INFECTIOUS DISEASE OUTBREAK LABORATORY MANUAL OF TESTS AND SERVICES

ARIZONA DEPARTMENT OF HEALTH SERVICES
DIVISION OF PUBLIC HEALTH SERVICES
BUREAU OF EPIDEMIOLOGY AND DISEASE CONTROL SERVICES
OFFICE OF INFECTIOUS DISEASE SERVICES

First Edition, February 10, 2011

Overview of the Manual:

The Arizona Department of Health Services Office of Infectious Disease Outbreak Manual of Laboratory Tests and Services contains a listing of tests performed at the Arizona State Public Health Laboratory.

The manual describes how to collect quality samples for testing and properly package them to ensure safe transport to the laboratory in the event of an outbreak.

SECTION I contains listings and contact numbers for epidemiology programs, specific laboratories, and emergency preparedness contacts for biological, chemical or radiological response.

SECTION II is a listing of reportable diseases. This list serves as a reminder to report diseases/ medical conditions to the appropriate agency within a specified time.

SECTION III is an alphabetized index of tests, which lists all tests performed along with the corresponding page numbers.

SECTION IV is an alphabetized list of testing services. Each test entry contains information pertaining to the collection, submission and analysis of samples. The entries reflect current testing capabilities and provide information for Sample, Sample and Volume, Sample Container, Sample Test Kit, Shipping Requirements and Special Instructions.

SECTION V contains the Arizona State Public Health Laboratory's (ASHL) Specimen Rejection policy, ASHL Microbiology Submission Form and Collection Kit request instructions

For a complete list of testing available at ASHL for routine and outbreak testing, refer to the Guide to Laboratory Services at http://www.azdhs.gov/lab/micro/labguide.pdf

SECTION I- CONTACT NUMBERS FOR LABORATORY AND INFECTIOUS DISEASE EPIDEMIOLOGY

Arizona Department of Health Services
Bureau of State Laboratory Services
Laboratory Programs and Sections

Department	Phone Number
Receiving & Stockroom	602 542-1190
Bacteriology & Environmental FERN Microbiology	602 542-6131
Tuberculosis (TB)	602 542-6132
Bioemergency Detection & Response	602 542-1150
Serology	602 542-6125 602 542-6126
Virology	602 542-6134
Newborn Screening	602 542-1184
Chemical Detection & Response	602 542-3753

Arizona Department of Health Services
Bureau of Epidemiology and Disease Control Services
Infectious Disease Surveillance and Investigations
Epidemiology Sections

IMPORTANT NOTICE:

The After Hours Emergency Telephone Number for the Bureau of Epidemiology and Disease Control Services, Office of Infectious Disease Services is

602-839-5040

Call this number to report disease outbreaks, including food-borne outbreaks, cases of emerging infectious disease, exposures to select agents or toxins or other questions regarding infectious disease emergency situations that occur after hours.

Department	Phone Number
Main Number	602-364-3676
Program Manager, Surveillance Epidemiology and Investigations	602-364-3385
Foodborne/ Waterborne Epidemiologist	602-364-3675
Hepatitis B Epidemiologist	602-364-0246
Influenza Epidemiologist	602-319-9397
Investigations Epidemiologist (Unexplained Deaths, Antibiotic Resistance, Nosocomial Infections)	602-364-4561
Laboratory Surveillance Epidemiologist	602-364-1442
Vaccine-Preventable Disease Epidemiologist	602-364-3685
Vaccine-Preventable Disease Epidemiologist	602-364-3817

SECTION II- LISTING OF REPORTABLE DISEASES IN ARIZONA

COMMUNICABLE AND OTHER INFECTIOUS DISEASE REPORTABLE IN ARIZONA BY HEALTHCARE PROVIDERS

Arizona Administrative Code✦ Requires Providers To:

Report Communicable Diseases

to the Local Health Department

✉✱○ Amebiasis	✉ Hantavirus infection	✉✱○ Salmonellosis
☎ Anthrax	☎ Hemolytic uremic syndrome	○ Scabies
✉ Aseptic meningitis: viral	✉✱○ Hepatitis A	☎ Severe acute respiratory syndrome
✉ Basidiobolomycosis	✉ Hepatitis B and D	✉✱○ Shigellosis
☎ Botulism	✉ Hepatitis C	☎ Smallpox
◑ Brucellosis	✉✱○ Hepatitis E	✉ Streptococcal Group A: invasive disease
✉✱○ Campylobacteriosis	✉ Herpes genitalis	✉ Streptococcal Group B: invasive disease in infants younger than 90 days of age
✉ Chagas disease (American trypanosomiasis)	✉ HIV infection and related disease	✉ *Streptococcus pneumoniae* (pneumococcal invasive disease)
✉ Chancroid	◑ Influenza-associated mortality in a child	✉ Syphilis
✉ Chlamydia infection, sexually transmitted	✉ Kawasaki syndrome	✉✱○ Taeniasis
◑* Cholera	✉ Legionellosis (Legionnaires' disease)	✉ Tetanus
✉ Coccidioidomycosis (valley fever)	✉ Leptospirosis	✉ Toxic shock syndrome
✉ Colorado tick fever	☎ Listeriosis	✉ Trichinosis
○ Conjunctivitis: acute	✉ Lyme disease	◑ Tuberculosis, active disease
✉ Creutzfeldt-Jakob disease	✉ Lymphocytic choriomeningitis	◑ Tuberculosis latent infection in a child 5 years of age or younger (positive screening test result)
✉✱○ Cryptosporidiosis	✉ Malaria	☎ Tularemia
✉ *Cyclospora* infection	☎ Measles (rubeola)	☎ Typhoid fever
✉ Cysticercosis	☎ Meningococcal invasive disease	◑ Typhus fever
✉ Dengue	◑ Mumps	☎ Unexplained death with a history of fever
○ Diarrhea, nausea, or vomiting	☎ Pertussis (whooping cough)	◑ Vaccinia-related adverse event
☎ Diphtheria	☎ Plague	☎ Vancomycin-resistant or Vancomycin-intermediate *Staphylococcus aureus*
✉ Ehrlichiosis and Anaplasmosis	☎ Poliomyelitis	☎ Vancomycin-resistant *Staphylococcus epidermidis*
☎ Emerging or exotic disease	✉ Psittacosis (ornithosis)	✉ Varicella (chickenpox)
◑ Encephalitis, viral or parasitic	◑ Q fever	✉✱○ *Vibrio* infection
☎ Enterohemorrhagic *Escherichia coli*	☎ Rabies in a human	☎ Viral hemorrhagic fever
☎ Enterotoxigenic *Escherichia coli*	✉ Relapsing fever (borreliosis)	✉ West Nile virus infection
✉✱○ Giardiasis	✉ Reye syndrome	☎ Yellow fever
✉ Gonorrhea	✉ Rocky Mountain spotted fever	✉✱○ Yersiniosis
✉ *Haemophilus influenzae*: invasive disease	◑✱ Rubella (German measles)	
✉ Hansen's disease (Leprosy)	◑ Rubella syndrome, congenital	

☎ Submit a report by telephone or through an electronic reporting system authorized by the Department within 24 hours after a case or suspect case is diagnosed, treated, or detected or an occurrence is detected.

