Directory of Services

PUBLIC HEALTH LABORATORY

ARKANSAS DEPARTMENT OF HEALTH

March 2017

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GENERAL LABORATORY INFORMATION

Introduction

The alphabetical directory contains a list of available tests at the Arkansas Public Health Laboratory. Test protocols include turnaround time, specimen requirements and other pertinent information.

The testing menu of the Public Health Laboratory provides many tests not commonly performed in diagnostic clinical laboratories and is designed to support public health programs. The Public Health Laboratory is committed to providing accurate and timely results for all tests that are offered. Turnaround times may vary widely depending on incubation time, confirmation tests required prior to reporting results, and transport time.

Each test protocol provides information on patient, collection and specimen requirements. Rejection criteria and turnaround times are given for each test. These requirements must be followed. Care must be used in packaging the specimen for delivery. Specimens should reach the Public Health Laboratory promptly, same day or next day, if possible. Delays may render the specimens unsuitable for analysis.

Private submitter specimens may be delivered to the Local Health Unit for inclusion with their daily shipment (Monday through Friday). Private submitter specimens must be packaged for shipment prior to dropping off at the Local Health Unit. Exception: TB/Mycology specimens may be packaged by Local Health Unit staff. TB/Mycology specimens must have completed test requisitions forms for each specimen. The submitter information used when requesting tests determines where test result reports are routed.

Normal working hours at the Public Health Laboratory are Monday through Friday, 8:00 a.m. to 4:30 p.m. Tests are set up during these hours, unless otherwise indicated. For exceptions, look at specific tests.

Some specimens require special collection kits from the Public Health Laboratory. Follow the instructions included with the kits for both collection and mailing of specimens. Kits may be acquired from the Local Health Unit.

Most specimens for testing are either diagnostic or/and must be transported in containers which comply with appropriate shipping regulations for transportation of Hazardous Materials. It is the shipper's responsibility to package and ship specimens for diagnostic purposes in compliance with all shipping regulations from the Department of Transportation (DOT) and International Air Transport Association (IATA) that may apply. If in doubt how a specimen should be shipped by ground refer to the 49 Code of Federal Regulation Parts 100 to 185 if shipping by ground. These regulations are available at: http://hazmat.dot.gov/enforce/hmenforce.htm#interp. If shipping a specimen by air the IATA regulations must be followed. These regulations are covered in the current edition of IATA Dangerous Goods Regulations. This book may be purchased at https://www.iataonline.com/Store/default.htm.

Specimen Labels

All specimens must be labeled with the two unique identifiers which can include patient name, date of birth, hospital number, etc. Since inks may run when exposed to moisture, use waterproof markers to label specimens. Testing may be delayed or not performed if the information is incomplete or illegible.

Requisition Forms and Acquiring a Submitter Code

Requisition forms must be completely filled out. Each submitter must obtain a submitter code to use when submitting a specimen to the Public Health Laboratory. Forms may be obtained by contacting the Public Health Laboratory IT supervisor at 501-661-2450. Newborn screening forms may be obtained by contacting the Newborn Screening Supervisor at 501-661-2445

The required information may vary slightly depending on the specific form but includes the following:

- Patient's name
- Patient's date of birth
- Patient's sex
- Patient's race or other unique identifiers
- Authorized requestor
- Submitter information (name, address, etc.) and submitter code*
- Test(s) requested
- Source of specimen or type of specimen
- Date specimen was collected and time of collection, if applicable

*A submitter code may be obtained for a facility by contacting the IT supervisor at 501-661-2450.

All submitters should complete the appropriate submitter test requisition form and include it with the specimen for shipment. Please place the requisition between the secondary container and the outer shipping box. If a specimen is taken to the Local Health Unit for shipment to the Public Health Laboratory via the courier the sample must be appropriately packaged for shipment. Local Health Units may not repackage specimens from private submitters.

Kits

Some tests require special collection and/or mailing kits. Kits may be acquired from the Local Health Unit.

- Neonatal collection kit (dried blood spots) for newborn screening
- Adult sickle cell card
- Influenza
- Pertussis
- Rabies
- Enteric Pathogen (Stool Culture)
- Mycobacteria (TB)/Mycology – Sputum for Tuberculosis/Mycology
- Ova and parasites
- Chlamydia/Gonorrhea Gen Probe collection kits
    - Aptima Unisex Swab
    - Aptima Urine collection kit

Specimen Collection/Handling/Shipping

Proper specimen collection is important to ensure accurate results. Each test listed indicates the correct collection container and required volume. Many tests that require serum or plasma cannot be performed on hemolyzed specimens. Improper shipping of the specimen may cause delays in testing or specimen rejection. The shipping requirements must be followed when transporting a specimen. Shipping requirements are given for each test. Cold packs or to keep the specimen chilled may be required for shipping. To prevent breakage of specimen, packing should include cushioning material between specimen containers. Check tops of specimen containers to ensure specimens do not leak during transportation. Specimens must reach the Public Health Laboratory within the time indicated for all testing to be performed. The test request should be placed between the secondary and tertiary packaging to prevent damage to the requisition in case of sample leakage.

