A 60-MINUTE CAREER EXPLORATION SESSION

# Behind Every Diagnosis

## Discovering Careers in Medical Laboratory Science

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Vice President, Clinical Operations/Chief Safety Officer

WHERE WE'RE HEADED

# Today's Roadmap

01

## The Invisible Engine

What medical laboratory science actually is

02

## Careers Behind the Bench

The many jobs hiding inside one lab

03

## Your Path

Classes, credentials, and how to get there from here

04

## Why This Field Needs You

Opportunity, pay, and ways to get involved now

# You Have Already Met a Lab Professional — You Just Never Saw Them

**70%**

of medical decisions are informed by laboratory test results*

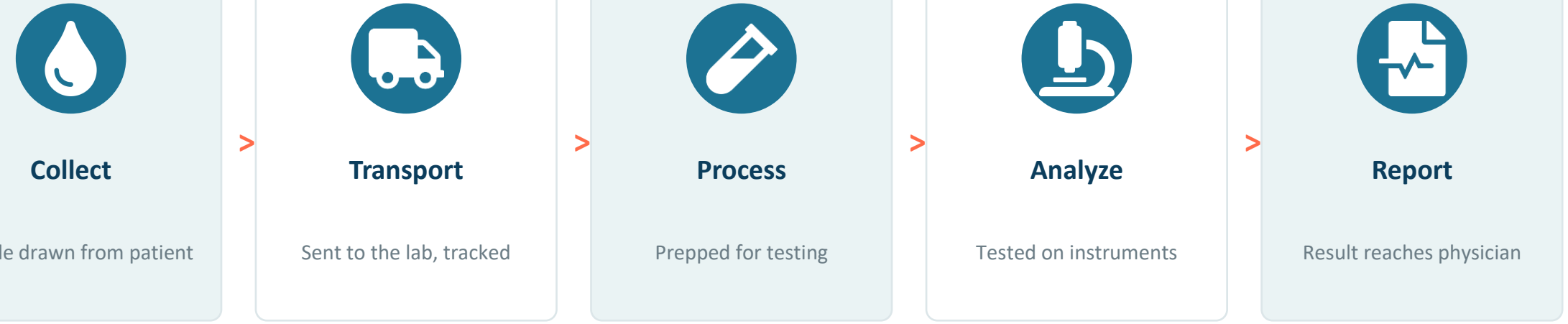
**~2-3%**

of a typical hospital budget is spent on the lab that drives it


** Widely cited across pathology and laboratory medicine literature; treat as a well-known industry figure rather than a single precise study result.*

# Turning a Sample Into an Answer

Medical laboratory science (also called clinical laboratory science) is the branch of healthcare that analyzes blood, tissue, and other body fluids to help diagnose disease, guide treatment, and monitor patient health — usually without the patient ever meeting the person doing the work.



BEYOND THE HOSPITAL BASEMENT

# Where This Career Can Take You

### Hospitals & Health Systems

Like TidalHealth — 24/7 diagnostic labs

### Reference & Commercial Labs

Quest, Labcorp, and regional labs

### Public Health Labs

Outbreak tracking, disease surveillance

### Forensic & Crime Labs

DNA evidence, toxicology

### Blood & Donor Centers

Collecting and matching donated blood

### Biotech, Pharma & Research

Drug trials, vaccine development

PART 2 OF 4

# Careers Behind the Bench

One lab, a dozen different jobs — and none of them require you to like the sight of blood the way you might think.