✱ If a case or suspect case is a food handler or works in a child care establishment or a health care institution, instead of reporting within the general reporting deadline, submit a report within 24 hours after the case or suspect case is diagnosed, treated, or detected.

◑ Submit a report within one working day after a case or suspect case is diagnosed, treated, or detected.

✉ Submit a report within five working days after a case or suspect case is diagnosed, treated, or detected.

○ Submit a report within 24 hours after detecting an outbreak.

www.azdhs.gov/phs/oids/hcp_rpt.htm

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COMMUNICABLE AND OTHER INFECTIOUS DISEASE REPORTABLE IN ARIZONA BY ALL CLINICAL LABORATORIES

Reports should be sent to:
Arizona Department of Health Services
Infectious Disease Epidemiology
150 North 18th Avenue, Suite 140
Phoenix, AZ 85007
602-364-3676 or 602-364-3199 (fax)

ARIZONA LABORATORY REPORTING REQUIREMENTS

Isolates should be sent to:
Arizona State Laboratory
250 North 17th Avenue
Phoenix, AZ 85007

◑	Arboviruses	✱	*Haemophilus influenzae*, other, isolated from a normally sterile site		*Plasmodium* spp.
🔔☎✱	*Bacillus anthracis*		Hantavirus		Respiratory syncytial virus
☎✱	*Bordetella pertussis*	[1]	Hepatitis A virus (anti-HAV-IgM serologies)	☎+	Rubella virus and anti-rubella-IgM serologies
◑✱	*Brucella* spp.	[1]	Hepatitis B virus (anti-Hepatitis B core-IgM serologies, Hepatitis B surface or envelope antigen serologies, or detection of viral nucleic acid)	◑✱	*Salmonella* spp.
◑✱	*Burkholderia mallei* and *B. pseudomallei*	[1]	Hepatitis C virus	☎	SARS-associated corona virus
	Campylobacter spp.	[1]	Hepatitis D virus	◑✱	*Shigella* spp.
	CD_4-T-lymphocyte count of fewer than 200 per microliter of whole blood or CD_4-T-lymphocyte percentage of total lymphocytes of less than 14%	[1]+	Hepatitis E virus (anti-HEV-IgM serologies)		*Streptococcus* Group A, isolated from a normally sterile site
	Chlamydia trachomatis		HIV (by culture, antigen, antibodies to the virus, or detection of viral nucleic acid)		Streptococcus Group B, isolated from a normally sterile site in an infant younger than 90 days of age
🔔☎	*Clostridium botulinum* toxin (botulism)		HIV—any test result for an infant (by culture, antigen, antibodies to the virus, or detection of viral nucleic acid)	✱	*Streptococcus pneumoniae* and its drug sensitivity pattern, isolated from a normally sterile site
	Coccidioides spp., by culture or serologies		Influenza virus		*Treponema pallidum* (syphilis)
◑	*Coxiella burnetti*	✱	*Legionella* spp. (culture or DFA)		*Trypanosoma cruzi* (Chagas disease)
	Cryptosporidium spp.	◑✱	*Listeria* spp., isolated from a normally sterile site	◑✱	Vancomycin-resistant or Vancomycin-intermediate *Staphylococcus aureus*
◑	*Cyclospora* spp.	☎+	Measles virus and anti-measles-IgM serologies	◑✱	Vancomycin resistant *Staphylococcus epidermidis*
	Dengue virus	[2]	Methicillin-resistant *Staphylococcus aureus,* isolated from a normally sterile site	🔔☎	Variola virus (smallpox)
🔔☎	Emerging or exotic disease agent	◑+	Mumps virus and anti-mumps-IgM serologies	◑✱	*Vibrio* spp.
	Entamoeba histolytica	✱[3]	*Mycobacterium tuberculosis* complex and its drug sensitivity pattern	🔔☎	Viral hemorrhagic fever agent
◑	*Escherichia coli* O157:H7		*Neisseria gonorrhoeae*		West Nile virus
◑✱	*Escherichia coli, Shiga*-toxin producing	☎✱	*Neisseria meningitidis,* isolated from a normally sterile site	◑✱	*Yersinia* spp. (other than *Y. pestis*)
🔔☎✱	*Francisella tularensis*		Norovirus	🔔☎✱	*Yersinia pestis* (plague)
☎✱	*Haemophilus influenzae*, type b, isolated from a normally sterile site				

🔔 Submit a report immediately after receiving one specimen for detection of the agent. Report receipt of subsequent specimens within five working days after receipt.
☎ Submit a report within 24 hours after obtaining a positive test result.
◑ Submit a report within one working day after obtaining a positive test result.
Submit a report within five working days after obtaining a positive test result or a test result specified on this page.
✱ Submit an isolate of the organism for each positive culture to the Arizona State Laboratory at least once each week, as applicable.
\+ For each positive test result, submit a specimen to the Arizona State Laboratory within 24 hours after obtaining the positive test result.
[1] When reporting a positive result for any of the specified tests, report the results of all other tests performed for the subject as part of the disease panel.
[2] Submit a report only when an initial positive result is obtained for an individual.
[3] Submit an isolate of the organism only when an initial positive result is obtained for an individual, when a change in resistance pattern is detected, or when a positive result is obtained ≥ 12 months after the initial positive result is obtained for an individual.

www.azdhs.gov/phs/oids/lab_rpt.htm

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SECTION III: INDEX OF TESTS FOR INFECTIOUS DISEASE COMMONLY ASSOCIATED WITH OUTBREAKS

SECTION IV: LABORATORY TESTING SERVICES

Bordetella pertussis

Test Name:	***Bordetella pertussis* Culture**
Use of Test:	Isolation and identification of *Bordetella pertussis*.
Significant Result:	Culture positive for *Bordetella pertussis*.
Limitations:	Culture is most sensitive for specimens collected within the first 3 weeks after cough onset. Beyond this point, false negative results become more common.
Turnaround Time:	11 days
Sample and Volume:	Nasopharyngeal swab
Sample Collection:	Nasopharyngeal swab: The pharynx is swabbed vigorously with a swab. **USE ONLY DACRON SWABS**. Specimens submitted should not be frozen. Post collection, push the swab into a tube of Regan-Lowe semi-solid transport agar or Amies with charcoal.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	The specimens should be shipped on ice. If transport to ASHL is delayed, specimens should be refrigerated. Use a triple packaging system for transporting by courier or USPS. Mark the outer packaging "UN3373- Biological Substances, Category B."

