



### **Microbiology Specimen Submission Guidelines**

**Kansas Department of Health and Environmental Laboratories  
6810 SE Dwight Street  
Topeka, Kansas 66620  
Phone: (785) 296-1620  
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## General Information

**CLIA Director:** Robert Moser, MD

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**Health Section Chief:**

**Microbiology Laboratory Manager:** Philip Adam, PhD

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Topeka, Kansas 66620

**Email:** [kdhe.microlab@ks.gov](mailto:kdhe.microlab@ks.gov)

**Phone Number:** (785) 296-1620

**Fax Number:** (785) 559-5210

### Hours of Operation:

Open Monday through Friday 8:00am to 5:00pm.

KHEL does not perform testing and observes the following holidays:

New Year's Day (*January 1\**)  
Martin Luther King, Jr, Day (3<sup>rd</sup> Monday of January)  
Memorial Day (Last Monday of May)  
Independence Day (*July 4\**)  
Labor Day (1<sup>st</sup> Monday of September)  
Veteran's Day (*November 11\**)  
Thanksgiving (4<sup>th</sup> Thursday and Friday of November)  
Christmas Day (*December 25\**)

*\*When a holiday falls on Saturday, it is observed on the preceding Friday. When a holiday falls on Sunday, it is observed on the following Monday.*

**Website:** <http://www.kdheks.gov/labs/index.html>

The purpose of this manual is to provide a ready reference to our clients and to assist them in obtaining laboratory services as efficiently as possible.

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The policy of the Kansas Department of Health and Environmental Laboratories (KHEL) is to provide microbiology support to county and state agencies. In addition, KHEL serves as a reference microbiology laboratory to hospital and independent clinical laboratories in order to confirm their atypical results from cultures and clinical specimens. This information is also used as

part of the Kansas Department of Health and Environment (KDHE) Epidemiology and Public Health Informatics infectious disease surveillance program. The KDHE Infectious Disease Epidemiology and Response program conducts the infectious disease surveillance and outbreak investigations and provides subject matter expertise to local health departments, physicians, veterinarians, and the general public.

KDHE reporting requirements can be found at [http://www.kdheks.gov/epi/disease\\_reporting.html](http://www.kdheks.gov/epi/disease_reporting.html). This report identifies diseases which must be reported to the state epidemiologists and which isolates must be submitted to the laboratory. Please follow packaging and shipping guidelines found in this manual, or on our website at [http://www.kdheks.gov/labs/packaging\\_and\\_shipping.html](http://www.kdheks.gov/labs/packaging_and_shipping.html) to submit specimens to KHEL.

KHEL provides specimen collection materials and mailers free of charge for the purpose of outbreak investigation or for enforcement of K.A.R 28-1-6, which restricts or excludes those who work in food handling, patient care, and any occupation involving the care of young children and the elderly, as well as those who attend a child care facility or a family day care home. Stool specimens sent to KHEL can be tested for parasites (including *Cryptosporidium*, *Cyclospora cayetanensis*, *Entamoeba histolytica*, and *Giardia lamblia*); enteric bacteria (including *Campylobacter*, *Clostridium difficile*, *Plesiomonas shigelloides*, *Salmonella*, *Yersinia enterocolitica*, *Vibrio*, and *Vibrio cholerae*; Diarrheagenic *E. coli*/*Shigella* (including Enteroaggregative *E. coli* (EAEC), Enteropathogenic *E. coli* (EPEC), Enterotoxigenic *E. coli* (ETEC) *It/st*, Shiga-like toxin-producing *E. coli* (STEC) *stx1/stx2*, *E. coli* O157, *Shigella*/Enteroinvasive *E. coli* (EIEC)); and viruses (including Adenovirus F40/41, Astrovirus, Norovirus GI/GII, Rotavirus A, and Sapovirus).

Further information regarding specimen collection materials, mailing containers and *Requisition for Laboratory Specimen Kits and Supplies* form is located in this manual. Supplies ordered from KHEL are to be used ONLY to submit specimens to KHEL. All requisitions for specimen kits and supplies for specimen submission can be request by mailing or faxing the KHEL Customer Service department in Topeka:

Kansas Department of Health and Environmental Laboratories  
ATTN: Customer Service  
6810 SE Dwight Street  
Topeka, Kansas 66620  
Fax: (785) 559-5205

[http://www.kdheks.gov/labs/cust\\_serv/download/specimen\\_kit\\_request\\_form.pdf](http://www.kdheks.gov/labs/cust_serv/download/specimen_kit_request_form.pdf)

Please request specimen collection materials and mailers before they are required as the expected turnaround time per order is **FIVE** business days. Most materials do have a limited shelf life; therefore, only order what will be used before the expiration date. Please do not use expired kits or any kits in which the media has changed characteristics. Dispose of the media properly and order replacement supplies.

