



Clinical Laboratory Careers

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Sponsored by Washington State Society for Clinical Laboratory Science (WSSCLS)



Who Will Care For You????

- ◆ WA State Hospital Association
 - Published a report showing the state's health care delivery system is facing an emerging *public health crisis*
 - The shortage affects all health care disciplines (many think only of a nursing shortage...but that is because nurses are a large group)



Definition of Terms

- ◆ Clinical Laboratory Scientist (CLS); aka Medical Technologist (MT)
- ◆ Clinical Laboratory Technician (CLT); aka Medical Laboratory Technician (MLT)



Scope/size of Profession

- ◆ Third largest group of health professionals: estimates are that there are approximately 288,000* working in clinical laboratories alone (does not include those working in industry)
- ◆ Only two health care professions with larger numbers of practitioners are physicians and nurses

* US Department of Labor Statistics
<<http://stats.bls.gov/?uniq=8242>>



Laboratory Scientist Careers

- ◆ Technical positions
- ◆ Non-technical, health care-related positions
- ◆ Education
- ◆ Research
- ◆ Management, administration and supervision
- ◆ Industrial and commercial positions
- ◆ Military & government



Laboratory - Technical Positions

- ◆ **Hospitals**
- ◆ **Private laboratories**
- ◆ **Public health labs**
- ◆ **Physicians' office labs**
- ◆ **Veterans' hospitals**
- ◆ **Crime labs**
- ◆ **Research & development**
- ◆ **Biotechnology**
- ◆ **Pathology assistant**
- ◆ **Health maintenance organizations (HMOs)**
- ◆ **Flow cytometry**
- ◆ **Transplant services**
- ◆ **Blood Banks - ARC**
- ◆ **Veterinary medicine**
- ◆ **Humanitarian agencies**
 - **Project HOPE**
 - **Peace-Corp**



Non-technical Positions

- ◆ **Inspectors**
- ◆ **Infection control officer**
- ◆ **Quality Assurance Director**
- ◆ **Director of Safety**
- ◆ **Waste Control officer**
- ◆ **Director of Laboratory
Marketing**
- ◆ **Office consultant**
- ◆ **Office manager**
- ◆ **Management**
- ◆ **Information Specialist**
 - **computers, quality assurance or
LIS coordinator**
- ◆ **Lab Billing
Specialist**



Quality of Health Care is our Top Priority

- 85% of physician decisions regarding patient Diagnosis and Therapy are based on clinical laboratory test results!
 - Baby boomer generation high numbers
 - At the age where MORE lab tests are ordered
- According to US Bureau of Labor Statistics 5,300 new clinical laboratory positions occur each year
- The average age of the laboratorian is 49; retirement will create another 4,000 positions
- Thus a total of 9,300 positions needed annually



Quality of Health Care is our Top Priority (cont.)

- CLS/CLT programs in US produce 4,800 graduates
- This is a shortfall of 4,500 lab positions
- It will only get worse as baby-boomers need more health care and more laboratorian's retire!



What it Takes To Be a Clinical Laboratory Professional

- ◆ **Be a problem solver**
- ◆ **Accept challenge and responsibility**
- ◆ **Be accurate and precise**
- ◆ **Be reliable and emotionally stable**
- ◆ **Be able to work well under pressure**
- ◆ **Like microscope work**
- ◆ **Like sciences**
- ◆ **Able to multi-task and complete tasks on time**
- ◆ **Communicate well, both in writing and verbally**
- ◆ **Set high personal standards and expect quality in one's work**
- ◆ **Like to work with automated instruments**



Over-all Organization of Pathology/Laboratory Medicine

- ◆ Anatomic pathology
- ◆ Clinical pathology (aka "laboratory medicine")



Medical Lab Careers

- ◆ Anatomic division of Lab
 - Pathologist MD
 - Pathology Assistant - PA
 - Cytotechnologist - CT
 - Histotechnologist - HLT
 - Histotechnician - HT



Medical Laboratory Careers

- ◆ Clinical division of the Lab
 - Clinical Laboratory Scientist - CLS
 - Clinical Laboratory Technician - CLT
 - Phlebotomist - PBT / Laboratory aide



Medical Technologist/ Clinical Laboratory Scientist

- ◆ Bachelor's degree in sciences
- ◆ One year clinical training
- ◆ NCA(CLS) and/or MT(ASCP) certifying exam
- ◆ Work in many settings
- ◆ Can supervise section of lab or become lab manager