Botulism

Test Name: **Botulism Toxin Culture, Food or Stool**

Special Instructions: ALL BOTULISM TESTING IS REFERRED TO ADHS, BUREAU OF EPIDEMIOLOGY AND DISEASE CONTROL PRIOR TO SENDING SPECIMENS IN ORDER TO ALERT STAFF. IF AFTER HOURS PLEASE CONTACT THE EPIDEMIOLOGY 24/7 ON-CALL NUMBER AT **602-920-3772** AND THE STATE LABORATORY 24/7 ON-CALL NUMBER AT **602-283-6277**

Use of Test: To support a diagnosis of botulism, infant botulism.

Turnaround Time: Test performed at CDC

Sample and Volume:

Infant Botulism:

1. Stool for culture and toxin- 20 to 50 grams
2. Serum for toxin- 2.5 ml minimum
   - Toxin testing- 10 to 30 grams
   - Culture- 10 to 20 grams or 15 to 25ml of watery enema.
   - A rectal swab may be accepted, only if other stool specimens are not available.
3. Food for toxin and culture

Food borne Botulism- Adult:

1. Feces- 25 to 50 grams
2. Serum – 15 to 20 ml
3. Remainder of suspected food

Wound Botulism:

1. Feces- 25 to 50 grams
2. Serum – 15 to 20 ml
3. Tissue, exudates or swab samples from wound

Sample Container: Sterile, leak proof container and insulated box with coolant. DO NOT FREEZE.

Forms Required: The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.

Shipping Requirements: Shipment by courier as soon as possible is optimal. If necessary, ship overnight with coolant. DO NOT FREEZE. Triple package sample as an "UN3373-Biological Substances, Category B" for transport by Courier or USPS.

Campylobacter

Test Name:	***Campylobacter* spp. Culture**
Use of Test:	To screen for bacterial cause of diarrheal illness
Special Instructions:	Stool specimens must be properly submitted, with transport containers not overfilled and with transport medium not removed. Specimen jars must be tightly closed and not leaking when received. The time interval between collection of the specimen and receipt in the Lab must not be greater than 5 days.
Test Includes:	Isolation and species identification of *Campylobacter* species. All *Campylobacter* isolates are sent to CDC for serotyping. Tests also include Pulsed-field gel electrophoresis (PFGE).
Turnaround Time:	5 days
Sample and Volume:	Stool specimen (approximately one gram). Stool swab and rectal swab are acceptable but less desirable than stool.
Sample Collection:	*Isolate*- In the event of an outbreak, the hospital or commercial laboratory, should forward the isolate to ASHL. The isolate should be a pure culture on a suitable nutrient agar slant. TSI is **not** to be used for *Campylobacter* spp. *Specimen:* Collect a small portion of feces, approximately the size of a marble, or a swab coated with feces and place in Cary-Blair transport media. Inoculate a small amount of stool below the surface of the medium.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type. The State Laboratory will provide agencies with Cary-Blair Medium.
Shipping Requirements:	Specimens held in Cary-Blair Medium should be refrigerated until examined. Use triple packaging system for courier or USPS. Mark outer packaging as "UN3373-Biological Substances, Category B".

Test Name:	***Campylobacter* spp. Isolation, Food**
Use of Test:	To support epidemiologic evidence implicating a food as a possible source of illness.
Special Instructions:	Food samples must be submitted through local or state public health agencies as part of an outbreak investigation (one or more ill consumers). All food items must clearly be labeled with the name of the food source and date of collection
Test Includes:	Isolation and identification of *Campylobacter* species
Turnaround Time:	3 to 7 days.
Sample and Volume:	At least 200 grams of the solid product or 100 ml of liquid.
Sample Container:	Original sample container as submitted by inspector or other sterile leak proof container.
Sample Collection:	Collect food aseptically and place in sterile whirlpack bags or other sterile, leak proof container. Keep all samples refrigerated except those samples received frozen which should be maintained in the frozen state.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Triple package samples**.** Transport samples on ice or on prefrozen cold packs, in appropriate packaging.

Cryptosporidium

Test Name:	***Cryptosporidiosis* spp. Detection**
Use of Test:	Detection of *Cryptosporidium* oocyts in stool.
Special Instructions:	Stool specimens must be properly submitted, with transport containers not overfilled and with transport medium not removed. Specimen jars must be tightly closed and not leaking when received. Because the host passes parasites intermittently, multiple specimens should be examined. These irregularities emphasize the need to collect at least three specimens over 10-14 days.
Test Includes:	The detection of 1 or more *Cryptosporidium* oocyts microscopically.
Turnaround Time:	5 days
Sample and Volume:	Stool specimen (approximately one gram).
Sample Collection:	*Specimen:* Collect the stool in a clean container or on a clean paper and transfer to the Ova and Parasite transport containers supplied by the State Laboratory. The collection kit provided includes a container with PVA fixative and one container with 10% formalin fixative. A portion of the specimen, approximately 1 tablespoon, is added to the fixative in a ratio of 1 part specimen to 3 parts fixative. Mix thoroughly to assure adequate fixation. Do not contaminate specimen with dirt or urine. **TREATMENT WITH ANY OF THE FOLLOWING BEFORE COLLECTION WILL MAKE SPECIMENS UNSUITABLE FOR TESTING: ANTACIDS, BISMUTH, ANTI-DIARRHEAL MEDICATIONS, ANTIBIOTICS, AND/OR OILY LAXATIVES.**
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Mailed stool specimens require use of a preservative, and a two-vial method of collection. One vial should contain 10% formalin and the other contains PVA fixative. Use triple packaging system for courier or USPS. Mark outer packaging as "UN3373-Biological Substances, Category B".

Enteric culture

Test Name:	**Enteric culture**
Use of Test:	To screen for bacterial cause of diarrheal illness
Test includes:	Isolation and identification of *Shigella* spp., *Salmonella* spp., *Campylobacter* spp., and toxin producing *E.coli*. If isolate is identified and problematic then isolates are submitted to CDC for serotyping. Tests also include pulsed-field gel electrophoresis (PFGE).
Special Instructions:	Stool specimens must be properly submitted, with transport containers not overfilled and with transport medium not removed. Specimen jars must be tightly closed and not leaking when received. The time interval between collection of the specimen and receipt in the Lab must not be greater than 5 days.
Turnaround Time:	10 days
Sample and Volume:	Stool specimen (approximately one gram)
Sample Collection:	*Specimen*- If isolate not available, then collection of stool in Cary-Blair transport media is required for testing. For Cary-Blair Medium, inoculate a small amount of stool below the surface of the medium. The ASHL will provide agencies with Cary-Blair Medium.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Specimens held in Cary-Blair Medium should be refrigerated until examined. Samples older than 3 days will not be accepted. Use triple packaging system for courier or USPS. Mark outer packaging as "UN3373-Biological Substances, Category B".

Escherichia coli (E.coli)

Test Name: **Enterohemorrhagic *E.coli* (EHEC) O157:H7 Culture**

Use of Test: To screen for bacterial cause of diarrheal illness

Test includes: Isolation and identification of Enterohemorrhagic *E.coli*. Tests include identification of *E.coli* O157:H7 serogroup. Problematic isolates are submitted to CDC for serotyping. Tests also include pulsed-field gel electrophoresis (PFGE).

