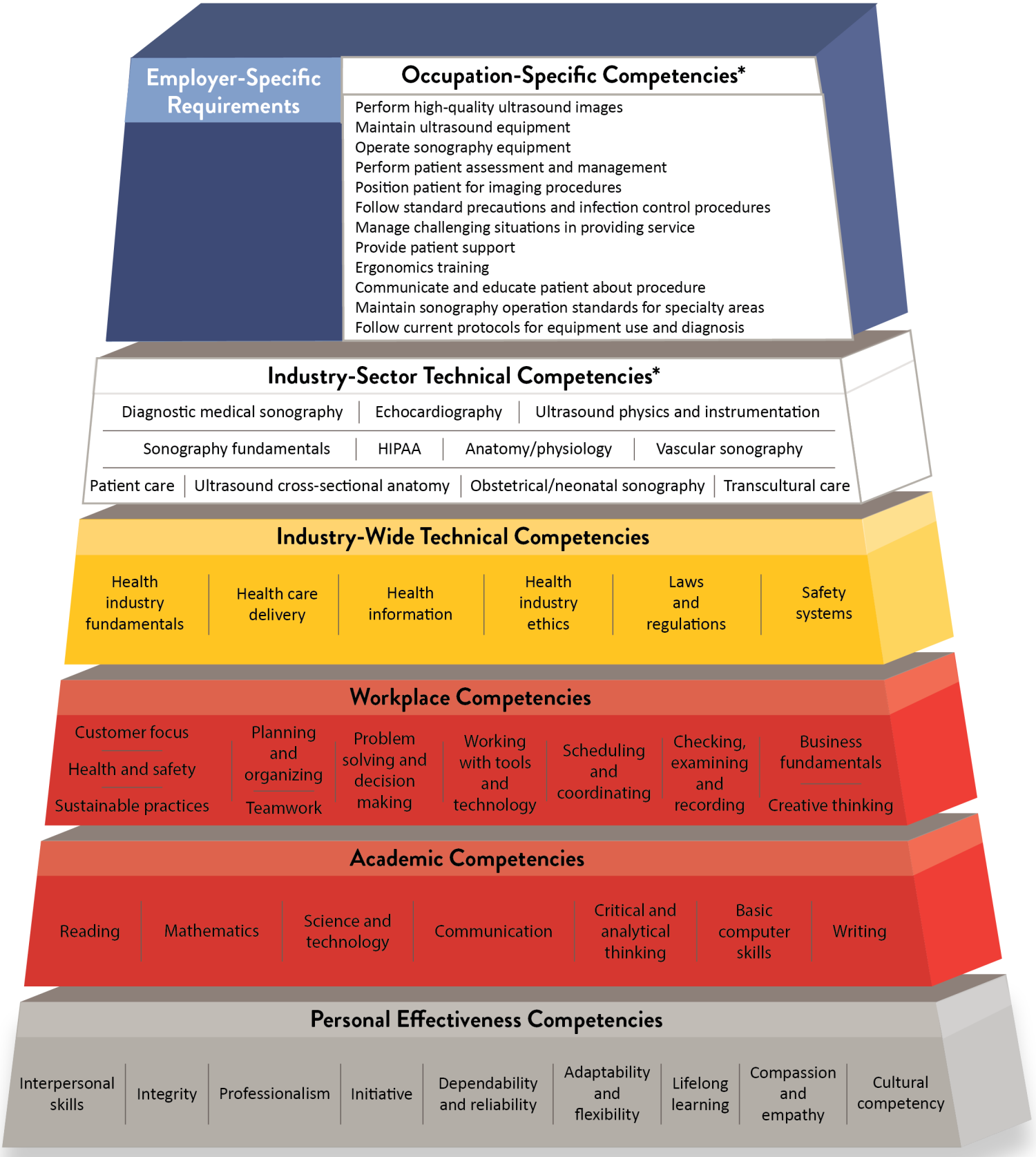
Minnesota Dual-Training Pipeline

Competency Model for Health Care Services

Occupation: Sonographer



Based on: Fundamentals of Health Care Competency Model, Employment and Training Administration, United States Department of Labor, September 2018. For more detailed information about competency model creation and sources, visit dli.mn.gov/business/workforce/health-care-services.

