


VANDERBILT  UNIVERSITY
MEDICAL CENTER
DIAGNOSTIC LABORATORIES

Laboratory Scope of Service

GOAL

The primary goal of the Diagnostic Laboratories is to provide reliable and timely laboratory services, to assist providers in appropriate use of laboratory testing, and to present laboratory results in a manner that facilitates patient care. To accomplish this goal, laboratory testing is provided through the Clinical Pathology Laboratory (the Vanderbilt Clinic) and the Anatomic Pathology Laboratory, (the Vanderbilt Clinic, VUH, and Medical Center North) for patients in the Vanderbilt University Hospital (VUH), Monroe Carell Jr Children's Hospital at Vanderbilt (MCJCHV), and Vanderbilt Health. Testing is also performed in the Cytogenetics, Genomics, and Rapid Response Laboratories in the One Hundred Oaks (OHO) Facility and at the Vanderbilt Health Belle Meade Diagnostic Laboratory.

DEPARTMENTS SERVED

The Diagnostic Laboratories service all hospital in-patient units and on-site ambulatory clinics within the VUMC clinical enterprise. The laboratories also provide laboratory testing for external clients (primarily hospitals) through Vanderbilt Pathology Laboratory Services (VPLS), the laboratory outreach service of the Department of Pathology, Microbiology, and Immunology. The academic Medical Center delivers both routine inpatient and highly specialized medical treatment and surgical care and is supported by medical and nursing schools. It has the region's only Level One Trauma Center and Level IV Neonatal Intensive Care Unit, a pediatric emergency department, a comprehensive cancer center, a transplant center, and a burn center. The Clinical Laboratories also support the VUMC Allied Health Program of Medical Laboratory Science. The Point-of-Care Testing (POCT) service supports testing at the point of service performed by non-laboratory personnel across both hospitals and Vanderbilt Health. The Cytogenetics and Genomics Laboratories provide testing for the entire enterprise, while the OHO Rapid Response Laboratory provides testing for OHO clinics and VPLS outpatients.

SCOPE AND COMPLEXITY

The Laboratories offer a full range of anatomic and clinical laboratory services to meet the needs of the tertiary care facility. A complete listing of tests performed is available on the VPLS website, www.labvu.com.

Anatomic Pathology services include:

Autopsy Service

Cytopathology (gynecologic and non-gynecologic)

Electron Microscopy

Hematopathology

Histopathology (including processing, staining, and immunohistochemical staining)

Neuropathology (including enzyme histochemistry staining of muscle biopsies)

Pediatric Pathology

Renal Pathology (including immunofluorescent staining)

Surgical Pathology (including grossing, frozen section analysis and pathology consultations)

Pathology Support

Clinical Pathology services include:

Blood Bank/Transfusion Medicine (full-service hospital transfusion service)

Core Laboratory (including general chemistry, hematology, urinalysis, and coagulation)

Special Chemistry (including toxicology and therapeutic drug monitoring)

Esoteric Coagulation

Flow Cytometry

Microbiology (includes mycobacteriology and mycology)

Molecular Diagnostics

Molecular Infectious Disease

Virology/Immunology

Outpatient Phlebotomy Services

Support for Point-of-Care Testing (includes waived and moderate complexity testing, testing performed in the hospitals and off-site clinics)

Cytogenetics Laboratory (OHO)

Clinical Genomics (OHO)

Support Services

Satellite laboratories: VUH Emergency Department Laboratory, Adult and Pediatric Hematology Oncology Laboratories, OHO Rapid Response Laboratory, Belle Meade Diagnostic Laboratory

Some highly specialized or infrequently performed tests are performed in reference laboratories. Criteria for selecting reference laboratories include clinical need, testing accuracy and reliability, test methodology, turnaround time (TAT) requirements, and cost efficiency.

LEVEL OF SERVICE PROVIDED

The main campus Diagnostic Laboratories and satellite laboratories occupy approximately 35,000 square feet and the principal laboratories operate 24-hours-a-day, 7-days-a-week to provide

accurate, timely test results to support physicians in the assessment of our patients. The extensive laboratory test menu reflects the specialized services/programs at VUMC and the Laboratories' commitment to meeting the clinical needs of our patients. Each laboratory has a pathology laboratory director, and each anatomic and clinical laboratory section has a section medical director with expertise in that specialty. Residents and attending pathologists are available 24-hours-a-day, 7-days-a-week for consultation and/or interpretations of test results for laboratory testing performed on-site or referenced to an outside laboratory.

The laboratories' performance improvement efforts are focused on achieving excellence in service and quality, while also achieving greater efficiency. The Diagnostic Laboratories have established target levels of service:

- Routine Core Laboratory test procedures should be completed within two hours from receipt in the laboratory
- STAT procedures (not batched or involving extensive confirmatory work) should be completed within one hour from receipt in the laboratory
- Blood gases should be completed within thirty minutes from time of collection.
- STAT crossmatched blood products should be issued within 15 minutes from request receipt in Blood Bank, as long as the patient has a current type and screen and the antibody screen is negative.
- Single specimen, uncomplicated interoperative (frozen section) diagnoses should be issued within 20 minutes of receipt in the laboratory.
- Routine biopsy cases should be reported within two days and non-biopsy cases within five days.
- Preliminary autopsy reports should be produced within two days and final reports within sixty days.

When optimal turn-around-time cannot be achieved from the main laboratory, testing may be supported at the point of service. For example, the Core Laboratory supports Respiratory Care to provide immediate blood gas testing on-site in most patient critical care areas and the Point-of-Care Testing (POCT) staff support blood glucose testing and other laboratory tests house- wide.

The Diagnostic Laboratories are supported by an independent laboratory information system (LIS) with Cerner Millennium, CoPath, and Soft Bank components. LIS systems are interfaced to the EPIC electronic medical record for order entry and results reporting. The Laboratories collaborate with Health IT (software) and VUMC IT (hardware) departments to integrate laboratory functions and information into the VUMC enterprise electronically.

The Laboratory Formulary Committee promotes cost-effective medical care and protects the patient from the cost and possible consequences of inappropriate or unnecessary laboratory testing. The Committee fosters effective test utilization by reviewing tests with little clinical utility, high-utilization reference lab tests, high-cost reference lab tests, and new tests considered for implementation before the tests are put into place.

STAFFING :

The Diagnostic Laboratories are staffed, according to workload requirements, with approximately 412 total FTEs, excluding faculty, fellows, and residents.

STANDARDS/GUIDELINES FOR SERVICE:

The Diagnostic Laboratories are accredited by the College of American Pathologists (CAP) the American Association of Blood Banks (AABB) and licensed by the State of Tennessee. In addition, the Food & Drug Administration (FDA) inspects the Transfusion Services. The laboratories meet all State and federal CLIA guidelines. Point-of-care testing meets the requirements of the Tennessee Medical Laboratory Board. Reference laboratory testing in disciplines covered by CLIA is performed by CLIA-certified laboratories or equivalent.

ASSESSMENT /PLANNING:

Input regarding VUMC laboratory services is provided by multiple sources:

- Provider interaction with Medical Directors and other staff.
- Participation and collaboration of laboratory representatives on multidisciplinary teams throughout the hospital and clinics.
- Monthly laboratory clinical and anatomic quality improvement meetings where medical and operational leadership discuss performance on quality indicators, improvement actions, and other quality-related issues.
- Daily meetings to review VERITAS reports with clinical impact, focusing on corrective actions and process changes to prevent reoccurrence.
- VPLS outreach program and information received from outside clients regarding VUMC laboratory services and external market forces.