Special Instructions: Stool specimens must be properly submitted, with transport containers not overfilled and with transport medium not removed. Specimen jars must be tightly closed and not leaking when received. The time interval between collection of the specimen and receipt in the Lab must not be greater than 5 days.

Turnaround Time: 5 days

Sample and Volume: Stool specimen (approximately one gram)

Sample Collection: *Isolate or Broth*- In the event of an outbreak, the hospital or commercial laboratory, should forward the isolate to ASHL. The isolate should be a pure culture on TSI or nutrient agar slant or culture plate

Specimen- If isolate not available, then collection of stool in Cary-Blair transport media is required for testing.

For Cary-Blair Medium, inoculate a small amount of stool below the surface of the medium. The ASHL will provide agencies with Cary-Blair Medium.

Forms Required: The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.

Shipping Requirements: Specimens held in Cary-Blair Medium should be refrigerated until examined. Samples older than 3 days will not be accepted. Use triple packaging system for courier or USPS. Mark outer packaging as "UN3373-Biological Substances, Category B".

Test Name: **Enterohemorrhagic *E.coli* (EHEC) NON-O157:H7 Serogrouping ShigaToxin-Producing *E.coli* (STEC) PCR**

Use of Test: Confirm presence of Shiga toxin. Isolate Shiga-toxin producing organism(s) for subsequent identification.

Test Includes: Test for Shiga toxin(s) by Polymerase chain reaction (PCR). Isolation of Shiga-toxin producing organism from positive specimens for subsequent identification. Confirmation of suspected Shiga toxin-producing *E.coli* (STEC) or other suspected Shiga toxin producing organism and subsequent serotyping.

Turnaround Time: 5-7 days for confirmation of culture and/or stool specimen. Successful isolation of the Shiga-toxin producing organism can take a few days longer.

For final confirmation and serotyping, the isolates may be sent to CDC. Results maybe over a month from time specimen submitted to CDC.

Sample and Volume: Stool specimen (5-25 grams)

Sample Collection: *Isolate or Broth*- In the event of an outbreak, the hospital or commercial laboratory, should forward the isolate to ASHL. The isolate should be a pure culture, collect on an agar slant or plate.

Specimen- If isolate not available, then collection of stool in Cary-Blair transport media is required for testing. For Cary-Blair Medium, inoculate a small amount of stool below the surface of the medium. The ASHL will provide agencies with Cary-Blair Medium.

Forms Required: The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.

Shipping Requirements: Ship pure cultures at room temperature. Specimens held in Cary-Blair Medium should be refrigerated until examined. Use triple packaging system for courier or USPS. Mark outer packaging as "UN3373-Biological Substances, Category B".

Giardia

Test Name:	***Giardiasis* spp. Detection**
Use of Test:	Detection of Giardia oocyts in stool.
Special Instructions:	Stool specimens must be properly submitted, with transport containers not overfilled and with transport medium not removed. Specimen jars must be tightly closed and not leaking when received. It is important to collect at least three specimens over 10-14 days.
Test Includes:	The detection of 1 or more Giardia oocyts microscopically.
Turnaround Time:	5 days
Sample and Volume:	Stool specimen (approximately one gram).
Sample Collection:	*Specimen:* Collect the stool in a clean container or on a clean paper and transfer to the Ova and Parasite transport containers supplied by the State Laboratory. The collection kit provided includes a container with PVA fixative and one container with 10% formalin fixative. A portion of the specimen, approximately 1 tablespoon, is added to the fixative in a ratio of 1 part specimen to 3 parts fixative. Mix thoroughly to assure adequate fixation. Do not contaminate specimen with dirt or urine. **TREATMENT WITH ANY OF THE FOLLOWING BEFORE COLLECTION WILL MAKE SPECIMENS UNSUITABLE FOR TESTING: ANTACIDS, BISMUTH, ANTI-DIARRHEAL MEDICATIONS, ANTIBIOTICS, AND/OR OILY LAXATIVES.**
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Mailed stool specimens require use of a preservative, and a two-vial method of collection. One vial should contain 10% formalin and the other contains PVA fixative. Use triple packaging system for courier or USPS. Mark outer packaging as "UN3373-Biological Substances, Category B".

Haemophilus influenzae

Test Name:	***Haemophilus influenzae* Biotyping & Serotyping**
Test Includes:	Biotyping and serotyping of *Haemophilus influenzae*
Limitations:	Testing performed only on organisms isolated from normally sterile sites.
Turnaround Time:	5 days
Sample:	Pure culture on chocolate agar slant or culture plate.
Specimen Collection:	*Isolate*- In the event of an outbreak, the hospital or commercial laboratory, should forward the isolate to ASHL. The isolate should be a pure culture on suitable chocolate agar slant or culture plate.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipment Requirements:	Ship at room temperature. Using the triple packaging system for courier or USPS, mark outer packaging as "UN3373-Biological Substances, Category B."

Hepatitis A

Test Name:	***Hepatitis A IgM* (EIA)**
Use of Test:	Detection of antibody to Hepatitis A IgM antibody
Test Includes:	Qualitative testing by a commercial enzyme immunoassay (EIA) procedure.
Turnaround Time:	4 days
Sample Collection:	Routine blood draw. Minimum of 1mL serum or plasma needed. Serum separator tube preferred, though red top serum tubes are acceptable.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Use triple packaging system for courier or USPS. Mark outer packaging as "UN3373-Biological Substances, Category B".

Influenza

Test Name:	**Influenza Culture & Typing/Subtyping**
Test Includes:	Isolation and typing of influenza virus by shell vials.
Turnaround Time:	14 days
Specimen:	*Preferred*- Nasopharyngeal swab *Acceptable*- Nasopharyngeal wash or aspirate, throat swab, tracheal aspirate, sputum, bronchoalveolar lavage (BAL).
Specimen Collection:	Virus isolation is most successful if specimen collected within 3 to 5 days of illness. The pharynx is swabbed vigorously with a cotton swab moistened with collection medium free of serum such as Hanks, and then placed in a transport container containing Hanks Buffered Saline Solution (HBSS). Specimens submitted should not be frozen.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Shipment by courier or transport to the ASHL within 24 hours on prefrozen ice packs to keep refrigerated. Use a triple packaging system for transporting by courier. Mark the outer packaging as "UN3373-Biological Substances, Category B."

Test Name:	**Influenza, Molecular Typing PCR**
Test Includes:	Identification of influenza types A, B and subtypes H1, H3, H5, and 2009 H1N1 by Polymerase Chain Reaction (PCR).
Turnaround Time:	2 days
Specimen:	*Preferred*- Nasopharyngeal swab *Acceptable*- Nasopharyngeal wash or aspirate, throat swab, tracheal aspirate, sputum, bronchoalveolar lavage (BAL).
Specimen Collection:	Virus isolation is most successful if specimen collected within 3 to 5 days of illness. Nasopharyngeal swab: The pharynx is swabbed vigorously with a cotton swab moistened with collection medium free of serum such as Hanks, and then placed in a transport container containing Hanks Buffered Saline Solution (HBSS). Specimens submitted should not be frozen.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Shipment by courier or transport to the ASHL within 24 hours on prefrozen ice packs to keep refrigerated. Use a triple packaging system for transporting by courier. Mark the outer packaging as "UN3373-Biological Substances, Category B."

