



California Department of Public Health – April 2018



# Laboratory Testing for Meningococcal Disease

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. In addition, culture-negative specimens from patients for whom there is a high clinical suspicion of meningococcal disease should 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.

## Serogrouping and molecular subtyping

The MDL performs serogroup identification on all confirmed isolates and some clinical specimens to assist in surveillance of meningococcal disease. Molecular subtyping can be performed at CDC, when appropriate.

## Appropriate samples for testing

- Bacterial isolates of *N. meningitidis* from a normally sterile site; **or**
- 0.5 ml of EDTA-treated blood (purple top); **and/or** 0.5 ml of CSF
- 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 to:

Specimen Receiving  
Attn: Special Pathogens Unit  
CDPH Microbial Diseases Laboratory  
850 Marina Bay Parkway  
Richmond, CA 94804

Shipping and handling instructions on next page.

## Susceptibility testing

Due to concern about the emergence of resistance to chemoprophylaxis agents (rifampin and ciprofloxacin), CDPH encourages susceptibility testing of *N. meningitidis* isolates; however this testing is not available through MDL. Hospital laboratories may perform susceptibilities upon request. If susceptibilities are performed, please forward the report to MDL.

## CDPH contact information

Please contact the MDL Special Pathogens Unit at (510) 412-3903 for further information regarding laboratory testing for *N. meningitidis*.

Other questions regarding meningococcal disease or other vaccine preventable diseases may be directed to the CDPH Immunization Branch at (510) 620-3737.

## 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 appropriate submittal form (available at [MDL Submission Instructions and Forms Webpage](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/MDLSubmissionInstructionsandForms.aspx):  
<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/MDLSubmissionInstructionsandForms.aspx>)
  - For isolates: [MDL-N-11 \(LAB 446\) form](https://archive.cdph.ca.gov/programs/mdl/Documents/MDL-446.BactCultIdent.pdf) for submission of bacterial culture for identification (<https://archive.cdph.ca.gov/programs/mdl/Documents/MDL-446.BactCultIdent.pdf>)
  - For specimens: [MDL-VPP-Form01](https://archive.cdph.ca.gov/programs/mdl/Documents/BacterialMeningitisTestRequest.pdf) form for bacterial sepsis/meningitis PCR test requests (<https://archive.cdph.ca.gov/programs/mdl/Documents/BacterialMeningitisTestRequest.pdf>).
  - 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 is:

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