studies within a time frame defined by hospital policy and to provide necessary staffing during all hours of operation and for emergencies.

Measurable Elements of AOP.05.01

1. Radiology and diagnostic imaging services are under the direction of one or more qualified individuals. (*See also* GLD.06.00, ME 1)
2. Responsibilities of the individual managing radiology and diagnostic imaging services include the following:
   - Developing, implementing, and maintaining policies and procedures
   - Overseeing administrative tasks
   - Overseeing quality control
   - Developing and implementing a staffing program
   - Recommending outside sources of radiology and diagnostic imaging services
   - Monitoring and reviewing all radiology and diagnostic imaging services
3. Staff with proper qualifications and experience perform diagnostic and imaging studies.
4. Staff with proper qualifications and experience interpret study results and verify and report the results within the time frame defined by hospital policy.
5. There is an adequate number of staff to meet patient needs and the hospital's scope of services.
6. Radiology and diagnostic imaging supervisory staff have proper qualifications and experience for the role.

Standard AOP.05.02

A radiation and/or diagnostic imaging safety program for patients, staff, and visitors is implemented and is compliant with applicable professional standards, laws, and regulations.

Intent of AOP.05.02

Radiation exposure can pose potential risk of long-term damage, so the hospital has a responsibility to implement a radiation safety program to protect patients, staff, and visitors from unnecessary or excessive exposure to radiation.

Risks of long-term damage depend on the dose of radiation delivered and the length and frequency of exposure to radiation. The higher the radiation dose, the greater the risk for long-term damage, and repeated doses have a cumulative effect presenting greater risks. The diagnostic procedures most commonly associated with avoidable radiation doses are computed tomography (CT), nuclear medicine, and fluoroscopy. A radiation safety program is important in the safe use of ionizing radiation, including radioactive materials (RAM) and radiation producing machines.

Health care providers weigh the medical necessity of the exposure to radiation for diagnosis or treatment against the risks. Unnecessary exposure to radiation should be avoided. The hospital follows the principles of ALARA (maintain all radiation exposures as low as reasonably achievable).

Diagnostic imaging, such as magnetic resonance imaging (MRI) and ultrasonography (US), does not use ionizing radiation, and therefore the risks from radiation are not present. There are other risk-related diagnostic imaging services that need to be addressed. Hazards from MRI include the following:

- Exposure to a strong magnetic field
- Presence of cryogenic gases used to cool the magnets of the MRI
- Exposure to acoustic noise

The hospital has a radiation and diagnostic imaging safety program that includes all components of the hospital's radiology and diagnostic imaging services, including radiation oncology and the cardiac catheterization laboratory. The safety program addresses the risks and hazards encountered and implements safety practices and prevention measures for radiology and diagnostic imaging staff, patients, and visitors. The program is coordinated with the hospital's facility management and infection prevention and control programs.

As noted, the hospital follows the principles of ALARA (maintain all radiation exposures as low as reasonably achievable), which include the following:

- Minimizing the amount of time staff, patients, and visitors are exposed to radiation
- Increasing the distance between the radiation source and any staff, patients, and visitors
- Using lead or other shields to reduce exposure to radiation

Hospitals must implement measures to address these hazards from diagnostic imaging. For example, MRI safety measures may include the following:

- Clearly marking safety zones in the MRI area to indicate who can have access and what safety precautions are necessary in each zone
- Ensuring proper ventilation and appropriate staff training to address hazards related to cryogenic gases
- Protecting ears to decrease discomfort and harm from acoustic noise during MRI examinations
- Restricting access to the MRI magnetic field area to only authorized staff and to patients accompanied by those staff
- Posting signs in and around the area to identify hazards
- Completing a preimaging checklist to identify any risks or exclusion criteria for patients undergoing MRI (for example, metal implants, shrapnel, pacemaker in place)
- Ensuring that only special non-ferromagnetic equipment enters the MRI environment

The radiation safety management program includes the following:

- Compliance with applicable professional standards, laws, and regulations
- Orientation of all radiology and diagnostic imaging staff to safety procedures and practices
- Training and ongoing education for new procedures, new equipment, and newly acquired or recognized hazardous materials
- Availability of safety protective equipment and devices appropriate to the practices and hazards encountered; in radiology, protective devices and equipment include lead aprons, lead lining in the walls, and radiation badges (for staff), among others.
- Compliance with standards addressing facility management and infection prevention and control programs

Measurable Elements of AOP.05.02

1. Ⓓ A radiation and/or diagnostic imaging safety program for patients, staff, and visitors is implemented and is compliant with applicable professional standards, laws, and regulations.
2. Radiology and diagnostic imaging staff are oriented to safety requirements and receive ongoing education and training for any new procedures, equipment, and hazardous materials. (*See also* SQE.01.07, ME 1)
3. Safety protective equipment and devices appropriate to the practices and hazards encountered from radiation and diagnostic imaging are available to staff, patients, and visitors, and in the area in which radiology and diagnostic imaging services are provided.
4. Radiation safety education includes the principles of ALARA and implementation of protocols that identify the maximum dose of radiation for each type of study.
5. Hazards from magnetic resonance imaging are addressed using industry standards and evidence-based guidelines.
6. The hospital designates an individual to serve as the radiation safety officer who is responsible for the following:
   - Ensuring that radiologic services are provided in accordance with laws, regulation, and organizational policies
   - Monitoring compliance with established radiation safety practices (including oversight of dosimetry monitoring)
7. The radiation and/or diagnostic imaging safety program is part of the organization's facility management and infection prevention and control programs and provides reports to those programs at least annually and when any safety events and infection control events occur.