The Clinical Laboratory Improvement Act (CLIA) regulations require a unique patient identifier on both the specimen container and the *KDHE Universal Laboratory Specimen Submission Form (Health)*. For example, each specimen must be properly labeled with at least the barcode label from the *KDHE Universal Laboratory Specimen Submission Form (Health)*.

KHEL specimen submission guidelines are referenced from the guiding principles set forth by the Clinical and Laboratory Standards Institute (CLSI) and the Centers for Disease Control and Prevention (CDC).

## **Specimen Rejection Guidelines**

KHEL currently has the following policy for rejection of laboratory specimens and/or requested examinations. KHEL will NOT examine clinical/reference specimens if the following circumstances exist:

- The patient identifier on the specimen did not match the identifier on the submission form, or there was no identification on the specimen.
- The quantity of specimen was not sufficient for examination.
- The quality of specimen was not sufficient for examination.
- The quantity of specimen did not meet the specimen collection guidelines.
- The transit time for the specimen exceeded the maximum allowable time frame from the time of collection to receipt by the laboratory.
- The specimen was broken or leaked in transit.
- Specimen was submitted in an improper or expired container, transport media or preservative.
- Blood specimens submitted for microbiological analysis were hemolyzed or contaminated.
- Bacteriology isolates were mixed or contaminated.
- Test request deemed unnecessary by the KDHE Infectious Disease Epidemiology and Response Program and/or the Kansas Tuberculosis Control Program.

Exceptions to this policy will be considered due to extenuating circumstances; however, final approval to make an exception can only be made by the Laboratory Director, Laboratory Deputy Director, Health Section Chief, Microbiology Laboratory Manager, and/or Microbiology Technical Supervisor.

## Specimen Collection Guidelines

FedEx Overnight and 2Day and UPS Next Day Air and Ground services are encouraged as the delivery times are guaranteed by the carriers. The use of a commercial carrier service is also encouraged if specimens are delivered to KHEL within the window of the collection date and time requirements. The use of USPS is discouraged for all clinical specimens for mycobacterium testing as the delivery times are not guaranteed by the carrier.

All clinical specimens for Mycobacterial testing must be received by KHEL within 7 days of collection date and time. Specimen collection is encouraged Monday through Thursday with delivery to KHEL Monday through Friday by 10:00am. Specimen collection is not encouraged on Fridays or the day before a holiday (see page 2 for list of observed state holidays). All clinical specimens received by 10:00am Monday through Friday will be tested the same day. Specimens received after 10:00am Monday through Friday will be tested the following business day.

### Abscess

- Mycobacteriology
  - Remove surface exudate by wiping with sterile saline or 70% ethanol. Collect fluid abscess material with syringe and/or remove tissue aseptically. For open lesions/abscesses, aspirate material from under the margin of the lesion/abscess. Remove tissue aseptically. Collect tissue in 5 – 10mL sterile saline in a sterile, dry, leak-proof container, such as a 50mL conical tube.
  - Must be received by KHEL by 10:00am within 7 days of collection date and time.

### Blood

- Mycobacteriology
  - Aseptically collect 5 – 10mL of whole blood in 10mL yellow-top collector tube containing sodium polyanethole sulfonate (SPS), or green-top collector tube containing heparin. Minimum volume for adults is 5mL and for children is 1mL.
  - Must be received by KHEL by 10:00am within 7 days of collection date and time.
- QuantiFERON-TB Gold Plus Testing
  - Within 16 hours of collection, incubate tubes upright at 37°C for 16 – 24 hours.
  - Must be received by KHEL within 72 hours of incubation.

### Bodily Fluids (abdominal, bile, joint, peritoneal, pericardial, pleural, synovial, thoracentesis)

- Mycobacteriology
  - Aseptically collect 5 –10mL of fluid in a sterile, dry, leak-proof container, such as a 50mL conical tube container. Do not submit a swab to KHEL.
  - Must be received by KHEL by 10:00am within 7 days of collection date and time.

### Bronchoalveolar Lavage, Brush, or Wash

- Mycobacteriology
  - Collect 5 – 10mL of washing or aspirate in a sputum trap and place brush in sterile, dry, leak-proof container, such as a 50mL conical tube, with up to 5mL of sterile saline.
  - Must be received by KHEL by 10:00am within 7 days of collection date and time.