Legionellosis (Legionnaires' Disease)

Test Name:	***Legionella* Culture & Serogrouping**
Use of Test:	Identification and serogrouping of *Legionella* spp.
Turnaround Time:	7 days for species identification. Sent to CDC for serotyping
Specimen:	Pleural fluid, transtracheal aspirate, respiratory secretions (sputum, bronchial wash, bronchoalveolar lavage (BAL), and normally sterile sites.
Specimen Collection:	*Isolate*-In the event of an outbreak, the hospital or commercial laboratory, should forward the isolate to ASHL. The isolate should be a pure culture on BCYE agar plate *Specimen*-Collect 5 to 30mL of secretions. Specimens should be held at 4-8°C and should not be allowed to dry out. DO NOT use sterile saline for specimen collections as *Legionella* spp. are inhibited by saline.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	The specimens should be shipped on ice the same day. If transport to ASHL is delayed, specimens should be frozen (-70°C) and transported in the frozen state (dry ice). Use a triple packaging system for transporting by courier or USPS. Mark the outer packaging "UN3373- Biological Substances, Category B."

Listeria

Test Name:	***Listeria* spp. Culture**
Use of Test:	Identification of *Listeria* spp.
Special Instructions:	Clinical specimens from normally sterile sites such as blood, cerebrospinal fluid (CSF), amniotic fluid, placenta, or fetal tissue do not require special procedures for collection or transport. Specimens from non-sterile sites, such as meconium, feces, vaginal secretions, respiratory, skin or mucous swabs require prompt handling to prevent overgrowth of contaminants.
Test Includes:	Confirmation of isolates. Tests also include pulsed-field gel electrophoresis (PFGE). All isolates of *Listeria spp*. are sent to CDC for serotyping
Turnaround Time:	5 days for species identification. Sent to CDC for serotyping
Sample Collection:	*Isolate*- In the event of an outbreak, the hospital or commercial laboratory, should forward the isolate to ASHL. The isolate should be a pure culture from a sterile site that can be plated directly on tryptic soy agar containing 5% sheep, horse, or rabbit blood. Samples for blood culture can be inoculated directly into conventional blood culture broth. *Specimen*- If isolates not available, then collection of Blood or CSF is required for testing. No transport media is required, but specimens should be shipped at 4°C
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Specimens from sterile sites should be shipped as soon as possible. If processing is delayed, specimens should be held at 35°C in an incubator for no longer than 48 hours. Ship at 4°C. Specimens from non-sterile sites require prompt handling. If processing is delayed, the materials should be kept at 4°C or frozen at -20°C if testing delays are to exceed 48 hours. Ship at 4°C. Stools should be shipped frozen on dry ice. Use triple packaging system for courier or USPS. Mark outer packaging as "UN3373-Biological Substances, Category B".

Test Name:	***Listeria monocytogenes* Isolation, Food**
Use of Test:	To support epidemiologic evidence implicating a food as a possible source of illness.
Special Instructions:	Food samples must be submitted through local or state public health agencies as part of an outbreak investigation (one or more ill consumers). Epidemiology needs to be notified of any food samples being sent for testing. ASL has limited media available on hand and needs to be notified by Epidemiology. All food items must clearly be labeled with the name of the food source and date of collection
Test Includes:	Isolation and identification of *Listeria monocytogenes.*
Turnaround Time:	3 to 7 days.
Sample and Volume:	At least 200 grams of the solid product or 100 ml of liquid.
Sample Container:	Original sample container as submitted by inspector or other sterile leak proof container.
Sample Collection:	Collect food aseptically and place in sterile whirlpack bags or other sterile, leak proof container. Keep all samples refrigerated except those samples received frozen which should be maintained in the frozen state.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Triple package samples**.** Transport samples on ice or on pre-frozen cold packs, in appropriate packaging.

Measles

Test Name: **Measles Antibody IgM (EIA)**

Use of Test: Determination of measles infection.

Significant Result: Positive IgM indicates current or recent measles infection.

Limitations: IgM may be negative if the specimen is collected prior to the appearance of or before the third day after rash onset. Cannot distinguish between antibody produced in response to vaccine versus wild strain measles.

Turnaround Time: 3 days

Sample and Volume: Whole blood (10-15mL) collected aseptically in a red top vacutainer tube or single serum (2-3mL).

Sample Collection: Serum collected 3-7 days after the appearance of rash.

Forms Required: The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.

Shipping Requirements: Due to the intense heat in the summertime, it is advisable to ship the specimens cold to prevent damage to the specimen. Whole blood samples may be sent on cool packs and not frozen. Serum samples, if not tested within 7 days or already frozen, should be shipped frozen to ASHL on dry ice.

If sent by courier:

1. Blood and blood products sent in vacutainer tubes should first be placed in a plastic falcon tube.
2. The specimen should then be placed in a plastic specimen bag with separate compartments for the submission form and the specimen.
3. Pack the specimen and its form in absorbent material
4. Mark the outer packaging "UN3373- Biological Substances, Category B."

If sent by mail:

1. Blood and blood products sent in vacutainer tubes should first be placed in a plastic falcon tube.
2. Check with the Post Office for current postage requirements.
3. Wrap the submission form around the falcon tube, and place the falcon tube inside a Styrofoam container or cardboard mailer. Pack the specimen in absorbent material.
4. Mark the outer packaging "UN3373- Biological Substances, Category B."

Test Name: **Measles, Molecular Typing PCR**

Use of Test: Detection of measles RNA virus

Turnaround Time: 2 days

Sample: Nasopharyngeal swab, throat swab, whole blood, and urine (5mL).

Sample Collection: Nasopharyngeal swab: The pharynx is swabbed vigorously with a cotton swab moistened with collection medium free of serum such as Hanks, and then placed in a transport container containing Hanks Buffered Saline Solution (HBSS). Specimens submitted should not be frozen.
Throat Swab: The pharynx is swabbed vigorously with a cotton swab moistened with collection medium free of serum such as Hanks, and then placed in a transport container containing Hanks Buffered Saline Solution (HBSS). Samples submitted should not be frozen.
Urine: Clean catch urine collected in a sterile container.

Forms Required: The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.