The following specimens should be transported at room temperature:

- Parasitology Specimens
- Enteric Specimens
- Bacteriology/Special Microbiology
- Adult Sickle Cell (Dried Blood Spot) Specimens (packaged in a paper envelope; NOT IN PLASTIC BAG)
- Newborn Screening Specimens (packaged in a paper envelope; NOT IN PLASTIC BAG)
- Chlamydia/Gonorrhea

The following specimens should be transported at cold temperature:

- B. Pertussis
- Flu A/B
- TB/Mycology
- Rabies
- HIV
- Syphilis
- Norovirus
- Group B Strep
- Hepatitis
- Blood Type and screen
- Rubella IgG

Collection of Serology Specimens

The collection information below applies to the following tests:

- Hepatitis B IgM Core Antibody (HBclgM)
- Hepatitis B Surface Antibody (HBsAb)
- Hepatitis B Surface Antigen (HbsAg)
- Hepatitis B Total Core Antibody (Total HBcAb)
- Hepatitis A IgM Antibody (HAV IgM)

- Hepatitis C Antibody (HCV)
- HIV
- Rubella IgG
- Syphilis

1. Use a serum separator tube (SST) that is 5mL or less filled to 90%. Fill 5 mL tubes to 4.5 mL or 3.5 mL tubes to 3.0 mL
2. Invert 5 times before allowing to clot.
3. Place tube in the vertical position and allow to clot for a minimum of 30 minutes.
4. Centrifuge within 2 hour of collection.
5. Centrifuge for at least 15 minutes.
6. Inspect tube to assure all cellular products and visible matter are separated from serum (No visible cellular products should be seen in gel after centrifugation).

Newborn Screening – Heel stick Collection Procedures

Fill out the Neonatal Screening (HL-11) form. Neonatal Screening forms may be obtained by contacting the Newborn screening Supervisor at 501-661-2445. Ensure that ALL data elements on the form are complete, accurate, and consistent. PRINT clearly using a ball point pen. Press firmly to assure legibility of all copies.

1. Hold infant's limb in a dependent position to increase venous pressure.
2. Clean heel thoroughly. Wipe with alcohol and air dry before puncturing.
3. Do not use EDTA or citrate tubes or capillaries for collection.
4. Puncture heel with sterile lancet deep enough to assure free flow of blood.
5. Gently wipe off first drop of blood.
6. Apply gentle pressure and allow a large drop of blood to form.
7. Touch the filter paper directly to the blood drop and fill each circle with a single application of blood. The circle must be filled completely and uniformly. Total saturation of the circles must be evident when the paper is viewed on both sides.
8. Fill all circles COMPLETELY.
9. Allow blood spots to air dry thoroughly for a minimum of three hours at ambient temperature. Keep away from sunlight. Do not stack or heat during the drying process.
10. Cover dried blood spots with fold-over tab. DO NOT tape shut.
11. Transport the dried blood spot specimens in a paper envelope. Do not package in an airtight, leak-proof plastic bag. Heat buildup and moisture accumulation in a sealed bag can adversely affect the specimen. DO NOT fold the forms but mail flat in an appropriately sized envelope. Mark the envelope "Newborn Screening".
12. Mail specimens to:

    Public Health Laboratory: Attention: Newborn Screening Laboratory
    Arkansas Department of Health
    201 S. Monroe Street
    Little Rock, AR 72205

Gonorrhoea/Chlamydia Specimen Packaging

All swab and urine specimens collected must be shipped individually wrapped to avoid possible contamination between specimens. The use of small snack bags is acceptable

provided that each of the individual bags is placed in the biobag. Biobags may be used to separate the specimens however, only one specimen per bag is allowed.

Rejection Information

Specimens are rejected for the following reasons:

- Not collected in the appropriate containers
- Collection containers not within expiration date
- Inadequate specimen volume for all testing, including repeat or confirmatory testing
- Not submitted with the 2 unique identifiers
- Not shipped in appropriate transport containers
- Not shipped at the acceptable temperature range
- Not received within acceptable timeframe for testing
- Lab accidents
- Tests requested not available

See additional causes for rejection listed in each specific test.

Private Submitter Submissions

All specimens except TB/Mycology specimens must be prepackaged by the private submitter before shipping to the Public Health Laboratory via Courier.

Private submitters delivering packages to the Local Health Unit will be ask to record information about the package on the Private Submitter Shipping Log. A fluorescent sticker and duplicate green barcode will be place on the package to help track packages as they are transported by the courier to the Public Health Laboratory.

Contact Information

Contact the Public Health Laboratory with questions, comments or complaints. The e-mail address for the laboratory is adhlab@arkansas.gov. A web site with additional information can be found at www.phl.arkansas.gov. See page 11 of this Directory for additional contact information.

Rabies

A rabies specimen is irreplaceable. The Rabies test is a test conducted on animals. Please prepare and pack your specimen carefully! Specimens that decompose in transit are not suitable for testing and will be rejected.

