



## Clinical Microbiology

Betty A. Forbes, PhD  
Professor of Pathology  
Director of Clinical Microbiology

**Office:** (804) 828-3494;

**E-Mail:** [bforbes@mcvh-vcu.edu](mailto:bforbes@mcvh-vcu.edu)

**Graduate School:**

University of Oklahoma Health Sciences Center

**Clinical Specialties:**

Clinical Microbiology, Infectious Diseases



## Clinical Pathology

Richard A. McPherson, MD  
Chair of the Division of Clinical Pathology  
Director of Clinical Pathology Services  
Harry P. Dalton Professor of Pathology

**Office:** (804) 828-5389; **FAX:** (804) 828-6156;

**E-Mail:** [rmcpherson@mcvh-vcu.edu](mailto:rmcpherson@mcvh-vcu.edu)

**Medical School and Residency:**

University of California at San Diego

**Fellowship:** National Institutes of Health

**Clinical Specialties:**

Clinical Chemistry, Microbiology, Hematology and Immunology

The banner features the VCU Department of Pathology logo at the top left, which includes a microscope icon. To the right of the logo, the text reads "VCU Department of Pathology" in a large, bold font. Below this, smaller text provides contact information: "Pathology Laboratories Client Services (p) 800-363-9234 (f) 804-628-8724" and "Virginia Commonwealth University". The central part of the banner is a collage of images: a black LightCycler PCR machine, a petri dish with a red agar culture showing bacterial growth, and a computer monitor displaying a PCR gel electrophoresis image. On the right side, there is a map of Virginia with a red star in the center, surrounded by concentric circles, and the text "Reaching out to Central Virginia". The bottom of the banner has a blue bar with the text "MRSA by PCR" in white, bold letters. The background of the banner is decorated with a DNA double helix and a molecular structure.

# Announcing MRSA Screen by DNA Amplification(PCR)

## QUICK REFERENCE:

Timely and sensitive detection of Methicillin Resistant *Staphylococcus aureus* (MRSA) are crucial for implementation of infection control measures to limit the spread of this pathogen.

## BACKGROUND:

MRSA accounts for about 60% of *S. aureus* isolates recovered from patients admitted to the intensive care unit in the U.S. In recent reports, MRSA caused 4.6% to 19% of health care-associated bloodstream infections and a meta analysis suggested a significantly higher mortality for MRSA bacteremia compared with methicillin-susceptible *S. aureus* bacteremia. Although MRSA has been a traditionally a nosocomial pathogen, over the past few years, MRSA has emerged as an important cause of community-associated (CA) infections in both pediatric and adult populations; these CA-MRSA infections have occurred in the absence of health care-associated risk factors traditionally associated with MRSA infections. Of significance, MRSA bacteremias result in at least a 3-fold increase in relative cost and a 3-fold excess length of hospital stay. Thus, timely and sensitive detection of MRSA are crucial for implementation of infection control measures to limit the spread of this pathogen. Detection of MRSA by DNA real-time amplification has been instituted by many hospital institutions with a growing subgroup of hospitals who are using this technology to screen all patients admitted for the presence of MRSA.

## ASSAY PERFORMANCE:

Based on data from this institution and other published studies, this MRSA screening method has a greater than 90% sensitivity and specificity when compared to culture and has a significantly faster turn-around time. Of significance, this assay has a 97.% negative predictive value when compared to culture-based methods and provides same-day results, thereby allowing for more efficient use of infection control resources to control MRSA in healthcare facilities.

## For More Information:

### Sample Pickup or Ordering Questions:

Client Services 804-828-7284 or 800-363-9234

### Microbiology Director and Technical Consultation:

Betty Forbes, PhD - Office: 804-828-9564

E-mail: [bforbes@mcvh-vcu.edu](mailto:bforbes@mcvh-vcu.edu)

### To Set up Account for Testing:

Brenda Hunt, BSMT(ASCP) Office: 323-2965

E-mail: [bhunt@mcvh-vcu.edu](mailto:bhunt@mcvh-vcu.edu)

## ASSAY SPECIFICS:

**Name:** MRSA Screen by DNA Amplification

**CPT Code:** 87798 (amplified probe)

**Laboratory:** Microbiology

**Availability:** Samples accepted daily and performed Sunday—Friday

**Related Information:** Screen for Methicillin Resistant *Staphylococcus aureus* (MRSA) only. For additional pathogens consider other appropriate culture or tests.

**Synonyms:** MRSA PCR

**Test Commonly Includes:** Screening assay for MRSA using Real Time PCR.

**Turnaround Time:** 24 hours

**Specimen:** Nares- left or right or Nostrils- left or right

**Container:** Liquid Stuarts Swab transport (white capped) manufactured by Becton Dickinson. Swabs are available from VCUHS if needed.

**Collection:** 1. Insert sterile swab (premoistened with sterile saline) into the nose until resistance is met at the level of the turbinates (approximately 1 inch into nose).  
2. Rotate swab against the nasal mucosa.

**Usual number of specimens and times to be sent:** 1 specimen/day up to 3.

**Storage Instructions:** Transport in ≤24 hr at room temperature. Storage conditions if transport time will be exceeded: Refrigerate at 2-8°C.

**Methodology:** Real Time PCR

## HOW TO ORDER:

- Contact Client Services at 804-828-7284 or 800-363-9234 for specimen pickup.
- Complete test requisition. Write in test order MRSA by PCR.

## TRANSLATING RESULTS INTO CARE

**POSITIVE RESULTS:** Methicillin-resistant *Staphylococcus aureus* detected by DNA Amplification.

**NEGATIVE RESULTS:** No methicillin-resistant *Staphylococcus aureus* detected by DNA Amplification.

**INVALID RESULTS:** Rarely, results will be INVALID using the molecular assay due to the presence of inhibitors in the clinical specimen. Because of the manner in which this assay was developed, culture results will be subsequently available. Results of these specimens with an invalid molecular result will be reported as follows:

- Invalid molecular result and culture positive for MRSA: "Unable to report amplification results due to presence of inhibitors in the clinical specimen. Methicillin-resistant *Staphylococcus aureus* seen on culture."
- Invalid molecular results and culture-negative for MRSA: "Unable to report amplification results due to presence of inhibitors in the clinical specimen. No methicillin-resistant *Staphylococcus aureus* seen on culture."