## CSF

- Mycobacteriology
  - Aseptically collect 5mL, 10mL optimal, of cerebrospinal fluid in a sterile, dry, leak-proof container, such as a 50mL conical tube.
  - Must be received by KHEL by 10:00am within 7 days of collection date and time.

## Isolate

- Bioterrorism Bacteriology
  - Must notify KHEL prior to submission - kdhe.SelectAgent@ks.gov.
  - Pure isolated colonies (<48 hours old) in appropriate tubed media. Seal tubed media with parafilm or another barrier film.
  - Isolates may be submitted on agar plates if no slants are available.
- Bacteriology (*E. coli* O157, STEC, *Salmonella*, *Shigella*, *Vibrio*, Other)
  - Pure isolated colonies (<48 hours old) in appropriate tubed media. Seal tubed media with parafilm or another barrier film.
  - Isolates may be submitted on agar plates if no slants are available.
  - Must be received by KHEL within 21 days of collection.
- Mycobacteriology
  - Pure isolated colonies in appropriate tubed media or broth, such as Lowenstein Jensen slant or Middlebrook 7H10 or 7H11 slant. Seal liquid media with parafilm or another barrier film.
  - Isolates may be submitted on agar plates if no slants are available.
  - Must be received by KHEL within 21 days of collection.
- Bacteriology (Gram-Negative/Positive Bacilli/Cocci/Etc.)
  - Pure isolated colonies (<48 hours old) in appropriate tubed media. Seal tubed media with parafilm or another barrier film.
  - Isolates may be submitted on agar plates if no slants are available.

## Sputum

- Mycobacteriology
  - Instruct patient to cough deeply to produce a 5 – 10mL lower respiratory specimen (not postnasal fluid) in to sterile, dry, leak-proof container, such as a 50mL conical tube.
  - Replication limits are three consecutive sputum specimens collected in 8 – 24 hour intervals (24 hours when possible).
  - Must be received by KHEL by 10:00am within 7 days of collection date and time.

## Stool

- Bacteriology Confirmation
  - *E. coli* O157, STEC
    - Collect a quarter sized amount of stool and transfer into a Cary-Blair transport medium vial within two hours of collection.
    - Or send post CIDT material, such as GN broth in the case of STEC EIA and similar tests. Seal liquid tube media with parafilm or another barrier film.
    - Must be received by KHEL within **72 hours** of collection.
  - *Salmonella*, *Shigella*, Other

- Collect a quarter sized amount of stool and transfer into a Cary-Blair transport medium vial within two hours of collection.
    - Or send post CIDT material, such as GN broth in the case of STEC EIA and similar tests. Seal liquid tube media with parafilm or another barrier film.
    - Must be received by KHEL within 7 days of collection.
  - *Vibrio*
    - Collect a quarter sized amount of stool and transfer into a Cary-Blair transport medium vial within two hours of collection.
    - Must be received by KHEL within **4 days** of collection
- Bacteriology Epidemiology Exclusion Testing
  - *E. coli* O157, STEC
    - Collect a quarter sized amount of stool and transfer into a Cary-Blair transport medium vial within two hours of collection.
    - Or send post CIDT material, such as GN broth in the case of STEC EIA and similar tests. Seal liquid tube media with parafilm or another barrier film.
    - Must be received by KHEL within **72 hours** of collection.
  - *Salmonella, Shigella, Other*
    - Collect a quarter sized amount of stool and transfer into a Cary-Blair transport medium vial within two hours of collection.
    - Must be received by KHEL within 7 days of collection.
  - *Vibrio*
    - Collect a quarter sized amount of stool and transfer into a Cary-Blair transport medium vial within two hours of collection.
    - Must be received by KHEL within **4 days** of collection
- Bacteriology Molecular GI Screen
  - Collect a quarter sized amount of stool and transfer into a Cary-Blair transport medium vial within two hours of collection.
  - Must be received by KHEL within 4 days of collection.
  - Must receive prior Bureau of Epidemiology and Public Health Informatics approval.
- Mycobacteriology
  - Collect 5 – 10mL of stool in a sterile, dry, leak-proof container, such as a 50mL conical tube.
  - Must be received by KHEL by 10:00am within 7 days of collection date and time.
- Parasite Testing
  - Must receive prior Bureau of Epidemiology and Public Health Informatics approval.
  - If parasite pathogens are suspected, please submit stool in Cary-Blair as outlined in the Bacteriology Molecular GI Screen guidelines.
  - Specimens submitted in 10% formalin or polyvinyl alcohol (PVA) vials are no longer acceptable for testing and will be rejected.

