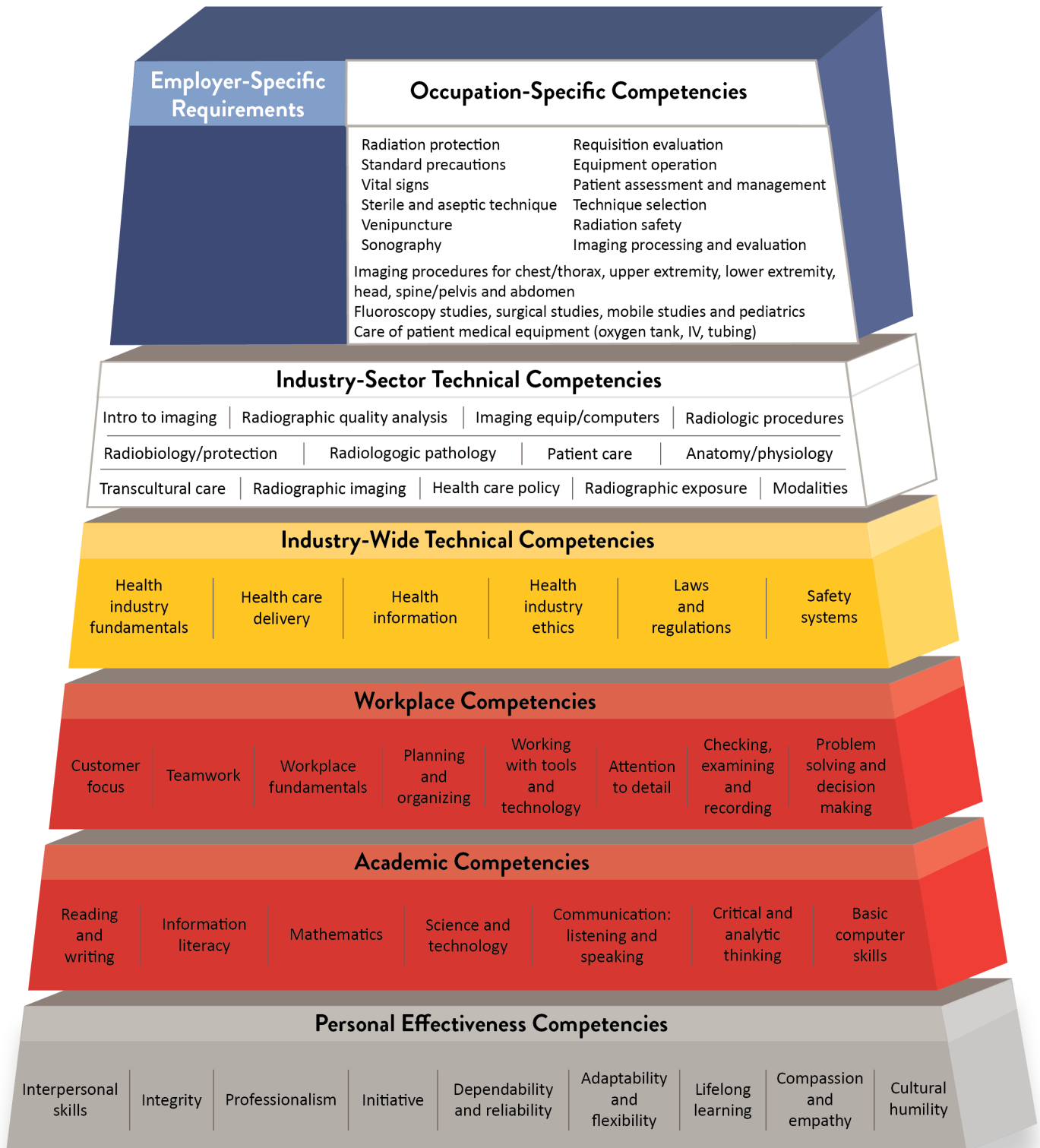


# Minnesota Dual-Training Pipeline

## Competency Model for Health Care Services

### Occupation: Radiologic Technician



Based on: Health: Allied Health Competency Model Employment and Training Administration, United States Department of Labor, December 2011.

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



## Competency Model for Radiologic Technician

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

### 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.

- **Intro to imaging** – Understand the practice of using a magnetic field and radio frequencies to create sectional images of the body.
- **Imaging equipment/computers** – Able to operate or oversee operation of radiologic or magnetic imaging equipment and computer hardware relevant to radiology practice.
- **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.
- **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.
- **Radiographic quality analysis** – Manage the factors that affect image quality and detail specific corrective actions to improve quality.
- **Imaging equipment/computers** – Knowledge of diagnostic imaging equipment including digital X-Ray imaging, PET, CT and diagnostic ultrasound systems.
- **Radiologic procedures** – Understand specialized procedures providing diagnostic medical images of patients.
- **Radiobiology/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.
- **Patient care** – Ability to treat patients not only from a clinical perspective, but also from an emotional, mental, spiritual, social, and financial perspective.
- **Anatomy/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.
- **Radiographic exposure** – Knowledge of principles that govern radiographic exposure factors and impact on patient as well as safety measures.
- **Transcultural care** – Be able to have a strong awareness of different cultures and cultural sensitivity with both verbal and non-verbal communications.
- **Healthcare policy** – Understanding of the health policy that deals with the organization, financing, and delivery of health care services.

## Occupation-Specific Competencies

**On-the-Job Training (OJT)** 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.

- **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.
- **Standard precautions** – Ability to prevent or reduce the spread of infection in medical settings.
- **Vital signs** – Ability to take accurate temperature, height, weight, pulse, blood pressure vital signs.
- **Sterile and aseptic technique** – Understand the method of preventing the transmission of infection to the patient during performance of clinical procedures.
- **Venipuncture** – Ability to puncture a vein for withdrawal of blood or injection of a solution such as medication or contrast media.

- **Sonography** – Understand the use of ultrasonic imaging devices to produce diagnostic images, scans, videos or 3D volumes of anatomy and diagnostic data.
- **Requisition evaluation** – 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.
- **Equipment operation** – Knowledge of equipment used in radiation procedures and expertise in using equipment safely.
- **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.
- **Technique selection** – Understanding of the appropriate technical factors for the exam will allow you to obtain diagnostic images while keeping the radiation dose to the patient as minimal as possible.
- **Radiation safety** – 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.
- **Imaging processing and evaluation** – 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
- **Imaging procedures for chest/thorax, upper extremity, lower extremity, head, spine/pelvis, abdomen** - Ability to position a patient for taking various radiographs.
- **Fluoroscopy studies, surgical studies, mobile studies, pediatrics** - Knowledge of specific imaging techniques that are useful for diagnosis and therapy and occurs in general radiology.
- **Care of patient medical equipment (oxygen tank, IV, tubing)** - Assist patients with personal medical equipment to ensure safe radiological procedure.

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