IF you have questions concerning care of bitten humans, immunization and quarantine of animals, call the State Public Health Veterinarian at (501) 280-4136.

1. Remove the head from the animal without damaging the brain and allow the blood to drain. Do NOT remove the head of bats or any animal smaller than your hand. Do NOT ship live animals
2. Pack rabies specimens by placing the specimen in the leak-proof Ziploc bag. (Provided in the Rabies kit). Chill the specimen in a refrigerator prior to packaging for shipment.

3. Place the chilled specimen and at least two (2) frozen cold packs ice inside the Styrofoam insulator in the plastic shipping container and place the Styrofoam lid on the Styrofoam bucket. For large specimens it is advisable to use more than two cold packs.
4. Place the completed rabies examination form (HL-12) on top of the Styrofoam lid. Do not place the form inside the Styrofoam container with the specimen.
5. Seal the plastic shipping container with the plastic lid and place sealed bucket in the fiberboard box.
6. Place your return address label and the Arkansas Department of Health address label on the plastic shipping container before transporting. Send to:

   Arkansas Department of Health
   Public Health Laboratory
   201 S. Monroe
   Little Rock, AR 72205
7. Deliver the specimen as soon as possible. If a person has been bitten, it is strongly recommended that someone bring the specimen to the laboratory.

During normal business hours (8:00 to 4:30) on Monday through Thursday, specimens may be dropped off at your nearest local health unit for delivery to the laboratory by the next day. Specimens can also be delivered directly to the laboratory by UPS. Specimens that are collected on Fridays, weekends or holidays should be kept cool until the following Monday for shipment. Rabies buckets and boxes can be obtained from the nearest Local Health Unit.

The laboratory must be notified of all specimens arriving after normal business hours and the method of shipment, (call 671-1429 or 661-2200).

Communicable Disease Reporting

Arkansas statutes require reporting of certain diseases to the Arkansas Department of Health. In addition, the following bacterial isolates must be submitted to the Public Health Laboratory for further testing: any suspected agent of Bioterrorism, *Neisseria meningitidis; Salmonella sp.; Enterotoxigenic E. coli; Listeria sp.; Staph. aureus,* vancomycin resistant or intermediate susceptible; *outbreak*-related *Campylobacter sp. and Shigella sp.,* or on request*; Haemophilus influenzae (*invasive*).* See next page for instructions.

Arkansas Department of Health (ADH) Mandatory Reportable Diseases List and Instructions

The "Rules and Regulations Pertaining to Reportable Disease" adopted by the Arkansas State Board of Health in 1977 pursuant to the authority conferred by Act 96 of 1913 (Arkansas statutes, 1947, Section 82-110) Section III, states "The responsibility for reporting certain communicable diseases is the duty of EVERY physician, practitioner, nurse, superintendent or manager of a dispensary, hospital, clinic, nursing or extended care home and laboratory personnel examining human specimens resulting in the diagnosis of notifiable diseases or any person in attendance on a case of any disease or conditions declared notifiable."

The following diseases/conditions (*suspected or confirmed*) are to be reported immediately to the ADH:

Anthrax	**Emerging Threat Agents**	**Pertussis**	**Q Fever**	**Tularemia**
Botulism (all types)	**Meningococcal Infection**	**Plague**	**SARS (coronavirus)**	**Typhus**
Chemical Agents of Terrorism	**Novel Influenza Virus**	**Poliomyelitis**	**Smallpox**	**Viral Hemorrhagic Fevers**

TO REPORT DISEASES IMMEDIATELY VIA TELEPHONE, CALL 501-537-8969 (Local/Pulaski Co.—8:00-4:30, M-F) AFTER HOURS AND ON WEEKENDS, PLEASE CALL 1-800-554-5738

The following diseases of public health significance are to be reported to the Arkansas Department of Health within 24 hours of diagnosis. Reports should include: 1) the reporter's name, location and phone number; 2) the name and onset date of the disease; 3) the patient's name, address, phone number, age, sex and race; 4) the attending physician's name, location and phone number; 5) any pertinent clinical, laboratory, and treatment information. Report by Fax to 501-661-2428; 24 hr. answering machine 800-482-8888; in person to 501-537-8969.

*AIDS**
Anaplasmosis
Arboviral, all types
Babesiosis
Blastomycosis
Brucellosis
CD4+ T-lymphocyte count
**Campylobacteriosis
Chagas Disease
Chancroid
Chlamydial infections
Coccidioidomycosis
Creutzfeld-Jakob Disease
Cryptosporidiosis
Cyclosporiasis
Dengue virus infections
Diphtheria
Ehrlichiosis
**E. coli Shiga toxin producing
Encephalitis, all types
Food poisoning, all types
Giardiasis
Gonorrhea
**Haemophilus influenzae, invasive
Hansen's Disease (Leprosy)
Hantavirus Pulmonary Syndrome
Hemolytic-uremic Syndrome
HbsAg-positive pregnant female
Hepatitis (type A, B, C, or E)
Histoplasmosis
*HIV (Human Immunodeficiency Virus)
Influenza (viral type, if known)
Influenza deaths, all ages
Legionellosis
**Listeriosis
Lyme Disease
Malaria
Measles (Rubeola)
Meningitis, all types
Mumps
Psittacosis
Rabies, human and animal
Rickettsiosis, Spotted Fever (RMSF)
Rubella, including congenital infection
**Salmonellosis (including Typhoid Fever)
**Shigellosis
**Staphylococcus aureus infection:
Vancomycin-intermediate (VISA)
Vancomycin-resistant (VRSA)
**Streptococcus pneumoniae, Invasive
Indicate antibiotic susceptibility if known
**Streptococcal Disease, invasive, group A
*Syphilis including congenital infection
Tetanus
Toxic Shock Syndrome
Toxoplasmosis
Tuberculosis
Varicella (chickenpox)
Vibriosis (cholera and non-cholera)
West Nile Virus
Yellow Fever