## Tissue/Lymph Node

- Mycobacteriology
  - Aseptically collect during surgery or cutaneous biopsy procedure in a sterile, dry, leak-proof container, such as a 50mL conical tube. Add 5 – 10mL sterile saline to tissue for transport. Do not submit a swab to KHEL. If a sterile swab is used, vortex swab in 5 – 10mL sterile saline and submit in a sterile, dry, leak-proof container, such as a 50mL conical tube.

- Must be received by KHEL by 10:00am within 7 days of collection date and time.

## Urine

- Mycobacteriology
  - Collect 5 – 10mL of urine in a sterile, dry, leak-proof container, such as a 50mL conical tube. First morning urine specimens are preferable. Do not use preservatives.
  - Must be received by KHEL by 10:00am within 7 days of collection date and time.

## Wound

- Mycobacteriology
  - Remove surface exudate by wiping with sterile saline or 70% ethanol. Collect fluid wound material with syringe and/or remove tissue aseptically. For open wounds, aspirate material from under the margin of the wound. Remove tissue aseptically. Collect tissue in 5 – 10mL sterile saline in a sterile, dry, leak-proof container, such as a 50mL conical tube.
  - Must be received by KHEL by 10:00am within 7 days of collection date and time.

## Specimen Shipping Guidelines

All infectious material must be classified as either Category A (UN2814, Infectious substances, affecting humans, 6.2) or Category B (UN3373) and must be transported to KHEL according to appropriate IATA (International Air Transportation Association [www.iata.org](http://www.iata.org)), USPS (United States Postal Service [www.usps.com](http://www.usps.com)) and DOT (U.S. Department of Transportation [www.transportation.gov](http://www.transportation.gov)) shipping regulations. All infectious material must be triple-packaged to protect against breakage and/or leakage during transportation. All specimens and isolates must be in leak proof containers with properly fastened screw caps. Isolates in liquid media are to be sealed with parafilm or other appropriate barrier film. Shipments that meet the definition for 'Category A' infectious substances as defined by federal regulations require additional packaging and labeling.

### Package Marking and Label Requirements

- Category A
  - Proper shipping name and UN2814 label
  - Shipper or consignee identification
  - Infectious substance label 172.432
  - Orientation arrows (as applicable)
- Category B
  - Proper shipping name and UN3373 label
  - Name and telephone number of responsible person
    - May be placed on separate document such as air waybill
  - Orientation arrows (as applicable)

### Shipping Documents

- Category A
  - Identification number



- Proper shipping name
- Hazard class/division
- Number of packaging group
- Type of package/unit of measure (QTY)
- Dangerous Goods Shipper's Declaration
- Emergency response telephone number
- Category B
  - No shipping papers required unless not under exception. Substances which are unlikely to cause disease in humans or animals or do not contain infectious substances are not subject to the Regulations unless they meet criteria for inclusion in another class.

\*All Category A shipments require a fiberboard infectious disease box with a corrugated divider insert, a red-topped secondary container (95kPa container), bubble wrap for padding, an absorbent pad, and a signed and completed Dangerous Goods Shipper's Declaration. All Category A Infectious Disease shippers requisitioned from KHEL will include a checklist for completing the Dangerous Goods Shipper's Declaration. The checklist can be found at the following link [http://www.kdheks.gov/labs/downloads/Checklist\\_for\\_Shippers.pdf](http://www.kdheks.gov/labs/downloads/Checklist_for_Shippers.pdf)

*Reminder: E. coli O157:H7 and STEC positive broth and isolates are 'Category A'. Shipments that meet the definition for 'Category A' infectious substances as defined by federal regulation require additional packaging/labeling.*

Submit all specimens to:

Kansas Department of Health and Environmental Laboratories  
 6810 SE Dwight Street  
 Topeka, Kansas 66620  
 (785) 296-1620

### **Abscess**

- Mycobacteriology
  - Ship at room temperature in a TB mailer with a *Biological Substance, Category B – (TB)* shipping label.
  - If transport is delayed by more than one hour from the date and time of collection, the specimen must be refrigerated.

### **Blood**

- Mycobacteriology
  - Ship at room temperature in a TB mailer with a *Biological Substance, Category B – (TB)* shipping label.
  - Do not refrigerate or freeze blood specimens.
- QuantiFERON-TB Gold Testing
  - Ship at room temperature in a TB mailer with a *Biological Substance, Category B – (TB)* shipping label. Indicate "QFT" on shipping label.
  - Do not refrigerate or freeze blood specimens.