Shipping Requirements: Use a triple packaging system for transporting by courier. Mark the outer packaging as "UN3373- Biological Substances, Category B." **Ship cold**

Mumps

Test Name: **Mumps Antibody IgM (EIA)**
Use of Test: Determination of mumps infection.
Significant Result: Positive IgM indicates probable current or recent mumps infection.
Limitations: (1) 30% of primary mumps may be sub-clinical. (2) Mumps infection can occur without parotitis. (3) Parotid swelling may have other viral/bacterial causes (Coxsackie, Echo, Parainfluenza, Influenza A, HSV, and *S. aureus*). (4) Parotid pain or swelling may have a non-infectious cause.
Turnaround Time: 3 days
Sample and Volume: Whole blood (10-15mL) collected aseptically in a red top vacutainer tube or single serum (2-3mL).
Sample Collection: Serum collected 2-14 days post onset.
Forms Required: The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements: Due to the intense heat in the summertime, it is advisable to ship the specimens cold to prevent damage to the specimen. Whole blood samples may be sent on cool packs and not frozen. Serum samples, if not tested within 7 days or already frozen, should be shipped frozen to ASHL on dry ice.

If sent by courier:

1. Blood and blood products sent in vacutainer tubes should first be placed in a plastic falcon tube.
2. The specimen should then be placed in a plastic specimen bag with separate compartments for the submission form and the specimen.
3. Pack the specimen and its form in absorbent material
4. Mark the outer packaging "UN3373- Biological Substances, Category B."

If sent by mail:

1. Blood and blood products sent in vacutainer tubes should first be placed in a plastic falcon tube.
2. Check with the Post Office for current postage requirements.
3. Wrap the submission form around the falcon tube, and place the falcon tube inside a Styrofoam container or cardboard mailer. Pack the specimen in absorbent material.
4. Mark the outer packaging "UN3373- Biological Substances, Category B."

Test Name: **Mumps, Molecular Typing PCR**
Use of Test: Detection of mumps RNA virus
Turnaround Time: 2 days
Sample: Nasopharyngeal swab, throat swab, CSF, buccal, sputum and urine (5mL).
Sample Collection: Nasopharyngeal swab: The pharynx is swabbed vigorously with a cotton swab moistened with collection medium free of serum such as Hanks, and then placed in a transport container containing Hanks Buffered Saline Solution (HBSS). Specimens submitted should not be frozen.
Throat Swab: The pharynx is swabbed vigorously with a cotton swab moistened with collection medium free of serum such as Hanks, and then placed in a transport container containing Hanks Buffered Saline Solution (HBSS). Samples submitted should not be frozen.
Urine: Clean catch urine collected in a sterile container.
Forms Required: The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements: Use a triple packaging system for transporting by courier. Mark the outer packaging as "UN3373- Biological Substances, Category B." **Ship cold**

Neisseria meningitidis

Test Name: ***Neisseria meningitidis* Culture & Serogrouping**
Use of Test: Confirmation and serogrouping of *Neisseria meningitidis.*
Limitations: Testing performed only on organisms isolated from normally sterile sites.
Turnaround Time: 5 days
Sample: Pure culture on chocolate agar slant or culture plate.

Specimen Collection:	*Isolate*- In the event of an outbreak, the hospital or commercial laboratory, should forward the isolate to ASHL. The isolate should be a pure young culture on chocolate agar slant or culture plate. If the report is after hours, the county epidemiologist should also notify ADHS through the emergency after hours number.
Sample Container:	It is recommended that the containers be insulated during very hot or very cold weather.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	All cultures must be transported with minimum delay since viability is readily lost. Use a triple packaging system for transporting by courier or USPS. Mark the outer packaging "UN3373-Biological Substances, Category B." Mark "DO NOT REFRIGERATE" on the outside of the package.

Norovirus

Test Name:	**Norovirus, Molecular Typing PCR**
Use of Test:	Detection of norovirus RNA in stool or vomitus specimens
Turnaround Time:	7 days
Sample:	Vomitus or stool. 10-15 mL in volume
Sample Collection:	Specimens should be collected as soon as possible after symptom onset, preferably within the first 24 hours of collection. Vomitus 10-15mL must be submitted fresh in a sterile container. Stool 10-15mL can be submitted fresh, in a sterile container. DO NOT FREEZE. DO NOT PUT IN PRESERVATIVES OR ANY OTHER MEDIA.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Use triple packaging system for transporting by courier only. Mark the outer packing "UN3373-Biological Substances, Category B". **Ship cold**

Rubella

Test Name: **Rubella Antibody, IgM**

Use of Test: Determination of rubella infection

Test Includes: Rubella IgM EIA

Significant Result: Positive IgM indicates current or recent rubella infection.

Limitations: IgM may be negative if the specimen is collected prior to the appearance of or before the third day after rash onset.

Turnaround Time: 5 days

Sample and Volume: Whole blood (10-15mL) collected aseptically in a red top vacutainer tube or single serum (2-3mL).

Sample Collection: Serum collected 3-7 days after appearance of rash.

Forms Required: The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.

Shipment Requirements: Due to the intense heat in the summertime, it is advisable to ship the specimens cold to prevent damage to the specimen. Whole blood samples may be sent on cool packs and not frozen. Serum samples, if not tested within 7 days or already frozen, should be shipped frozen to ASHL on dry ice.

If sent by courier:

1. Blood and blood products sent in vacutainer tubes should first be placed in a plastic falcon tube.
2. The specimen should then be placed in a plastic specimen bag with separate compartments for the submission form and the specimen.
3. Pack the specimen and its form in absorbent material.
4. Mark the outer packaging "UN3373- Biological Substances, Category B."

If sent by mail:

1. Blood and blood products sent in vacutainer tubes should first be placed in a plastic falcon tube.
2. Check with the Post Office for current postage requirements.
3. Wrap the submission form around the falcon tube, and place the falcon tube inside a Styrofoam container or cardboard mailer. Pack the specimen in absorbent material.
4. Mark the outer packaging "UN3373- Biological Substances, Category B."

Salmonella

Test Name:	***Salmonella* spp. Culture and Serotyping**
Use of Test:	To screen for bacterial cause of diarrheal illness
Special Instructions:	Stool specimens must be properly submitted, with transport containers not overfilled and with transport medium not removed. Specimen jars must be tightly closed and not leaking when received. The time interval between collection of the specimen and receipt in the Lab must not be greater than 5 days.
Test Includes:	Isolation and species identification of *Salmonella* species. Tests include serotyping for *Salmonella spp*. Problematic isolates are submitted to CDC for serotyping. Tests also include pulsed-field gel electrophoresis (PFGE).
Turnaround Time:	14 days
Sample:	*Isolate*- In the event of an outbreak, the hospital or commercial laboratory, should forward the isolate to ASHL. The isolate should be a pure culture on TSI or nutrient agar slant or culture plate *Specimen*- If isolate not available, then collection of one of the following specimens is required for testing: Stool, Rectal swab in Cary-Blair media or blood.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Package and ship with label on outer packaging as "UN3373-Biological Substances, Category B".