REPORTABLE ENVIRONMENTAL AND OCCUPATIONAL DISEASES AND CONDITIONS

Asbestosis
***Blood lead levels
Byssinosis
Chemical exposure, all types
Pesticide exposure
Pneumoconiosis (coal workers)
Mesothelioma
Silicosis

* Any woman infected with AIDS, HIV or Syphilis, who is pregnant, must be reported indicating the trimester of pregnancy. This applies each time the woman becomes pregnant.

** Bacterial isolates must be submitted to the State Health Department Laboratory for further testing.

*** Blood lead levels over 5 µg /dl for patients 72 months old or younger and levels over 10 µg/dl for patients 73 months and older.

REPORT ANY UNUSUAL DISEASES OR OUTBREAKS THAT MAY REQUIRE PUBLIC HEALTH ASSISTANCE

TO REPORT DISEASES IN THE SECOND LIST ABOVE, PLEASE CALL THE NON-EMERGENCY DISEASE REPORTING SYSTEM, AT 1-800-482-8888 OR FAX A DISEASE REPORT TO 1-501-661-2428

9/1/2014

Instructions for Reporting Communicable Diseases to the Arkansas Department of Health

The "Rules and Regulations Pertaining to Communicable Disease Control" adopted by the Arkansas State Board of Health in 1977 pursuant to the authority conferred by Act 96 of 1913 (Arkansas statutes, 1947, Section 82-110) Section III, states "The responsibility for reporting certain communicable diseases is the duty of EVERY physician, practitioner, nurse, superintendent or manager of a dispensary, hospital, clinic, nursing or extended care home and laboratory personnel examining human specimens resulting in the diagnosis of notifiable diseases or any person in attendance on a case of any disease or conditions declared notifiable."

CONTACT LIST CLINICAL SERVICES

Communicable Disease/Immunization	501-661-2169
Laboratory Receptionist	501-661-2220
Questions, Inquiries, and Complaints	501–671-1490
Laboratory Director	501-280-4079
Secretary	501-661-2424
Specimen Receiving	501-280-4075
Supervisor	501-280-4206
Fax Number	501-661-2754
Microbiology	
Supervisor	501-837-9704(Cell) 501-280-4842 (Office)
Fax	501-661-2538
TB/Mycology	
Supervisor	501-661-2448
Fax Number	501-671-1811
Immunology	
Supervisor	501-661-2490
Fax Number	501-280-4050
Lab IT Supervisor	501-661-2450
Molecular	
Supervisor	501-661-2454
Fax Number	501-661-2270
Newborn Screening	
Supervisor	501-661-2445
Fax Number	501-280-4087

TEST

MENU

Arkansas Department of Health

Public Health Laboratory

Bacterial Confirmation of Isolates

Synonyms	Culture isolate. Required submissions includes the following; *Neisseria meningitidis (invasive)*, *Salmonella sp*., Enterotoxigenic *E. coli, Listeria (except from feces), Staphylococcus aureus* vancomycin resistant/intermediate, *Campylobacter sp., Shigella sp*., or Haemophilus influenzae (invasive), possible agents of Bioterrorism
Patient Requirements	N/A
Collection Requirements	Please send completed Clinical Microbiology Form
Specimen or Source	All sources
Volume	Actively growing culture
Container	Media appropriate for organism survival. Label specimen container with two unique identifiers which includes patient name, date of birth, and date and time of collection.
Storage Conditions	Room temperature (15-35^{0}C) in atmosphere suitable for survival of isolate
Shipping Requirements	Room temperature in atmosphere suitable for survival of isolate. Follow IATA and DOT regulations for shipping. May be shipped by ADH ground courier, certified overnight mail, submitter courier or Federal Express in an infectious 6.2 container. Include a prepaid return address label and the container will be returned.
Specimen Processing	Indicate source of organism, results of any test performed, suspected infection, and any other pertinent information. Use the Clinical Micro Request Form.
Causes for Rejection	Leaking/broken container. See Rejection Information in this Section for other causes for rejection.
Normal Values	N/A
Methods	Standard reference procedures for bacterial identification/confirmation.
Turnaround Time	Turnaround time is isolate dependent. It may require referral to CDC.
Clinical Significance and Interpretation	Varies by isolate identified.
Comments	N/A

