



Isolate/Clinical Material Submission to the CDPHE Laboratory:

The "Rules and Regulations Pertaining to Epidemic and Communicable Disease Control" (6 CCR 1009-1, available at: <https://www.colorado.gov/pacific/cdphe/regulations-adopted-board-health>) require clinical laboratories to submit certain bacterial culture isolates and/or patient clinical material^a to the CDPHE laboratory in addition to reporting positive laboratory results to public health. The required isolate or clinical material must be received at the CDPHE laboratory no later than one working day after the observation of positive findings. The CDPHE laboratory requires a lab requisition form to be completed for each isolate/clinical material submitted. The CDPHE laboratory performs additional testing (confirmatory testing, serotyping, serogrouping, pulsed-field gel electrophoresis [PFGE], whole genome sequencing [WGS]) on submitted isolates/clinical material to identify outbreaks or forwards the isolate/clinical material to another lab for additional testing in order to better understand pathogens that adversely impact the public's health. There is no fee when submitting isolates/clinical material to the CDPHE laboratory per this policy.

Case Reporting to Public Health:

Submission of isolates or clinical material does not constitute reporting. Clinical laboratories and hospitals should have a method set up to report cases to CDPHE, such as electronic laboratory reporting, direct entry into the Colorado Electronic Disease Reporting System (CEDRS) by the facility infection preventionist or laboratory, or forwarding reports to CDPHE or a local public health agency. The reportable conditions list and details about how to report cases can be found at: <https://www.colorado.gov/pacific/cdphe/report-a-disease>

CDPHE Contacts:

Case and Outbreak reporting: (Monday - Friday, 8:30 a.m. - 5 p.m.)	CDPHE Integrated Disease Reporting Program Phone: 303-692-2700 or 800-866-2759 Fax: 303-782-0338 or 800-811-7263
Report immediately notifiable conditions and outbreaks after business hours:	CDPHE on-call epidemiologist: 303-370-9395
Questions about isolate/clinical material submission or shipping:	CDPHE Public Health Microbiology Laboratory: 303-692-3480
Order supplies for shipping isolates/clinical material:	https://www.colorado.gov/pacific/cdphe/order-lab click on 'Public health testing supply order form'

Statewide:

<p>Required:</p> <ul style="list-style-type: none"> • <i>Bacillus anthracis</i> • <i>Brucella</i> species • <i>Candida auris</i> (including suspected <i>C. auris</i>) and <i>Candida haemulonii</i>^b • <i>Corynebacterium diphtheriae</i> • <i>Escherichia coli</i> O157 and Shiga toxin-producing <i>Escherichia coli</i> • <i>Francisella tularensis</i> • <i>Haemophilus influenzae</i> (sterile site^{c,d}) • <i>Listeria monocytogenes</i> (submit each positive specimen) • <i>Mycobacterium tuberculosis</i> (isolates only) 	<ul style="list-style-type: none"> • <i>Neisseria meningitidis</i> or Gram-negative diplococci (sterile site^c) • <i>Salmonella</i> species (including Typhi and non-Typhi species) • <i>Shigella</i> species • <i>Staphylococcus aureus</i> - Vancomycin-resistant • <i>Vibrio cholerae</i> • <i>Vibrio non-cholerae</i> • Viral hemorrhagic fever • <i>Yersinia pestis</i>
<p>Requested:</p> <ul style="list-style-type: none"> • Carbapenem-resistant Enterobacteriaceae (CRE)^e - <i>Escherichia coli</i>, <i>Klebsiella</i> species, <i>Enterobacter</i> species, <i>Citrobacter</i> species, <i>Serratia</i> species, <i>Raoultella</i> species, <i>Providencia</i> species, <i>Proteus</i> species, <i>Morganella</i> species, and any carbapenemase-producing Enterobacteriaceae of any genus and species • Carbapenem-resistant <i>Pseudomonas aeruginosa</i> (CRPA)^f • Influenza^g 	

Clinical Laboratories Located in 5-county Denver Metropolitan Area

(Adams, Arapahoe, Denver, Douglas, Jefferson) as part of the Emerging Infections Program (EIP):

<p>Required:</p> <ul style="list-style-type: none"> • Group A streptococci (sterile site^c, muscle tissue, and wound or surgical tissue/specimen accompanied by necrotizing fasciitis or streptococcal toxic shock syndrome) • Group B streptococci (sterile site^{c,d}) • Streptococcal toxic shock syndrome (sterile site^c) • <i>Streptococcus pneumoniae</i> (sterile site^c) • <i>Yersinia non-pestis</i> species: 7-county Denver metropolitan area (Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson counties)
<p>Requested:</p> <ul style="list-style-type: none"> • <i>Candida</i> species (blood)^h

Specific Clinical Laboratories per Agreement with CDPHE:

<p>Requested:</p> <ul style="list-style-type: none"> • <i>Bordetella pertussis</i> • <i>Campylobacter</i> • <i>Clostridium difficile</i>
--

^a Clinical material is defined as:

- (i) A culture isolate containing the infectious organism for which submission of material is required, or
- (ii) If an isolate is not available, material containing the infectious organism for which submission of material is required, in the following order of preference:
 - (A) a patient specimen;
 - (B) nucleic acid; or
 - (C) other laboratory material

All isolates or clinical material submitted to the laboratory division should be accompanied by the following information:

- (a) Patient's name, date of birth, sex, race, ethnicity, and address
- (b) Name and address of responsible physician or other health care provider
- (c) Name of disease or condition
- (d) Laboratory information - test name, collection date and specimen type

^b *Candida auris*, or any suspected *Candida auris* (e.g., *Candida haemulonii* identified by a laboratory instrument not equipped to detect *Candida auris*), as per CDC: <https://www.cdc.gov/fungal/candida-auris/recommendations.html>.