Test Name:	***Salmonella* Isolation, Food**
Use of Test:	To support epidemiologic evidence implicating a food as a possible source of illness.
Special Instructions:	Food samples must be submitted through local or state public health agencies as part of an outbreak investigation (one or more ill consumers). All food items must clearly be labeled with the name of the food source and date of collection
Test Includes:	Isolation and identification of *Salmonella* species
Turnaround Time:	3-7 days.
Sample and Volume:	At least 200 grams of the solid product or 100 ml of liquid.
Sample Container:	Original sample container as submitted by inspector or other sterile leak proof container.
Sample Collection:	Collect food aseptically and place in sterile whirlpack bags or other sterile, leak proof container. Keep all samples refrigerated except those samples received frozen which should be maintained in the frozen state.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Triple package samples**.** Transport samples on ice or on prefrozen cold packs, in appropriate packaging.

Shigella

Test Name:	***Shigella species* Culture and Serotyping**
Use of Test:	To screen for bacterial cause of diarrheal illness.
Special Instructions:	Stool specimens must be properly submitted, with transport containers not overfilled and with transport medium not removed. Specimen jars must be tightly closed and not leaking when received. The time interval between collection of the specimen and receipt in the Lab must not be greater than 5 days.
Test Includes:	Isolation and species identification of *Shigella* spp. Tests include serotyping for *Shigella* spp. Problematic isolates are submitted to CDC for serotyping. Tests also include Pulsed-field gel electrophoresis (PFGE)
Turnaround Time:	5 days
Sample:	*Isolate*- In the event of an outbreak, the hospital or commercial laboratory, should forward the isolate to ASHL. The isolate should be a pure culture on TSI or nutrient agar slant or culture plate *Specimen*- If isolate not available, then collection of one of the following specimens is required for testing: Stool, Rectal swab in Cary-Blair media or blood.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Package and ship with label on outer packaging as "UN3373-Biological Substances, Category B".

Test Name:	***Shigella* Isolation, Food**
Use of Test:	To support epidemiologic evidence implicating a food as a possible source of illness.
Special Instructions:	Food samples must be submitted through local or state public health agencies as part of an outbreak investigation (one or more ill consumers). All food items must clearly be labeled with the name of the food source and date of collection
Test Includes:	Isolation and identification of *Shigella* species.
Turnaround Time:	3-7 days.
Sample and Volume:	At least 200 grams of the solid product or 100 ml of liquid.
Sample Container:	Original sample container as submitted by inspector or other sterile leak proof container.
Sample Collection:	Collect food aseptically and place in sterile whirlpack bags or other sterile, leak proof container. Keep all samples refrigerated except those samples received frozen which should be maintained in the frozen state.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Triple package samples**.** Transport samples on ice or on prefrozen cold packs, in appropriate packaging.

Vibrio

Test Name:	***Vibrio* spp. Culture**
Use of Test:	To screen for bacterial cause of diarrheal illness.
Special Instructions:	Cultures suspected to contain *Vibrio cholera* are tested with commercial biochemical systems. Cultures presumptively identified as *Vibrio cholera* will be tested against specific antisera to determine the serogrouping of the isolate. *Vibrio cholera* strains will fall into two groups based on this testing. Serogroup O1 is associated with epidemic cholera; non-O1 strains may cause cholera-like illness, but are not involved in epidemics. Serogroup O1 isolates are typed at ASHL and sent to CDC for confirmation.
Turnaround Time:	5 days. If sent to CDC for Serogroup O1 confirmation turnaround time may vary
Sample and Volume:	Stool specimen (approximately one gram)
Sample Collection:	*Isolate*- In the event of an outbreak, the hospital or commercial laboratory, should forward the isolate to ASHL. The isolate should be a pure culture on TSI or nutrient agar slant or culture plate *Specimens*- Stool specimens should be collected early, preferably within 24 hours of onset of illness, and before the administration of antibiotics. Rectal swabs or fecal material should be placed in Cary-Blair transport medium. The Arizona State Public Health Laboratory will provide agencies with Cary-Blair Medium.
Forms Required:	The ASHL Microbiology Submission Form must be submitted with each specimen. The fields that are required for specimen processing include: Patient first and last name, age, sex, date of birth, submitting agency name, specimen collection date, and specimen type.
Shipping Requirements:	Specimens held in Cary-Blair Medium should be transported at 5-25^{o}C. DO NOT REFRIGERATE. Use triple packaging system for courier or USPS. Mark outer packaging as "UN3373-Biological Substances, Category B".

Bacterial Typing

Test Name:	**Bacterial Typing, Pulsed Field Gel Electrophoresis (PFGE)**
Use of Test:	To determine if isolates from different patients or sources (i.e. patient and environmental isolates) have a common origin. Test is very discriminatory, and is primarily used in food related outbreaks. ASHL bacteriology laboratory can currently perform PFGE on all confirmed isolates of *Salmonella* spp., *Shigella* spp., *E.coli* O157:H7, *Campylobacter* spp. and *Listeria* spp. AHSL routinely performs PFGE on all isolates if these organisms have been identified. PFGE for all other organisms isolated would be sent to CDC for PFGE. In the event of a Nosocomial outbreak, and by request only, ASHL can conduct PFGE on *Acinetobacter* spp., *Pseudomonas* spp., *Burkholderia* spp. PFGE is not a diagnostic test and is used in conjunction with epidemiological findings that result from intense investigation. Accurate identification of all isolates must be confirmed prior to PFGE testing. Results are interpreted based on banding patterns
Test Includes:	Bacterial strain typing using restriction endonucleases (enzyme) digestion of bacterial chromosomal DNA.
Turnaround Time:	1 week for pure cultures. Turn around time is delayed if patient specimens are submitted or if the isolate submitted is contaminated.
Sample:	Pure isolates must be received on agar slants

SECTION V: ARIZONA STATE PUBLIC HEALTH LABORATORY MISCELLANEOUS DOCUMENTS

SPECIMEN REJECTION POLICY

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

- The quantity of the specimen is not sufficient for examination
- The specimen was too long in transit between the time of collection and receipt in the laboratory
- The specimen was broken or leaked in transit
- Clinical/epidemiological information submitted with the specimen was either insufficient or incomplete
- Specimen was submitted in an improper container, transport media or preservative
- Blood specimens are hemolyzed or contaminated
- The identifier on the specimen does not match the identifier on the submission form, or there is no identification on the specimen
- Materials for rabies examination are too decomposed to test
- Test is available at a hospital/independent laboratory and has been discontinued by the State Laboratory
- Reference cultures are contaminated

Exceptions to this policy will be considered due to extenuating circumstances; however, final approval to make an exception will only be made by the Laboratory Director, Bureau Chief or Assistant Bureau Chief delegated this responsibility.