Clinical Laboratory Technician/ Medical Laboratory Technician

- ◆ One year course work in sciences
- ◆ One year clinical training
- ◆ AA or AS degree
- ◆ NCA (CLT) and/or MLT(ASCP) certifying exam
- ◆ Work in many settings under supervision of Medical Technologist



Pathology Assistant

- ◆ Bachelor's degree in the sciences
- ◆ Two year pathology assistant program
- ◆ AAPA exam / Master's degree
- ◆ Assist pathologist in gross anatomy
- ◆ May oversee Histology department



Cytologist

- ◆ Bachelor's degree in the sciences
- ◆ One year cytotechnology program
- ◆ CT(ASCP) certifying exam
- ◆ Screening Pap smears & other body fluids for cancer cells



Histotechnician and Histotechnologist

- ◆ One year course in college
- ◆ One year clinical training
- ◆ AA or AS degree
- ◆ HT(ASCP) certifying exam
- ◆ With BS degree can be histotechnologist
HTL(ASCP)
- ◆ Work with tissue specimens
- ◆ Embed, cut, stain, assist pathologist



Phlebotomist/Lab aide

- ◆ HS diploma
- ◆ 3-6 month phlebotomy program
- ◆ Encouraged to take NCA(**CLPIb**) and/or ASCP(PBT) certifying exam
- ◆ Collect patient samples, especially blood
- ◆ Perform waived lab tests



Other Areas of the Clinical Laboratory for Entry Level Workers

- ◆ Specimen Processing
- ◆ Lab Aide
- ◆ Receptionist
- ◆ Data Entry



Medical Laboratory Careers

- ◆ A career that combines science and medicine
- ◆ Can work in a variety of settings
 - in-patient
 - out-patient
 - all shifts
- ◆ Employable throughout the US and the world
- ◆ Can use as a stepping stone to other careers



General Curriculum in Laboratory Science Programs

- ◆ High School Diploma
- ◆ College - general education courses
- ◆ Science Prerequisites
 - chemistry
 - biology
 - math
- ◆ Clinical training – Internship – Practicum in real laboratory settings



CLS/CLT Lab Curriculum

- ◆ **Hematology** – study of cellular elements of the blood
- ◆ **Coagulation** - study of blood clotting
- ◆ **Urinalysis** - study of urine and its constituents
- ◆ **Immunology & Serology** – study of antibodies and antigens
- ◆ **Immunoematology** – study of transfusion and transplantation laboratory medicine; e.g, blood group typing and cross matching of blood; tissue typing; safety/compatibility issues with blood products and transplanted tissue/organs



Curriculum continued

- ◆ **Clinical Chemistry** – Study of chemical tests and specific diseases
- ◆ **Clinical Microbiology** – Study and isolation of microorganisms that cause disease
 - Bacteriology - bacteria
 - Mycology - yeast and molds
 - Parasitology - protozoans and helminths
 - Virology - viruses



Types of Sites Used for Practical Training

- ◆ **Acute care hospital laboratories**
- ◆ **Rural hospital labs**
- ◆ **Student health center laboratories**
- ◆ **Large reference labs**
- ◆ **State or county public health laboratories**
- ◆ **Military hospitals**
- ◆ **Large physician office labs (POLs)**
- ◆ **Clinics**
- ◆ **Ambulatory care centers (Well Patient Out Patient Centers)**



National Certification Exams

- ◆ Exams given throughout the nation using computer technology
- ◆ Allow graduates from any program to work throughout the world
- ◆ Agencies administering exams:
 - American Society for Clinical Pathology
 - **ASCP**
 - National Credentialing Agency
 - **NCA**



Washington Laboratory Personnel Salary Survey

- ◆ Recent statewide survey sponsored by laboratory administrators
- ◆ Sample was small (18) but was representative of all areas of the state
- ◆ Fact:
 - With the severe shortage of workers, many jobs are offered to students before they graduate
 - Salaries may increase with “supply and demand”
 - Many providing sign on bonuses/relocation fees



Washington Laboratory Personnel Salary Survey continued

Job Title	Mean Salary Range
◆ CLS/MT	◆ \$33,197 - 44,034
◆ CLT/MLT	◆ \$27,144 – 36,816
◆ HT	◆ \$28,018 – 34,694
◆ CT	◆ \$37,690 – 52,063
◆ Average Benefit Package (%over salary)	◆ 30.2%
◆ Evening Shift differential	◆ \$1.33 / hour
◆ Night shift differential	◆ \$2.11 / hour



*CEO PAML – Pathology Associates
Medical Laboratory, Spokane, WA*

“Many students perceive they will make more money in hi-tech careers. In the clinical laboratory, graduates may face working nights, weekends and holidays.

