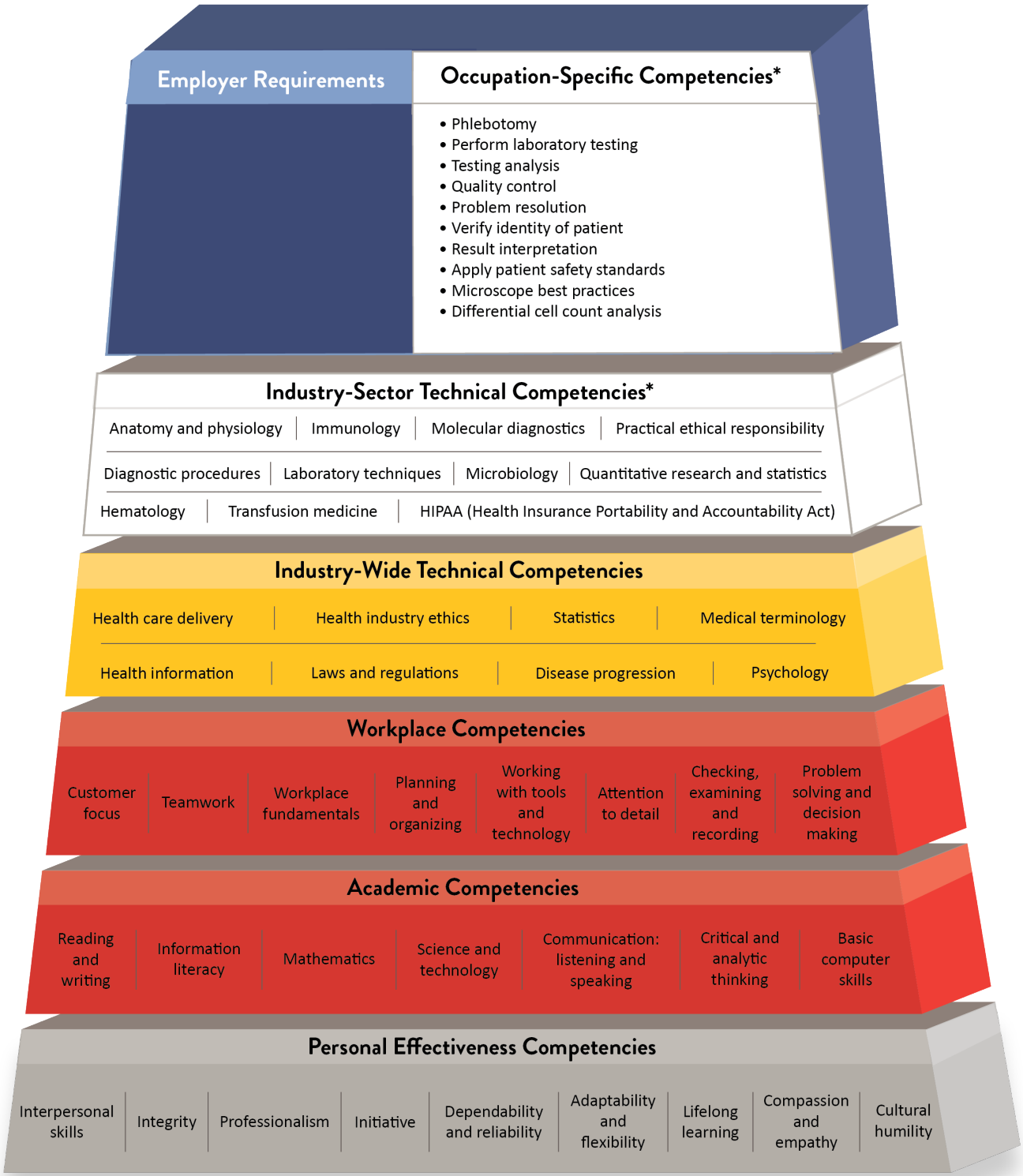
Minnesota Dual-Training Pipeline
Competency Model for Health Care Services
Occupation: Medical Laboratory Scientist



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 Medical Laboratory Scientist

Medical Laboratory Scientist – A medical laboratory scientist, also commonly known as a medical technologist or clinical laboratory scientist, works to analyze a variety of biological specimens. They are responsible for performing scientific testing on patient samples and reporting results to physicians.

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.

- **Anatomy and physiology** – Know the foundation in normal physiology, pathophysiology, histology, integumentary, skeletal, muscular, nervous, and sensory systems.

- **Hematology** – Understand the science or study of blood, blood-forming organs and blood diseases.

- **Immunology** – Understand the study of the human body's built-in defense system, which protects from infection.

- **HIPAA (Health Insurance Portability and Accountability Act)** – Understand the law that provides data privacy and security provisions for safeguarding patient medical information.

- **Diagnostic procedures** – Understand the evidence-based critical analysis and interpretation of assessments in order to provide the basis for the health care plan.

- **Laboratory techniques** – Demonstrate acts performed on patient specimens to detect biomarkers and diagnose diseases.

- **Molecular diagnostics** – Knowledge of techniques used to analyze biological markers in the genome and proteome showing the individual's genetic code and how their cells express their genes as proteins, by applying molecular biology to medical testing.

- **Transfusion medicine** – Understand a multidisciplinary science concerned with the proper use of blood or blood products in the treatment or prevention of disease.

- **Practical ethical responsibility** – Know that medical ethics allow for people, regardless of race, gender, or religion to be guaranteed quality and principles of care.

- **Quantitative research and statistics** – Understand the principles and goals of quantitative research as well as how to interpret and analyze data through statistics to reach conclusions that will serve the medical team and ultimately the patient well.

- **Microbiology** – Know the principles of study of microscopic organisms such as bacteria, viruses, fungi and more.

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.

- **Phlebotomy** – Demonstrate a procedure in which a needle is used to take blood from a vein, usually for laboratory testing.

- **Perform laboratory testing** – Understand established protocols, perform waived, moderate or highly complex testing and report results.

- **Testing analysis** – Knowledge of hematology, coagulation, microbiology, serology, immunology, immunohematology, chemistry, urinalysis, phlebotomy, and EKG.

- **Quality control** – Understand accuracy of results and knowing specimen quality and acceptability when performing and providing test analysis.

- **Problem resolution** – Know how to recognize problems and take appropriate action to resolve thos problems. Understand how to troubleshoot and take corrective action for lab procedures and unexpected events in lab operations.

- **Verify identity of patient** – Understands the requirement of two identifiers – such as the patient's full name, date of birth and/or medical identification number at every patient encounter.

- **Result interpretation** – Be responsible for complex diagnostic and therapeutic testing, and be able to act as a resource for result interpretation based on clinical knowledge and techical expertise.

- **Apply patient safety standards** – Understand the system of care delivery that prevents errors, learns from the errors that do occur and is built on a culture of safety.

- **Microscope best practices** – Know how to properly use multiple types of microscopes and how to clean and maintain them for continued use and efficiency.

- **Differential cell count analysis** – Know how to analyze cell counts to be able to look for abnormal cells in order to help determine if diseases such as anemia or leukemia are present for example.

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