

September 2023

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The California Department of Public Health (CDPH) Immunization Branch and Microbial Diseases Laboratory (MDL) request submission of all *Neisseria meningitidis* isolates obtained from normally sterile sites for confirmation and serogrouping. Culture-negative specimens from patients for whom there is a high clinical suspicion of meningococcal disease should also be submitted for PCR testing.

## Criteria for high clinical suspicion

The criteria for high clinical suspicion are dependent on clinical assessment, but may include such clinical or laboratory findings as:

- clinically suspected meningitis with fever, headache, neck stiffness, or altered mental status
- petechial or purpuric rash with:
  - fever; or
  - suspected meningitis; or
  - septic shock
- purpura fulminans
- CSF or blood test results:
  - *N. meningitidis* antigen in CSF; or
  - gram-negative diplococci seen on Gram stain of CSF; or
  - *N. meningitidis* growing from blood or CSF specimens
- CSF laboratory abnormalities suggestive of bacterial meningitis, such as:
  - Low glucose (<34 mg/dL)
  - Elevated protein (>220 mg/dL)
  - Elevated total neutrophil count (>1180 cells/uL)
  - Elevated total leukocyte count (>2000 cells/uL)

Please note: meningococcal disease can still be present with lab values less extreme than these, including in patients who have received recent antibiotic treatment.

## Serogrouping, molecular subtyping and antimicrobial susceptibility testing (AST)

The MDL performs serogroup identification on all confirmed isolates and some clinical specimens to assist in surveillance of meningococcal disease. CDPH routinely submits *N. meningitidis* isolates to CDC for molecular subtyping and AST when appropriate. This information is extremely helpful in determining if a cluster or outbreak is occurring.

CDC has identified *N. meningitidis* isolates that are resistant to penicillin and ciprofloxacin in the U.S. in recent years. CDPH encourages antimicrobial susceptibility testing (AST) on *N. meningitidis* isolates to inform treatment and post-exposure prophylaxis (PEP) decisions. AST should not delay initiation of PEP. CDC results are not available in a timely way and cannot be used for clinical or public health decision-making for individual cases.

## Appropriate samples for testing

- Bacterial isolates of *N. meningitidis* from normally sterile site; or
- 0.5 ml of EDTA-treated blood (purple top); and/or 0.5 ml of CSF; or
- Blood culture bottle once finalized (if negative); aerobic bottle preferred; or

## Laboratory Testing for Meningococcal Disease

- Please send both blood and CSF, if available.

### Expedited testing

Please contact CDPH IZB and MDL if urgent PCR testing or serogroup identification is requested to assist in public health follow-up.

### Storage and shipping

Specimens should be stored at 4°C/39.2°F (refrigerator temperature) and shipped as soon as possible.

### CDPH contact information

Please contact the MDL Bacterial Diseases Section at (510) 412-3903 for further information regarding laboratory testing for *N. meningitidis*.

### MDL shipping information

- *N. meningitidis* isolates or sterile site clinical specimens may be shipped directly from clinical, hospital or public health laboratories to CDPH MDL.
  - Complete the MDL General Electronic Submission Form (available at [MDL Submission Instructions and Forms](#))
  - Note that the MDL General Electronic Submission Form should be downloaded and opened within a pdf reader, such as an Adobe product. Opening the form inside an internet browser may not work and can create errors.
  - For isolates: Use the default dropdown form “Bacterial Culture for Identification (exclude Mycobacteria)-446”. Please fill out the second page with available details on previous laboratory testing.
  - For specimens: Select the dropdown form “Bacterial Sepsis/Meningitis PCR-VPP01”. Please fill out the second page with additional requested specimen and patient details.
  - Include key information: patient identifiers, submitter information, specimen collection date and specimen information (including biochemical, molecular, or serological testing).
  - Missing information may delay specimen processing and testing.
  - Insert the appropriate submittal form between the inner and outer container.
- Please record shipping tracking number, this is particularly important if testing is being requested urgently.
- Shipping address:  
Specimen Receiving  
Attn: Bacterial Diseases Section  
CDPH Microbial Diseases Laboratory  
850 Marina Bay Parkway  
Richmond, CA 94804