Blood Type and Antibody Screen
(Available for Local Health Units Only)

Synonyms	Type/Screen
Patient Requirements	N/A
Collection Requirements	Send Clinical Specimen Submission Form (HL-360) when system is down (for Local Health Units only). Blood collected in purple top (ETDA) is preferred, or red top (unseparated). Label specimen with the patient's full name and collection date. Private submitters should send completed test request with specimen.
Specimen or Source	Whole blood
Volume	Full tube (7 mL)
Container	Purple top (EDTA) preferred, OR Red top unseparated
Storage Conditions	At 2-8°C in: Purple top up to 7 days. **Do not freeze.** Red top up to 14 days. **Do not freeze.**
Shipping Requirements	Ship on cold packs.
Specimen Processing	If there is a delay in testing, store specimen at 2-8°C.
Causes for Rejection	Hemolysis, specimen older than 7 days, specimen not cold when received
Normal Values	N/A
Methods	Slide, Tube, Microwell
Turnaround Time	3 days
Clinical Significance and Interpretation	Rh negative patient must be monitored for any antibody that may cause hemolytic disease of the newborn. Rh negative patients are given Rhogam at 28-32 weeks into the pregnancy.
Comments	Positive antibody screen result must be reported to Perinatal Health. Any antibody screen positive patient needs to be referred to her private MD.

Brucella Abortus Serology
(CDC Send Out)

Synonyms	B. abortus
Patient Requirements	N/A
Collection Requirements	Include date of onset. Use Form HL-06.
Specimen or Source	Serum only
Volume	1 mL of serum
Container	Collect in red top or SST. Centrifuge. If collected in red top, separate serum into a plastic screw-cap serum tube. Label specimen with two unique identifiers which include patient name, date of birth and collection date.
Storage Conditions	Store serum in plastic tube at 2-8°C the first 72 hours.
Shipping Requirements	Ship on cold packs and ship in approved UN 6.2 shipping containers.
Specimen Processing	Separate specimens off the clot before sending to Public Health Laboratory. Transfer serum into a plastic tube.
Causes for Rejection	Too old, not shipped at correct temperature, hemolyzed
Normal Values	Negative
Methods	Sent to CDC.
Turnaround Time	4 - 6 weeks.
Clinical Significance and Interpretation	Confirmatory tube test will be performed. Titer of $\geq$ 1:80 indicate exposure at some undetermined time.
Comments	N/A

Bordetella Pertussis, Bordetella parapertussis and Bordetella holmesii by Real-Time PCR

Laboratory	Molecular Diagnostics
Synonyms	*B. pertussis,* pertussis, or BP by PCR, Whooping Cough
Patient Requirements	N/A
Collection Requirements	Collect specimen on a nasopharyngeal swab or, alternatively, use a nasal wash. Label specimen with the patient's full name, date of birth, and hospital number (where applicable).
Specimen or Source	Nasopharyngeal swab (Preferred) Nasal wash (Acceptable)
Volume	Minimum Volume for Nasal Wash: 200 ul
Container	Sterile, labeled 15.0 mL capped conical tube.
Storage Conditions	Hold at 4^{o}C up to 10 days.
Shipping Requirements	Room temperature
Specimen Processing	N/A
Causes for Rejection	Calcium alginate swabs, improperly labeled specimen
Normal Values	Negative for *Bordetella pertussis* DNA, B. parapertussis DNA, B holmesii DNA
Reference Range	None detected
Methods	This assay is based on the polymerase chain reaction (PCR) using DNA extracted from clinical specimens
Turnaround Time	7 business days.
Clinical Significance and Interpretation	Any amplification above the threshold C_t value is considered positive for *Bordetella pertussis* B, parapertussis, B holmesii DNA Indicates presence of Bordetella species. Diagnosis should not be based on results of single laboratory tests. If the laboratory test is presumed negative and clinical symptoms indicate infection, collect specimens for further testing.
Comments <u>Disclaimer for Positive or Negative Results:</u> Clinical diagnosis and therapy should not be based solely on this molecular assay. The result should be considered in conjunction with clinical information and/or additional tests.	Results for B. Pertussis, B. parapertussis and B. holmesii PCR testing are reported as follows: **Positive results** - "Pos for B. Pertussis DNA; Pos for B. parapertussis DNA; or Pos for B. holmesii DNA." **Negative results** - "Negative for B. Pertussis DNA, Neg for B. parapertussis DNA; or Neg for B. holmesii DNA."