^c For clarification on whether an isolate meets the definition for a sterile site, please contact one of the EIP epidemiologists at 303-692-2700 for guidance. Per the regulations, a normally "sterile site" is defined as:

- Blood
- Bone (includes bone marrow)
- CSF
- Internal body sites (sterilely obtained from biopsy/tissue/abscess/aspirate/fluid/swab from lymph node, brain, heart, liver, spleen, vitreous fluid, kidney, pancreas, vascular tissue, or ovary)
- Joint or synovial fluid
- Needle aspirate or culture of any specific joint
- Pericardial fluid
- Peritoneal fluid (includes abdominal fluid, ascites)
- Pleural fluid (includes chest fluid, thoracentesis fluid)
- Not considered sterile sites: Skin and skin abscesses

^d If GBS or *Haemophilus influenzae* is isolated from placenta and/or amniotic fluid and a fetal death occurs, it may be considered a maternal case for EIP, and the isolate is requested. However, routine submission of all GBS isolates from placental/amniotic fluid specimens is not required; should such isolates be submitted to the state lab, EIP epidemiologists will review the patient's medical chart to ascertain whether the patient meets the EIP case definition.

^e CRE isolated from any specimen type (including colonization screening) is requested for submission if it meets at least one of the following:

- (1) *E. coli*, *Enterobacter* species, *Klebsiella* species, *Citrobacter* species, *Serratia* species, *Raoultella* species resistant to at least one carbapenem.
- (2) *Providencia* species, *Proteus* species, and *Morganella* species resistant to at least one carbapenem (excluding imipenem).
- (3) Enterobacteriaceae of any genus and species that test positive for production of a carbapenemase by a recognized test (e.g., Carba-R, modified carbapenem inactivation method [mCIM], polymerase chain reaction [PCR], nucleic acid amplification test [NAAT], metallo- β -lactamase test, modified-Hodge test [MHT], Carba-NP).

^f The first 5 CRPA isolates (non-mucoid only) from any clinical specimen identified at each clinical lab every month, and CRPA isolates (mucoid and non-mucoid) resistant to all antibiotics tested are requested for submission. Mucoid and non-mucoid CRPA isolates are requested if they have a highly resistant profile and a carbapenemase is suspected; please call epidemiology at 303-692-2700 to determine if these isolates should be submitted.

^g CDPHE will notify laboratories annually via the Health Alert Network (HAN) for influenza specimen submission requirements, as all laboratories may not be requested to submit specimens.

^h Any *Candida* species cultured from blood is requested for submission. For any *Candida* species that is not *C. glabrata*, CDPHE only needs the FIRST blood culture *Candida* isolate from each patient, unless the second isolate within the 30 day period is a different species from the first. If a patient has another positive blood culture for *Candida* at least 30 days after the first positive culture, please submit that isolate too. For *C. glabrata*, please submit all isolates from a patient regardless of the number of times it is isolated within a 30-day period. Isolates are requested to be sub-cultured onto Sab Dex or other screw-top agar slant (such as Potato Dextrose or BHI; Mycosel and Mueller-Hinton agar do not work well) for submission. Please include the yeast identification method, species identified, originating hospital/lab name and specimen ID along with submitted isolates.

Additional notes:

- (1) CDPHE requests that isolates/specimens of any organism relating to an outbreak be saved at the clinical laboratory. CDPHE will contact the reporting laboratory to request the isolates/specimens.
- (2) Novel or unusual multidrug-resistant organisms (MDROs) are an emerging public health threat and CDPHE considers these to be of public concern. Per the Board of Health regulation 6 CCR 1009-1, "The Colorado Board of Health also requires the reporting of any unusual illness, or outbreak, or epidemic of illnesses, which may be of public concern whether or not known to be, or suspected of being, communicable." Healthcare facilities and laboratories should contact state or local public health authorities in a timely manner when unusual or highly-resistant organisms (e.g., organisms resistant to all antibiotics tested, colistin-resistant organisms) or mechanisms are identified. CDPHE requests these isolates be sent to the CDPHE laboratory for additional testing. Expanded capacity for antimicrobial resistance-related laboratory testing is available at the Centers for Disease Control and Prevention's (CDC's) Antimicrobial Resistance Laboratory Network (ARLN). The Centers for Disease Control and Prevention's (CDC's) Antimicrobial Resistance Laboratory Network (ARLN) can perform CRE colonization screening (rectal swab) at no charge. Please contact CDPHE (303-692-2700) if you would like more information about this service.