However, job availability is GOOD and good employment is guaranteed. Wages are increasing with the shortages and diverse opportunities are plentiful with sign-on and retention offers. This is a good way to offset student loans. Being an applicant during times of shortages has its advantages.”



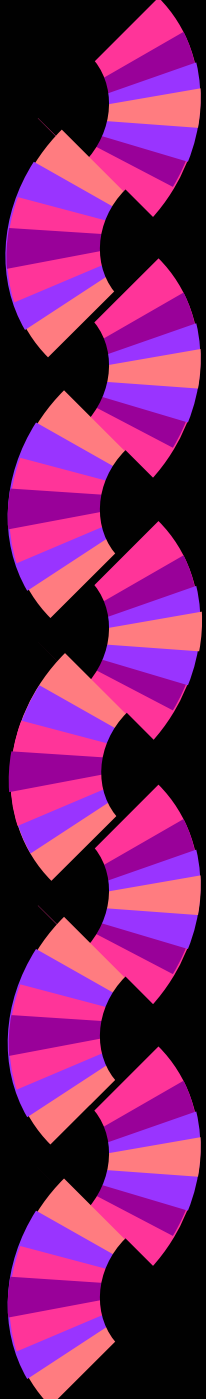
Lab Manager - Yakima Valley MH

“The US, Washington State and Yakima Valley are facing a severe shortage of health care professionals. Part of the problem is that students are not entering these fields of study. The challenge before us is to encourage young people to enter into health careers in order to avoid a national health care crisis in the next 5-10 years.”



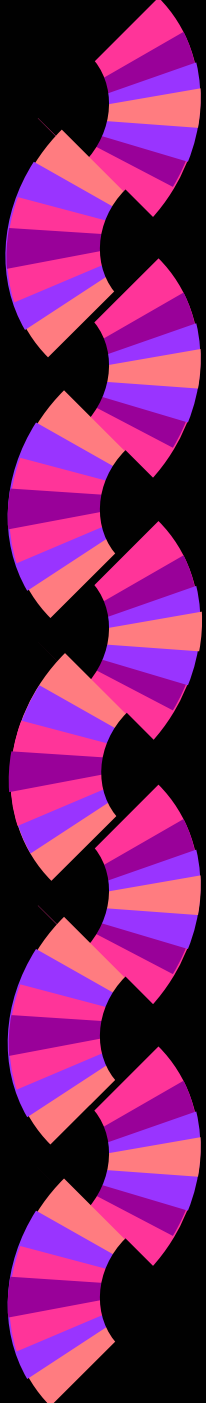
Island Hospital, Lab Manager

“Lab personnel are vanishing! Although the work is stressful, this field offers interesting rewards. One needs to realize you are helping others and are considered an important part of the health community. Laboratory workers have the respect of doctors, nurses and other hospital employees.”



Medical Technology/Clinical Laboratory Scientist Programs in Washington State

- ◆ **University of Washington - Seattle**
 - 2 years pre-requisite college course work
 - 2 years student lab/clinical lab experience
 - Obtain BS in Medical Technology
- ◆ **Central Washington University - Yakima**
 - 3 - 4 years pre-requisite college course work
 - 1 year student lab/clinical lab experience
 - Obtain BS
- ◆ **Sacred Heart Medical Center - Spokane**
 - Bachelor's degree required
 - 1 year student lab/clinical lab experience
 - Obtain Certificate of successful completion



Medical Laboratory Technician/Clinical Laboratory Technician Programs in Washington State

- ◆ Shoreline Community College, Seattle
 - 2 year Associate Degree in MLT
- ◆ Wenatchee Valley College, Wenatchee
 - 2 year Associate Degree in MLT
- ◆ Clover Park Technical College, Tacoma
 - Certificate Degree (one year)



*See Our Lab Careers Brochure on
the Internet*

www.labcareers.org

All six Laboratory Science Programs
in Washington have access via
the Internet

Contact Any Program Director Anytime

CLS/MT

Central WA University:

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