### **Bodily Fluids (abdominal, bile, joint, peritoneal, pericardial, pleural, synovial, thoracentesis)**

- Mycobacteriology

- Ship at room temperature in a TB mailer with a *Biological Substance, Category B – (TB)* shipping label.
- If transport is delayed by more than one hour from the date and time of collection, the specimen must be refrigerated.

### **Bronchoalveolar Lavage, Brush, or Wash**

- Mycobacterium Testing
  - Ship at room temperature in a TB mailer with a *Biological Substance, Category B – (TB)* shipping label.
  - If transport is delayed by more than one hour from the date and time of collection, the specimen must be refrigerated.

### **CSF**

- Mycobacteriology
  - Ship as soon as possible at room temperature in a TB mailer with a *Biological Substance, Category B – (TB)* shipping label.
  - Do not refrigerate or freeze the specimen.

### **Isolate**

- Bioterrorism Bacteriology
  - Ship at room temperature in a Category A mailer\*.
- Bacteriology (Enteric pathogens)
  - *Salmonella, Shigella, Other*
    - Ship at room temperature in a Category A or Category B mailer, depending on isolate.
    - Keep CIDT material cold (2 – 8°C) when possible.
  - *E. coli* O157, STEC
    - Broth culture medium: Ship cold in a Category A mailer
    - Solid culture medium: Ship cold or at room temperature in a Category A mailer.
- Mycobacteriology
  - Ship at room temperature in a Category A mailer\*.
- Bacteriology (Gram-Negative/Positive Bacilli/Cocci/Etc.)
  - Ship at room temperature in a Category A or Category B mailer, depending on isolate.

### **Sputum**

- Mycobacteriology
  - Ship at room temperature in a TB mailer with a *Biological Substance, Category B – Sputum (TB)* shipping label.
  - If transport is delayed by more than one hour from the date and time of collection, the specimen must be refrigerated.

### **Stool**

- Bacteriology Confirmation (*E. coli* O157, STEC)
  - Ship cold in a Category B mailer.

- Ship cold an *Enteric with Cary Blair* cold mailer with a *Biological Substance, Category B – Enteric/Misc Bacterial* shipping label.
- Bacteriology Confirmation (*Salmonella, Shigella, Other*)
  - Ship cold (ideal) or at room temperature in a Category A or Category B mailer, depending on prior tested positive organism (*E. coli* O157 & STEC = Category A).
  - Ship cold (ideal) or at room temperature in an *Enteric with Cary Blair* mailer with a *Biological Substance, Category B – Enteric/Misc Bacterial* shipping label.
- Bacteriology Epidemiology Exclusion Testing (*E. coli* O157, STEC)
  - Ship cold in a Category B mailer.
  - Ship cold an *Enteric with Cary Blair* cold mailer with a *Biological Substance, Category B – Enteric/Misc Bacterial* shipping label.
- Bacteriology Epidemiology Exclusion Testing (*Salmonella, Shigella*)
  - Ship cold (ideal) or at room temperature in an *Enteric with Cary Blair* mailer with a *Biological Substance, Category B – Enteric/Misc Bacterial* shipping label.
- Bacteriology Molecular GI Screen
  - Ship cold (ideal) or at room temperature in an *Enteric with Cary Blair* mailer with a *Biological Substance, Category B – Enteric/Misc Bacterial* shipping label.
- Mycobacteriology
  - Ship at room temperature in a TB mailer with a *Biological Substance, Category B – (TB)* shipping label.
  - If transport is delayed by more than one hour from the date and time of collection, the specimen must be refrigerated.
- Parasite Testing
  - Ship cold (ideal) or at room temperature in an *Enteric with Cary Blair* mailer with a *Biological Substance, Category B – Enteric/Misc Bacterial* shipping label.

### **Tissue/Lymph Node**

- Mycobacteriology
  - Ship at room temperature in a TB mailer with a *Biological Substance, Category B – Sputum (TB)* shipping label.

### **Urine**

- Mycobacteriology
  - Ship at room temperature in a TB mailer with a *Biological Substance, Category B – Sputum (TB)* shipping label.
  - If transport is delayed by more than one hour from the date and time of collection, the specimen must be refrigerated.

### **Wound**

- Mycobacteriology
  - Ship at room temperature in a TB mailer with a *Biological Substance, Category B – (TB)* shipping label.
  - If transport is delayed by more than one hour from the date and time of collection, the specimen must be refrigerated.