Corynebacterium diptheriae Culture -Culture Diptheriae

Synonyms	Corynebacterium diphtheriae culture
Patient Requirements	Special order only, requires special transport media. Contact ADH Communicable Disease/Immunization for approval.
Collection Requirements	Throat (regular swab) and nasopharyngeal (NP swab) at the site of membrane. Place in Loeffler's transport medium. Complete the Clinical Microbiology Form.
Specimen or Source	Throat, nasopharynx
Volume	N/A
Container	Loeffler's transport medium. Label specimen with two unique identifiers which includes patient name, date of birth and collection date and time.
Storage Conditions	Room temperature (15-35°C)
Shipping Requirements	Room temperature (15-35°C). Ship overnight as a diagnostic specimen. Include a prepaid return address label and container will be returned.
Specimen Processing	Must be in Loeffler's transport media. Must have a completed Clinical Microbiology Form. .
Causes for Rejection	Delay in transport, not in proper transport medium, refrigerated or frozen specimens, leaking/broken containers.
Normal Values	Negative
Methods	Standard manual reference procedure for *C. diphtheriae* culture and identification.
Turnaround Time	Negative results with 3-5 days
Clinical Significance and Interpretation	Possible cause of disease process
Comments	Sites submitting specimens for testing must be approved by Communicable Disease/Immunization of the Arkansas Department of Health. Call Communicable Disease/Immunization during normal business hours or the Microbiology Lab.

Culture, Routine Feces
(Stool Culture)

Synonyms	Routine enteric pathogen isolation – includes Salmonella, Shigella, E. coli 0157:H7 and Campylobacter, Shiga toxin *E. coli*
Patient Requirements	Should be symptomatic with diarrhea and testing must be approved by the Communicable Disease Section of the Arkansas Department of Health.
Collection Requirements	1. Collect feces in MCC C&S Medium or other comparable Cary-Blair stool transport media. Fill container with feces until liquid is at line on vial. Mix well. (Follow kit instructions.) 2. Rectal Swab – **Note: For children only.** Collect on a culturette with Cary-Blair transport media. Collect according to instructions on package. Make sure transport media ampoule is broken. 3. Label container with two unique identifiers which includes patient name, date of birth and date of collection.
Specimen or Source	Feces
Volume	Fill container with feces until liquid is at line on vial. Mix well. (Follow kit instructions.)
Container	Cary-Blair culture vial, MCC Transport kit supplied by ADH or Cary-Blair culturette Label with two unique identifiers which includes patient name, date of birth and date of collection.
Storage Conditions	Room temperature (15-35°C per manufacturer)
Shipping Requirements	Specimen must be received within 4 days of collection. DO NOT REFRIGERATE. Room temperature (15-35^0 C per manufacturer) Specimen must be shipped by courier, certified overnight mail, submitter courier or Federal Express in an infectious 6.2 container. Include a prepaid return address label and container will be returned.
Specimen Processing	Fill to line on container, label with two unique identifiers which includes patient name, date of birth and date of collection. The Clinical Microbiology Form. Container must not be over filled.
Causes for Rejection	Over filled containers, leaking/broken containers, multiple specimens (more than 1 in a 24 hour period), dry specimen, swab in Cary-Blair transport vial, expired transport medium. Diapers are not acceptable. See Rejection Information in this Section for other causes for rejection.
Normal Values	Negative for Enteric Pathogens
Methods	Standard reference methods for above organism isolation and identification
Turnaround Time	Submission only Monday through Wednesday. Negative results within 7 days. Final results depend on organism isolated.
Clinical Significance and Interpretation	Varies by isolate identified.

Fungus (Mycology) Culture

Synonyms	Definitive identification of yeast and molds
Patient Requirements	N/A
Collection Requirements	Collect a series of three single, early morning specimens on successive days. Transport to Laboratory as quickly as possible. Submit completed test requisition.
Specimen or Source	Lung secretions, extrapulmonary
Volume	5-10 mL
Container	Sterile, one-use plastic disposable container. Label specimen with two unique identifiers which includes patient name, date of birth and hospital number (where applicable).
Storage Conditions	Refrigerate specimens at 2-8°C until tested.
Shipping Requirements	Ship as infectious substance using an approved UN 6.2 shipping container.
Specimen Processing	N/A
Causes for Rejection	Leaked in Transit, no name on tube, Specimen received more than seven days from collection date
Normal Values	No fungi seen
Methods	PAS smear; culture; biochemical. Specimens are inoculated onto culture plates, and identifications are made by morphology and biochemical.
Turnaround Time	4-8 weeks
Clinical Significance and Interpretation	The presence of hyphae or cells in a smear is evidence of a disease. Culture will confirm an identification of a specific fungus. Molds that demonstrate growth, but no spores after 6 weeks, are reported as saprophytic molds. Molds that cannot be speciated are reported with genus only.
Comments	N/A

Culture, Vibrio
(Stool Culture)

