panel believes that the inclusion of the word 'practitioner' in the job title is potentially misleading to the public and other professionals, as it implies that the individual is an assistant to any medical practitioner, not just radiologists. The title "radiologist assistant" clearly links the advanced level technologist to the radiologist.

The Board proposed a grandfather clause for the new licensees, but the Legislative Auditor determines that a time-sensitive conditional license would better protect the public by requiring all individuals in the professions to meet competency requirements at some point in the future.

The Legislative Auditor recommends that all radiologist assistants and radiology practitioner assistants who obtain corresponding state licensure should be referred to as radiologist assistants.

Additionally, **the Legislative Auditor recommends that a clear scope of practice should be developed for RAs and included in West Virginia law.** Expertise from many sources should be used to decide upon that scope of practice. The Board of Medicine, and the Radiologic Technology Board of Examiners should form a committee to reach a consensus on the subject, and that committee should seek input, and guidance from national organizations with expertise in the subject, such as the ACR, the ARRT, the ASRT, and the CBRPA. Several of those national organizations employ individuals solely for the purpose of advising state agencies on radiologic and medical imaging services regulation.

The Board will accept both the ARRT's certification test for RAs and the CBRPA's certification test for RPAs as credentialing tests to qualify an individual for West Virginia licensure as an RA. The Legislative Auditor supports the use of those tests as measurement of RA qualifications. The licensing board should also set experience, and education standards.

Conclusion

Nuclear medicine technologists, MRI technologists, and RAs and RPAs should be regulated through licensure. Licensure will provide title protection and restrict unqualified individuals from practicing each profession. The Board proposed a grandfather clause for the new licensees, but the Legislative Auditor determines that a time-sensitive conditional license would better protect the public by requiring all individuals in the professions to meet competency requirements at some point in the future. The Board is financially self-sufficient, and is the appropriate entity to license both nuclear medicine technologists and MRI technologists. The

Board of Medicine may be the appropriate entity to license RAs and RPAs because many of the duties of the profession could qualify as the practice of medicine. The two boards are working together to determine the best regulatory solution. RAs and RPAs should be referred to by one title in state law to avoid confusion. The Legislative Auditor determines that all RAs and RPAs should be referred to as radiologist assistants.

Recommendations

5. *The Legislative Auditor recommends that nuclear medicine technologists, magnetic resonance imaging technologists, radiologist assistants and radiology practitioner assistants should be regulated through licensure.*
6. *The Legislative Auditor recommends that currently practicing nuclear medicine technologists and magnetic resonance imaging technologists in West Virginia be given a time-sensitive conditional license in order to give established individuals the opportunity to obtain required education and certification status.*
7. *The Legislative Auditor recommends that the West Virginia Radiologic Technology Board of Examiners' name and mandate be amended in code if the Legislature chooses to allow the Board to license MRI technologists.*
8. *The Legislative Auditor recommends that the West Virginia Radiologic Technology Board of Examiners and the West Virginia Board of Medicine should continue to work together to determine exactly how and by whom radiologist assistants and radiology practitioner assistants will be regulated, and that the two Boards should reapproach the Legislature if a consensus cannot be reached.*
9. *The Legislative Auditor recommends that all radiologist assistants and radiology practitioner assistants who obtain corresponding state licensure should be referred to as radiologist assistants.*
10. *The Legislative Auditor recommends that a clear scope of practice should be developed for radiologist assistants and included in West Virginia law.*

Appendix A: Transmittal Letter

WEST VIRGINIA LEGISLATURE *Performance Evaluation and Research Division*

Building 1, Room W-314
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305-0610
(304) 347-4890
(304) 347-4939 FAX



John Sylvia
Director

June 7, 2006

Grady Bowyer, Executive Director
WV Radiologic Technology Board of Examiners
1939 Wilson Avenue
St. Albans, WV 25177

Dear Mr. Bowyer :

This is to transmit a draft copy of the Sunrise Report on Nuclear Medicine Technologists, Ultrasound Technologists, Magnetic Resonance Imaging Technologists, and Radiologist Assistants. This report is scheduled to be presented to the Joint Committee on Government Organization. We will inform you of the exact time and location once the information becomes available. It is expected that a representative from your agency be present at the meeting to orally respond to the report and answer any questions the committee may have.

If you would like to schedule an exit conference to discuss any concerns you may have with the report, please notify us by July 6, 2006. We need your written response by noon on July 14, 2006, in order for it to be included in the final report.

We request that your personnel not disclose the report to anyone not affiliated with your agency. Thank you for your cooperation.

Sincerely,

Handwritten signature of John Sylvia in cursive script.
John Sylvia

Joint Committee on Government and Finance

Appendix B: Agency Response

**WEST VIRGINIA RADIOLOGIC TECHNOLOGY
BOARD OF EXAMINERS
1715 FLAT TOP ROAD
P.O. BOX 638
COOL RIDGE, WV 25825-0638
Telephone: (304) 787-4398 Toll Free: (877) 609-9869 Fax: (304) 787-3030
E-mail: wvrtboe@charter.net Web Page: www.wvrtboard.org**

July 10, 2006

John Sylvia, Director
Performance Evaluation and
Research Division
Building 1, Room W-314
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305-0610

Re: Sunrise Review

Dear Mr. Sylvia:

The West Virginia Radiologic Technology Board of Examiners (Board) would like to thank you and your staff for the excellent report which was prepared concerning our request to license several new disciplines in the field of medical imaging.

The Board feels the request to license nuclear medicine technologist, magnetic resonance imaging technologist, radiologist assistants and radiology practitioner assistants was thoroughly researched and evaluated. The Board is in complete agreement with the report and recommendations and believes by adding these new disciplines to the law, the public will be better protected from harmful effects that could be caused by unsafe practices within the profession of medical imaging.

Although the Board believes the ultrasound technologist should also be licensed due to the expertise required to obtain a proper image for an accurate diagnosis, we do not disagree with the findings of the report. In the field of medical imaging, a demonstrated harm to the public cannot always be visualized.

I will be in attendance at the Legislative Interim meeting to discuss this report with the committee and, hopefully, answer any questions which may arise.

Again, thank you for the opportunity to review and comment on the report. Please express our sincere appreciation to Ms. Dusty Johnson for her many long hours researching and preparing the report.

Sincerely,



Grady M. Bowyer, R.T. (R)
Executive Director

GMB: