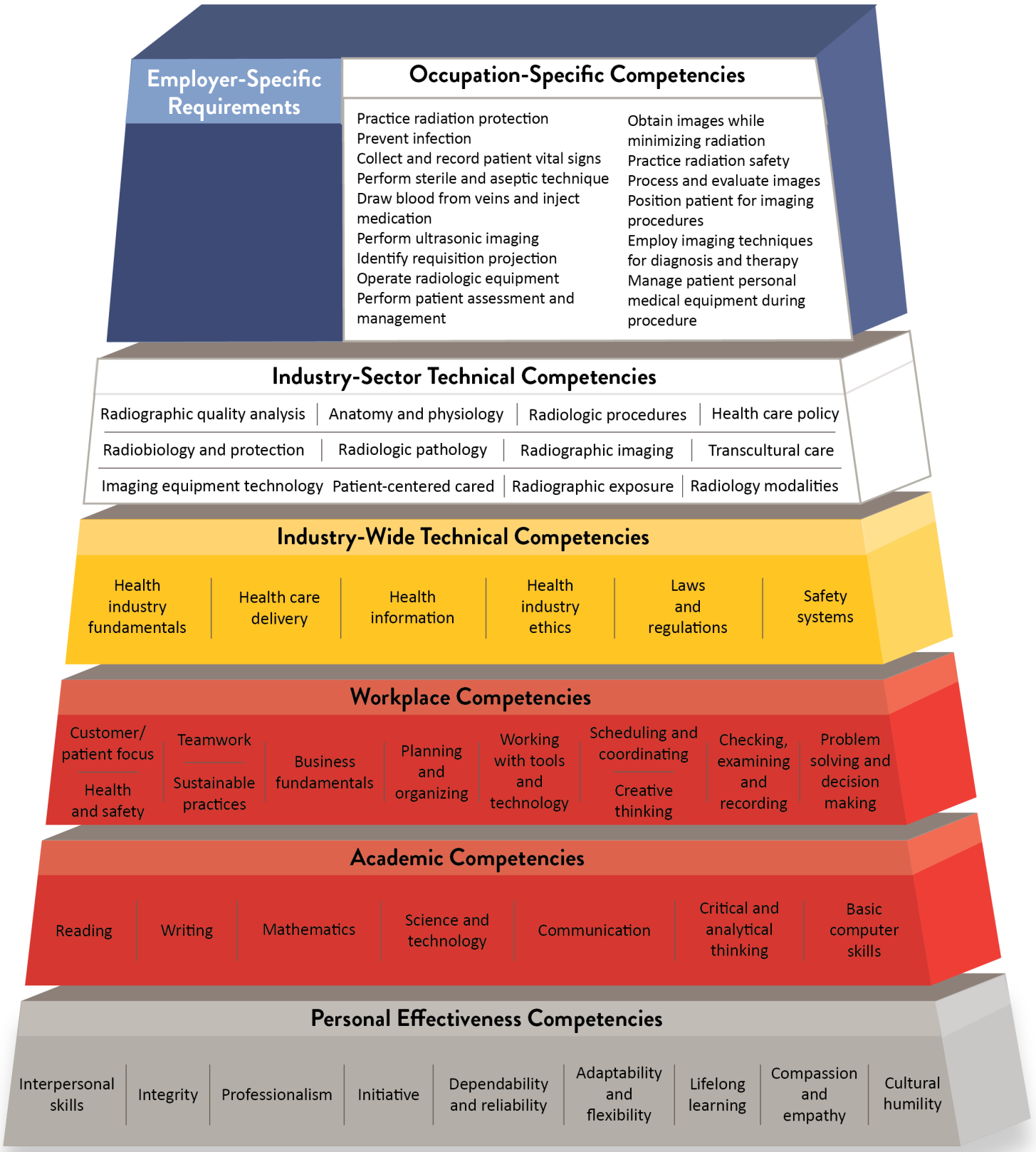
Minnesota Dual-Training Pipeline

Competency Model for Health Care Services

Occupation: Radiologic Technologist



Based on: Fundamentals of Health Care Competency Model, Employment and Training Administration, United States Department of Labor, February 2025. For more detailed information about competency model creation and sources, visit dli.mn.gov/business/workforce/health-care-services.

Competency Model for Radiologic Technologist

Radiologic Technologist – An allied health professional who maintains and uses equipment and supplies necessary to demonstrate portions of the human body on x-ray film or fluoroscopic screen for diagnostic procedures.