INSIDE THE LAB

# The Departments That Make Up a Lab

### Hematology

Blood cell counts & clotting

### Chemistry

Organ function, glucose, lipids

### Microbiology

Growing & identifying infections

### Blood Bank

Transfusions & compatibility

### Molecular Diagnostics

DNA, genetics, infectious disease

### Histology

Preparing tissue for diagnosis

### Cytology

Screening cells for cancer

### Point-of-Care

Bedside & rapid testing

MANY ENTRY POINTS, ONE FIELD

# Pick Your Level of Entry

### Phlebotomist

**Certificate**

*Weeks – 6 months*

Draws blood, first patient contact point

### Lab Technician (MLT)

**Associate's Degree**

*2 years*

Runs routine testing across departments

### Lab Scientist (MLS/CLS)

**Bachelor's Degree**

*4 years*

Full scope testing, complex cases, oversight

### Specialist / Leader

**Certification or Grad Degree**

*+2-5 years experience*

Blood bank specialist, manager, director

SPOTLIGHT

# Medical Laboratory Scientist

*The generalist who can work anywhere in the lab*

- Runs and verifies complex tests across chemistry, hematology, microbiology, and more
- Catches results that don’t add up and flags critical values to physicians immediately
- Bachelor’s degree + national certification (MLS)
- The backbone credential most hospital labs are built around

SPOTLIGHT

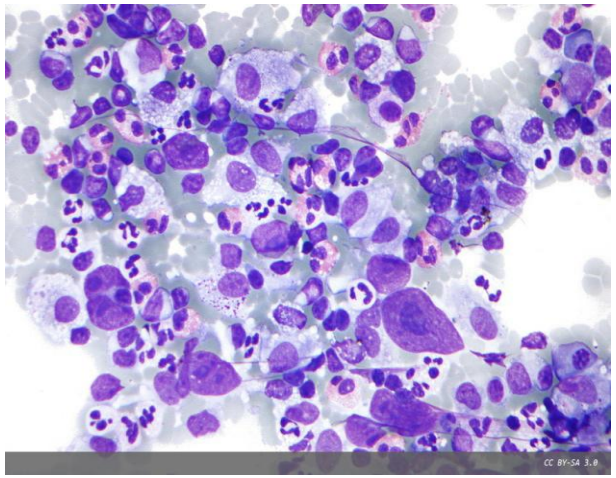
# Histotechnologist & Cytotechnologist

*The cancer detectives*

FIELD

## Anatomic Pathology

- Prepare paper-thin tissue slices and stain cells so a pathologist can see cancer under a microscope
- Cytotechnologists personally screen thousands of Pap smears and other cell samples for early cancer signs
- Directly connected to biopsy results — some of the highest-stakes diagnoses in medicine
- Great fit for students who love detail work and pattern recognition



SPOTLIGHT

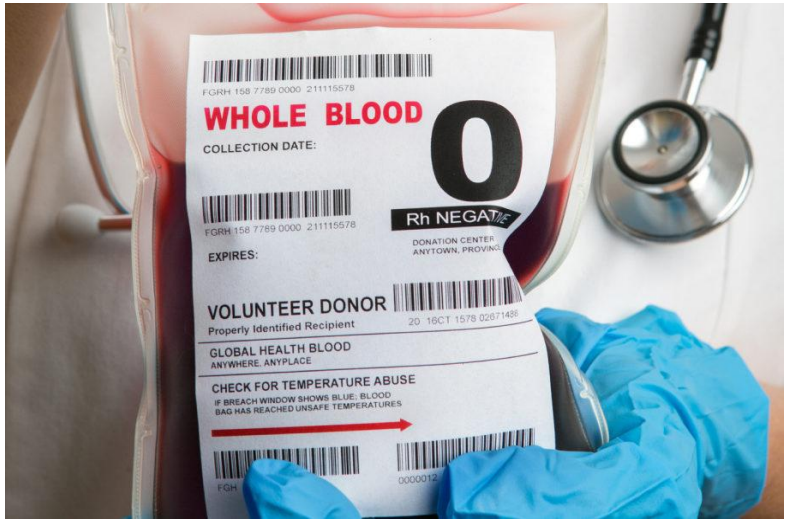
# Blood Bank / Transfusion Medicine

*The lifesavers, one bag at a time*

STAKES

## Zero Margin for Error

- Matches donated blood to patients before every transfusion, surgery, and trauma case
- A mismatch can be fatal — this job demands extreme precision under time pressure
- Central to trauma centers, cancer treatment, NICUs, and surgery
- Can specialize further into a Blood Bank Specialist (SBB) credential