Competency Model for Sonographer

Sonographer – A health professional trained to operate specialized imaging equipment that uses soundwaves to create ultrasound images of various parts of the body. Sonographers work closely with physicians and other healthcare providers who examine the images to assess and diagnose medical conditions.

*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.

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.

- **Sonography fundamentals** – Broad understanding of the sonography field, including safety; legal, ethical, and legislative issues; current sonographic examinations; and basic patient care skills.

- **Diagnostic medical sonography** – Able to focus on ultrasound findings, scanning techniques, patient history, laboratory data, and other imaging modalities to help better understand how to interpret pathology.

- **Ultrasound physics and instrumentation** – Understand principles of physics and concepts critical for developing skills in the use of diagnostic ultrasound. This includes basic acoustical physics and acoustical waves in human tissue, ultrasound transmission in soft tissues, attenuation of sound energy, parameters affecting sound transmission, and resolution of sound beams.

- **Ultrasound cross-sectional anatomy** – Understanding of normal anatomy and physiology of the abdomen, neck, musculoskeletal, neonatal brain, non-cardiac chest using ultrasound. Also, the male and female reproductive system, obstetrics covering all trimesters, breast sonography and vascular systems as it relates to the ultrasound field.

- **Vascular sonography** – Understanding of the basic knowledge of anatomy, physiology, and pathology associated with upper and lower extremity arteries and veins, renal arteries, mesenteric arteries, and extracranial vasculature.

- **Echocardiography** – Understand specialized procedures of an echocardiogram exam, review position, transducer placement, and terminology in the clinical setting. Able to perform an adult transthoracic echocardiogram including 2D, M-mode, and Doppler hemodynamic assessment.

- **Obstetrical/neonatal sonography** – Knowledge of reproductive systems including first, second, and third trimester normal fetal and maternal anatomy as it applies to ultrasound and scanning an obstetric patient.

- **HIPAA** – Understand the Health Insurance Portability and Accountability Act of 1996 (HIPAA) for standards for electronic health record transactions, privacy, and security.

- **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 andthe study of the function of body parts and the body as a whole.

- **Transcultural care** – Ability to have a strong awareness of different cultures and cultural sensitivity with both verbal and non-verbal communications.

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.

- **Perform high quality ultrasound images** – Ability to create accurate diagnostic ultrasound images in abdominal, obstetrical, and gynecological, vascular, and breast imaging in hospital and/or clinic settings.

- **Maintain ultrasound equipment** – Able to maintain ultrasound equipment in optimum working condition to create accurate images and to optimize safety in the work environment.

- **Operate sonography equipment** – Understand how to operate sonography equipment and the use of ultrasonic imaging devices to produce diagnostic images, scans, videos or 3D volumes of anatomy diagnostic data.

- **Perform patient assessment and management** – Understand the process of identification of the condition, needs, abilities, and preferences of a patient and manage the ultrasound examination with this in mind.

- **Position patient for imaging procedures** – Ability to position a patient for taking accurate ultrasounds to view various body parts.

- **Follow standard precautions and infection control procedures** – Ability to adhere strictly to infection control protocols to protect both the patient and you. This includes regular hand washing and sanitizing equipment after each use.

- **Manage challenging situations in providing service** – Understand the need to maintain composure and handle professionally, with empathy, tact, discretion, and clarity.

- **Provide patient support** – Ability to ensure the safety and comfort of patients during ultrasound procedures, explaining the process, maintaining privacy, and providing emotional support as needed.

- **Ergonomics training** – Understand how to maintain a safe working environment through the items used and practices done to promote a productive experience.

- **Communicate and educate patient about procedure** – Understand how to inform patient about the ultrasound procedure, what will be done, and when to expect results.

- **Maintain sonography operation standards for specialty areas** – Understand the clinical standards that set forth the principles that are common to all the specialty areas within the diagnostic medical sonography profession.

- **Follow current protocols for equipment use and diagnosis** – Knowledge of up-to-date diagnostic imaging equipment, digital X-Ray imaging, and diagnostic ultrasound systems.

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