*Pipeline recommends the Industry-Sector Technical Competencies as formal training opportunities (provided through related instruction) and the Occupation-Specific Competencies as on-the-job (OJT) training opportunities.

Industry-Sector Technical Competencies

Related Instruction for dual training means the organized and systematic form of education resulting in the enhancement of skills and competencies related to the dual trainee's current or intended occupation.

- **Radiographic quality analysis** – Manage the factors that affect image quality and detail specific corrective actions to improve quality.
- **Anatomy and physiology** – Understand the study of the structure and relationship between body parts and the study of the function of body parts and the body as a whole.
- **Radiologic procedures** – Understand specialized procedures providing diagnostic medical images of patients.
- **Radiobiology and protection** – Understand the effects of ionizing radiation on body tissues, protective measures for limiting exposure to the patient and personnel and radiation monitoring devices.
- **Radiologic pathology** – Able to produce cross section tomographic images by first scanning a slice of tissue from multiple angles, then calculating a relative linear attenuation to lead to causes of disease.
- **Imaging equipment technology** – Knowledge of diagnostic imaging equipment and computer hardware including digital X-ray imaging, PET, CT and diagnostic ultrasound systems.
- **Patient-centered care** – Ability to treat patients not only from a clinical perspective, but also from an emotional, mental, spiritual, social, and financial perspective.

- **Transcultural care** – Be able to have a strong awareness of different cultures and cultural sensitivity with both verbal and non-verbal communications.
- **Radiographic imaging** – Understand the technique and process used to create images of the human body (or parts and function thereof) for clinical purposes (medical procedures seeking to reveal, diagnose or examine disease) or medical science.
- **Health care policy** – Understanding of the health policy that deals with the organization, financing, and delivery of health care services.
- **Radiographic exposure** – Knowledge of principles that govern radiographic exposure factors and impact on patient as well as safety measures.
- **Radiology modalities** – Understanding of equipment such as X-ray, CT, MRI, ultrasound, nuclear imaging, and fluoroscopy, etc. to acquire structural or functional images of the body.

Occupation-Specific Competencies

On-the-Job Training is hands-on instruction completed at work to learn the core competencies necessary to succeed in an occupation. Common types of OJT include job shadowing, mentorship, cohort-based training, assignment-based project evaluation and discussion-based training.

- **Practice radiation protection** – Understand the use of devices, equipment, distance and barriers to reduce the risk of exposure to ionizing radiation in a health care facility where radiation-emitting devices are operated.
- **Prevent infection** – Ability to prevent or reduce the spread of infection in medical settings
- **Collect and record patient vital signs** – Ability to take accurate temperature, height, weight, pulse, blood pressure vital signs.
- **Perform sterile and aseptic technique** – Understand the method of preventing the transmission of infection to the patient during performance of clinical procedures.
- **Draw blood from veins and inject medication** – Ability to puncture a vein for withdrawal of blood or injection of a solution such as medication or contrast media.
- **Perform ultrasonic imaging** – Understand the use of ultrasonic imaging devices to produce diagnostic images, scans, videos or 3D volumes of anatomy and diagnostic data.
- **Identify requisition projection** – Understand the process by which it is determined if each projection is correctly identified and marked and whether it has sufficient diagnostic quality to meet the minimum requirements of the medical order.

- **Operate radiologic equipment** – Knowledge of equipment used in radiation procedures and expertise in using equipment safely.
- **Perform patient assessment and management** – Understand the process of identification of the condition, needs, abilities and preferences of a patient and manage the radiological examination with this in mind.
- **Obtain images while minimizing radiation** – Understand the appropriate technical factors for exams to obtain diagnostic images while keeping the radiation dose to the patient as minimal as possible.
- **Practice radiation safely** – Understand the safety issues related to radiation hazards arising from the handling of radioactive materials or chemicals and exposure to x-ray from x-ray machines, electron microscopes, or other source.
- **Process and evaluate images** – Ability to capture the image produced by a medical imaging device and the process by which you determine whether each projection is correctly identified and marked and whether it has the quality to meet the minimum requirements.
- **Position patient for imaging procedures** – Ability to position a patient for taking various radiographs of chest/thorax, upper extremity, lower extremity, head, spine/pelvis, and abdomen.
- **Employ imaging techniques for diagnosis and therapy** – Knowledge of specific imaging techniques such as fluoroscopy studies, surgical studies, mobile studies and pediatrics that are useful for diagnosis and therapy and occurs in general radiology.
- **Manage patient personal medical equipment during procedure** – Assist patients with personal medical equipment such as oxygen tank, IV, and tubing to ensure safe radiological procedures.

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