Synonyms	Stool culture for Vibrio
Patient Requirements	N/A
Collection Requirements	1. Collect stool in MCC C&S Medium or other comparable Cary-Blair stool transport media. Fill container with stool until liquid is at line on vial. Mix well. (Follow kit instructions.) 2. Rectal Swab (Children only) - Collect on a culturettte with transport media. Collect according to instructions on package. Make sure transport media ampoule is broken. 3. Label container with two unique identifiers which includes patient name, date of birth and date of collection.
Specimen or Source	Feces
Volume	Fill container with stool until liquid is at line on vial. Mix well. Follow kit instructions.
Container	Cary-Blair culture vial, MCC transport vial (supplied by ADH) or Cary-Blair culturette. Label with two unique identifiers which includes patient name, date of birth and date of collection.
Storage Conditions	Room temperature (15-35ºC). Specimen must be received within 4 days of collection. DO NOT REFRIGERATE.
Shipping Requirements	Room temperature (15-35ºC). Ship by courier, certified overnight mail, submitter courier or Federal Express in a diagnostic 6.2 container. Include a prepaid return address label and container will be returned.
Specimen Processing	Fill to line on vial, label with patient's name and date of collection. Use Clinical Microbiology Form.
Causes for Rejection	Over filled container, leaking/broken containers, multiple specimens (more than 1 in a 24 hour period), dry specimen, and swab in Cary-Blair transport vial. Diapers are not acceptable. See Rejection Information in this Section for other causes for rejection.
Normal Values	Negative for Vibrio
Methods	Standard Reference methods for culture and identification of Vibrio
Turnaround Time	Monday through Wednesday. Results by 7 days, unless referred to CDC.
Clinical Significance and Interpretation	Possible cause of disease process
Comments	Contact ADH Microbiology Laboratory before sending.

Culture, Yersinia
(Stool Culture)

Synonyms	Stool culture for Yersinia
Patient Requirements	N/A
Collection Requirements	1. Collect stool in MCC C&S Medium or other comparable Cary-Blair stool transport media. Fill container with stool until liquid is at line on vial. Mix well. (Follow kit instructions.) 2. Rectal Swab (Children only) - Collect on a culturettte with Cary-Blair transport media. Collect according to instructions on package. Make sure transport media ampoule is broken. 3. Label container with two unique identifiers which includes patient name, date of birth and date of collection.
Specimen or Source	Feces
Volume	Fill container with stool until liquid is at line on vial. Mix well. Follow kit instructions.
Container	Cary-Blair vial, MCC transport vial (kits supplied by ADH) or Cary-Blair culturette. Label with two unique identifiers which includes patient name, date of birth and date of collection.
Storage Conditions	Room temperature (15-35ºC). Specimen must be received within 3 days of collection. DO NOT REFRIGERATE.
Shipping Requirements	Room temperature (15-35ºC). Ship by courier, certified overnight mail, submitter courier or Federal Express in a diagnostic 6.2 container. Include a prepaid return address label and container will be returned.
Specimen Processing	Fill to line on vial. Label with patient's name and date of collection. Use Clinical Microbiology Form.
Causes for Rejection	Leaking/broken containers, multiple specimens (more than 1 in a 24 hour period), dry specimen, and swab in Cary-Blair transport vial. Diapers are not acceptable. See Rejection Information in this Section for other causes for rejection.
Normal Values	Negative for Yersinia
Methods	Standard Reference methods for culture of Yersinia
Turnaround Time	Monday through Wednesday. Results by 7 days, unless referred to CDC.
Clinical Significance and Interpretation	Possible cause of disease process
Comment	Contact ADH Microbiology Laboratory before sending.

E. coli 0157:H7 Confirmation

Synonyms	E. coli O157:H7
Patient Requirements	N/A
Collection Requirements	Pure isolate on appropriate media for growth. Label with two unique identifiers which includes patient name, date of birth and date of collection.
Specimen or Source	Any source; actively growing pure isolate
Volume	Actively growing pure isolate on media appropriate for growth
Container	Any media appropriate for growth of organism. Label with two unique identifiers which includes patient name, date of birth and date of collection. Slants are preferred.
Storage Conditions	Room temperature (15-35°C). DO NOT REFRIGERATE.
Shipping Requirements	Room temperature (15-35°C) Ship by courier, certified overnight mail, submitter courier or Federal Express in an infectious 6.2 container. Include a prepaid return address label and container will be returned.
Specimen Processing	Use Clinical Microbiology Form. Include all pertinent test results.
Causes for Rejection	Leaking or broken containers. See Rejection Information in this Section for other possible causes for rejection.
Normal Values	Negative for E. coli O157:H7
Methods	Standard reference procedures for E. coli 0157:H7 identification
Turnaround Time	Monday through Friday. Results within 7 days, unless referred to CDC.
Clinical Significance and Interpretation	Possible cause of disease process
Comments	N/A

Ehrlichia chaffeenis
(CDC Send Out)

Synonyms	E. chaffeensis, Ehrlichia, EHR
Patient Requirements	N/A
Collection Requirements	Collect in red top or serum separator tube SST. If collected in red top, separate serum into a plastic screw-cap serum tube. Include date of onset. Include a completed Miscellaneous Examination Form.
Specimen or Source	Serum only
Volume	1 mL of serum
Container	Collect in red top or SST. Centrifuge. If collected in red top, separate serum into a plastic screw-cap serum tube. Label specimen with the two unique identifiers which includes patient name, date of birth, collection date, and time of collection.
Storage Conditions	Store in plastic tube at 2-8°C for up to 30 days. After 30 days, store at ≤ -20°C.
Shipping Requirements	Ship on cold packs or dry ice, if frozen. Ship in approved UN 6.2 shipping container.
Specimen Processing	Separate specimens off the clot before sending to Public Health Laboratory.
Causes for Rejection	Too old, not shipped at correct temperature, hemolyzed
Normal Values	Titer ≤ 32
Methods	Sent to CDC
Turnaround Time	Sent to CDC (4-6 weeks)
Clinical Significance and Interpretation	Titer ≤ 32. No significant antibodies were observed. 2^{nd} specimen requested Titer ≥ 64. Titer indicates exposure at some undetermined time.
Comments	When Ehrlichia is requested, Rocky Mountain Spotted Fever and F. tularensis testing are performed on the specimen. They are all part of the tickborne disease panel.