SPOTLIGHT

# Molecular Diagnostics & Genetics

*The code breakers*

FIELD

## Genomics & Precision Medicine

- Uses DNA and RNA testing (PCR, gene sequencing) to detect infections, cancer mutations, and inherited disease
- The technology behind rapid COVID testing, cancer genomic panels, and prenatal screening
- The fastest-growing, most tech-forward corner of the lab
- Strong overlap with biotech, pharma, and genetic counseling careers

# Leadership & Tech Career Paths

### Lab Manager / Director

Runs operations, budgets, and staffing for a department or whole lab

### Laboratory Informatics / IT

Builds the software connecting instruments, results, and medical records

### Point-of-Care Coordinator

Oversees rapid bedside testing across an entire hospital

### Educator / Clinical Instructor

Trains the next generation of lab professionals

### Pathologists' Assistant

Assists physicians with autopsies and surgical specimens (Master’s degree)

### Quality & Compliance Officer

Keeps the lab accurate, accredited, and audit-ready

PART 3 OF 4

# Your Path: How to Prepare

What to do this year, next year, and after graduation to make this career possible.

STARTING NOW

# What You Can Do in High School

- Load up on Biology, Chemistry, Anatomy & Physiology, and Statistics/Math
- Join HOSA (Health Occupations Students of America) or a Science Olympiad team
- Ask about job-shadow days or volunteer hours at a local hospital lab
- Talk to your school counselor about dual-enrollment science credit

**TidalHealth can help**

Ask your teacher or counselor about setting up a lab tour, a job-shadow morning, or a mentor conversation with a TidalHealth lab professional — seeing the real space changes minds fast.

AFTER HIGH SCHOOL

# Two Roads Into the Lab

## MLT — Medical Laboratory Technician

***Associate's degree · ~2 years***

- Faster, lower-cost entry into a real diagnostic career
- Choose a community college with a NAACLS-accredited MLT program
- Sit for the ASCP certification exam after graduating
- Start earning while you decide if you want to go further

## MLS — Medical Laboratory Scientist

***Bachelor's degree · ~4 years***

- Broader scope of practice and typically higher starting pay
- Choose a NAACLS-accredited MLS/CLS program (often with a clinical rotation year)
- Sit for the ASCP MLS certification exam after graduating
- Best fit if you know you want leadership or specialist roles later

*Many students start MLT, work in a lab, then "bridge" into an MLS degree part-time while employed.*

# Certification: The Credential That Opens Doors

- After finishing an accredited program, graduates sit for a national certification exam through the ASCP Board of Certification (the field's primary credentialing body)
- Passing earns a credential like MLS(ASCP) or MLT(ASCP) — the letters most employers require to hire you
- Additional specialist certifications exist for Blood Banking, Microbiology, Chemistry, Hematology, Molecular Biology, and more
- Some states also require a separate state license to practice

**Good news**

If your degree is from an accredited program, the exam covers material you'll already have practiced constantly in clinical rotations — it's a checkpoint, not a surprise.

WHAT MAKES SOMEONE GOOD AT THIS

# Skills That Matter More Than a Perfect GPA

### Attention to Detail

A transposed number can change a diagnosis

### Calm Under Pressure

Trauma and stat results don’t wait

### Curiosity

Every sample is a small mystery to solve

### Comfort With Technology

Modern labs run on automation & software

### Teamwork

You work in a chain with nurses & doctors

### Integrity

You report the truth, even when it’s inconvenient

# Investing in Your Future

- Look for laboratory-specific scholarships through ASCLS, ASCP, and individual college programs
- Many hospital employers offer tuition assistance or loan repayment for staff pursuing an MLT/MLS degree
- "Grow-your-own" pipelines exist: some hospitals sponsor students in exchange for a work commitment after graduation — ask if TidalHealth offers this
- Community-college MLT tuition is a fraction of a typical 4-year degree, with strong starting wages relative to the cost

PART 4 OF 4

# Why This Field Needs You

The honest case for choosing lab science — plus how to get involved before graduation.