ASHL MICROBIOLOGY SUBMISSION FORM

For an editable version of the form, go to http://www.azdhs.gov/lab/micro/pdf/micro-submission-form.pdf

Bureau of Laboratory Services
250 N. 17th Avenue Phoenix, Arizona 85007-3231
Tel: (602) 542-1188 Fax: (602) 364-0758
Victor Waddell, Ph.D., Bureau Chief

For Department Use Only

PATIENT INFORMATION

Last name: _____ First name: _____ MI: ____
DOB (MM/DD/YYYY): _____ Age: ____ Sex: ☐M ☐F ☐T Patient ID: _____
Street address: _____ City: _____ State: ____ Zip: _____ County: _____
Ethnicity: Hispanic ☐ Yes ☐ No Race: ☐White ☐African American ☐Asian ☐American Indian/Alaska Native ☐Other

SUBMITTING AGENCY INFORMATION

Agency name: _____ Agency ID Code: _____
Street address: _____ City: _____ State: ____ Zip: _____ County: _____
Contact name: _____ Tel: _____

ORDERING PROVIDER INFORMATION

Provider name: _____ Tel: _____
Facility name: _____ Tel: _____
Street address: _____ City: _____ State: ____ Zip: _____ County: _____

SPECIMEN INFORMATION & TYPE

Collection date: _____

☐Serum ☐Acute ☐Convalescent	☐Plasma	☐Whole blood	☐CSF
☐Swab, site:	☐Urine	☐Sputum	☐Stool
Other, specify:	☐Tissue, specify:	☐Wound, site:	☐Body fluid, specify:

☐Clinical ☐Reference: ☐Broth ☐Isolate Reason for testing: ☐Outbreak ☐Surveillance ☐Post Mortem ☐Screening ☐Diagnostics
Outbreak name: _____

VIROLOGY
- ☐CMV Culture
- ☐Enterovirus Culture
- ☐Herpes Culture
- ☐Influenza
- ☐Norovirus PCR
- ☐Reference Virus Culture
- ☐Respiratory Virus Culture
- ☐Other _____

SELECT AGENTS**
- ☐Avian Influenza H5N1
- ☐*Bacillus anthracis*
- ☐*Brucella* spp.
- ☐*Burkholderia* spp.
- ☐*Francisella tularensis*
- ☐*Orthopox
- ☐*Q Fever
- ☐*SARS
- ☐*Yersinia pestis*

**Please refer to the Guide to Laboratory Services: Microbiology, Section 8 for the definition of select agents and the testing available at Arizona State Laboratory

BACTERIOLOGY
- ☐**Bordetella pertussis*
- ☐*Campylobacter* spp.
- ☐**Clostridium botulinum* toxin
- ☐**Corynebacterium diphtheriae*
- ☐Enteric culture
- ☐*Escherichia coli* / Shigatoxin
- ☐*Haemophilus influenzae*
- ☐*Legionella* spp.
- ☐*Leptospira* spp.
- ☐*Listeria* spp.
- ☐*Neisseria gonorrhoeae*
- ☐*Neisseria meningitidis*
- ☐*Salmonella* spp.
- ☐*Shigella* spp.
- ☐*Streptococcus pneumoniae*
- ☐*Vibrio*
- ☐VISA/VRSA
- ☐*Yersinia* (Non-pestis) Culture
- ☐Other: _____

PARASITOLOGY†
- ☐Arthropod ID
- ☐Blood/Tissue
- ☐Intestinal
- ☐Pinworm
- ☐Worm ID

† For malaria testing please collect patient travel history

MYCOBACTERIOLOGY
- ☐Culture
- ☐ID (Referred Culture)
- ☐*Nucleic Acid Amplification
- ☐Smear
- ☐Susceptibility

SEROLOGY
- ☐**Borrelia burgdorferi* EIA (Lyme)
- ☐**Brucella* Tube Ag.
- ☐Coccidioides Serology Panel ☐IDTP ☐IDCF
- ☐Dengue IgM EIA
- ☐Diagnostic Hepatitis Panel EIA ☐HBsAG ☐HBcIgM ☐HAV IgM
- ☐**Francisella tularensis* Tube Ag.
- ☐*Hantavirus IgG EIA
- ☐*Hantavirus IgM EIA
- ☐Hepatitis Anti-HAV IgM
- ☐Hepatitis Anti-Core IgM
- ☐Hepatitis Anti-HCV
- ☐Hepatitis HBsAG
- ☐*Measles IgM EIA
- ☐Mumps IgM EIA
- ☐Rickettsial Panel IFA ☐Rickettsial Q Fever ☐Rickettsial Spotted Fever ☐Rickettsial Typhus Fever
- ☐*Rubella IgM EIA
- ☐St. Louis Encephalitis EIA
- ☐*Treponema pallidum* CSF VDRL
- ☐*Treponema pallidum* Serum TP-PA, RPR
- ☐Western Equine Encephalitis EIA
- ☐West Nile Virus EIA
- ☐**Yersinia pestis PHA*
- ☐Other: _____

Submitting Lab Findings or Preliminary ID: _____

*Prior notification is required for: *Bacillus anthracis*, *Bordetella pertussis*, *Brucella* spp., *Clostridium botulinum* toxin, *Corynebacterium diphtheriae*, emerging or exotic diseases, *Francisella tularensis*, Hantavirus, *Borrelia burgdorferi* (Lyme), Measles, Mycobacteria NAA, Rubella, or *Yersinia pestis* testing. CALL: (602) 364-3676

ALL FIELDS HIGHLIGHTED IN YELLOW ARE REQUIRED FOR SPECIMEN PROCESSING. IN ADDITION, AT LEAST ONE TEST MUST BE REQUESTED.

Patient address and telephone number are required, when available, per R9-6-204(B3) http://www.azdhs.gov/lab/micro/index.htm

Updated 10/20/2010

REQUESTING COLLECTION KITS AND MAILING CONTAINERS

Supplies ordered from the Arizona State Laboratory are to be used ONLY to submit specimens to the State Laboratory. There are two Request for Materials forms currently in use: a Newborn Screening Supplies Request Form and a Request Form for all other supplies available from the State Laboratory.
Supplies can be requested by mailing, faxing, calling, or emailing the
Receiving Section at:

Arizona Department of Health Services
Bureau of State Laboratory Services
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Please request materials before they are required as the expected turn around 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 medium has changed characteristics. Dispose of the media properly and order replacement supplies. The following table provides information regarding submission forms, kit contents and expiration period of each kit. Submitters may use the Request for Materials Form to order entire kits, as well as individual components.

KIT	CONTENTS	SHELF LIFE
Enteric Kit	Instruction Sheet Baggie Metal Container Cardboard Mailer Media: Cary Blair Store +20 to +25°C	6 months
Influenza Kit	Microbiology Submission Form Instruction Sheet N/P Swab Media: Hanks Blue Top. Store +2 to +8°C	2 months
Leptospira Culture Media	Leptospira Media Instructions	6-12 months
Ova & Parasite Kit	Instruction Sheet Baggie Metal Container Cardboard Mailer Media: PVA & Formalin. Store +20 to +30°C	1-2 years
Pertussis Kit	Microbiology Submission Form Instruction Sheet Polyester N/P Swab (metal handle) Media: Regan Lowe. Store +2 to +8°C	2 months
Tuberculosis Kit	Sputum Vial Metal Container Cardboard Mailer Store +20 to +25°C	