# A Shortage Is an Opportunity for You

**7.2%**

average lab vacancy rate nationwide (ASCLS)

**< 50%**

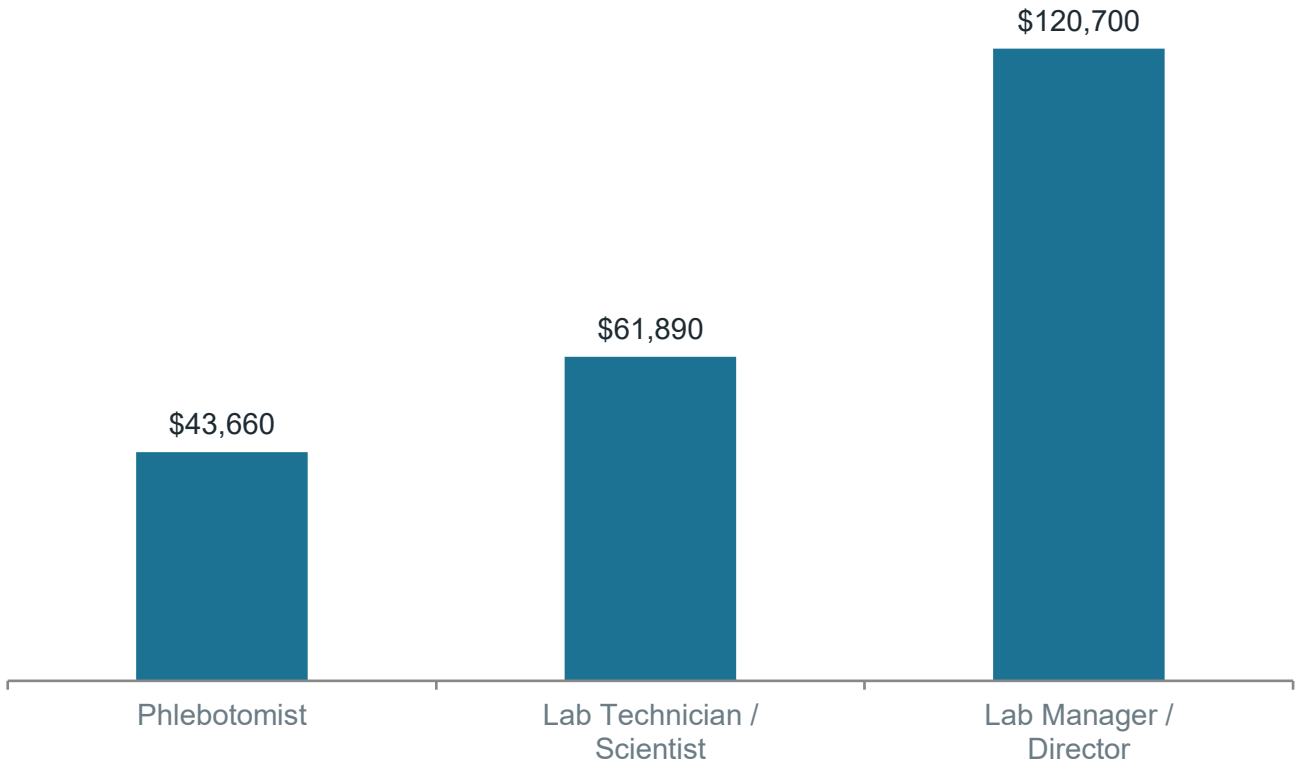
of needed graduates are currently being produced each year (ASCLS)

**22,600**

annual U.S. job openings projected for lab technologists & technicians (BLS)

*Translation: hospitals across the country — including right here — are actively hiring for these roles, with strong job security and clear paths to promotion.*

# Pay Grows With Experience & Credential




- Figures are national medians and vary by region, shift, and employer
- Pay typically rises with each credential earned (MLT → MLS → Specialist → Manager)
- Many labs run 24/7, offering shift differentials and flexible scheduling
- This is stable, indoor, largely recession-resistant work — people always need diagnoses

THE INVITATION

# Come See the Lab for Yourself

### Job Shadow Day

Spend a morning inside the TidalHealth lab

### Summer Exploration/Volunteer Program

Hands-on activities for students considering health careers

### Ask Me Anything

Reach out with questions — about school, this job, or anything in between

*Talk to your teacher or counselor to set something up — or ask me directly today.*

# Questions?

Thank you for exploring medical laboratory science with us today.

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