Francisella tularensis Serology
(CDC Send Out)

Synonyms	F. tularensis, part of tickborne disease panel
Patient Requirements	N/A
Collection Requirements	Include date of onset on the Miscellaneous Examination Form.
Specimen or Source	Serum only
Volume	1 mL of serum
Container	Collect in red top or SST. Centrifuge. If collected in red top, separate serum into a plastic screw-cap serum tube. Label specimen with the two unique identifiers which includes patient name, date of birth and collection date.
Storage Conditions	Store in plastic tube at 2-8°C first 72 hours. After 72 hours, store at ≤ -20°C.
Shipping Requirements	Ship on cold packs or dry ice, if frozen. Ship in approved UN 6.2 shipping container.
Specimen Processing	Separate specimens off the clot before sending to Public Health Laboratory. Include a completed Miscellaneous Examination Form. Include date of onset.
Causes for Rejection	Too old, not shipped at correct temperature, hemolyzed
Normal Values	Negative
Methods	Febrile agglutination (CDC send out)
Turnaround Time	4-6 weeks
Clinical Significance and Interpretation	Presence of antibodies indicates prior exposure to F. tularensis. Confirmatory tube test will be performed. Titer of > 1:160 indicates exposure at some undetermined time.
Comments	N/A

Fungus, (Mycology) Isolate ID

Synonyms	Rapid DNA probe test
Patient Requirements	N/A
Collection Requirements	Private submitters must send a completed test requisition with all specimens.
Specimen or Source	Isolates from culture
Volume	Viable isolate
Container	Solid media. Label specimen with the patient's full name, hospital number (where applicable) and date of birth
Storage Conditions	Transport to Laboratory as soon as possible. Incubate at room temperature until tested.
Shipping Requirements	Ship as infectious substance using an approved UN 6.2 shipping container.
Specimen Processing	Specimens may be tested as soon as growth is visible. Growth can be removed with a 1µl disposable plastic loop.
Causes for Rejection	No growth seen on media
Normal Values	N/A
Methods	Rapid DNA probe test which uses the technique of nucleic acid hybridization.
Turnaround Time	3-7 days
Clinical Significance and Interpretation	The rapid DNA probe test uses the technique of nucleic acid hybridization for the identification of *Blastomyces dermatitidis* and *Histoplasma capsulatum*.
Comments	N/A

Gonorrhea/Chlamydia Screening

(Limited to Arkansas Department of Health Clinics Only)

Synonyms	GC/CT screen
Patient Requirements	**Must meet AIDS/STD program requirements.**
Collection Requirements	Use powderless gloves when handling collection container.
Specimen or Source	Female vaginal swab Urine specimens from male Urine specimens from female (collected only if the APTIMA vaginal Swab Collection Kit is not available or if the female does not have a cervix)
Volume	Fill urine containers between black lines on container.
Container	Label Aptima vaginal swab or urine collection container with two unique identifiers which includes patient name, date of birth.
Storage Conditions	Urine/swab stored at room temperature. Urine may be stored at room temperature up to 30 days and vaginal swab stored at room temperature up to 60 days.
Shipping Requirements	Ship at room temperature.
Specimen Processing	N/A
Causes for Rejection	Any specimen collection site other than indicated for specimen or source, non-urogenital site, name not on specimen or request form, wrong collection device, expired collection kit, overfilled or underfilled urine containers, two swabs in vaginal swab container, white swab in vaginal container, no swab in container. Call Laboratory for other causes of rejection.
Normal Values	Negative
Methods	GenProbe Aptima Combo 2 Assay On Tigris DTS System
Turnaround Time	7 business days
Clinical Significance and Interpretation	Indicates presence of Chlamydia trachomatis or Neisseria gonorrhoeae. Diagnosis should not be based on results of single laboratory tests. If the laboratory test is presumed negative and clinical symptoms indicate infection, collect specimens for further testing.
Comments <u>Note:</u> Clinical diagnosis and therapy should not be based solely on this molecular assay. The result should be considered in conjunction with clinical information and/or additional tests.	Test available to Arkansas Department of Health Clinics only. **Positive results**: <u>Gonorrheoae</u> - "Pos for N. gonorrheoae rRNA." <u>Chlamydia</u> - "Pos for C. trachomatis rRNA." **Negative results** <u>Gonorrheoae</u> - "Presumed negative for N. gonorrheoae rRNA." <u>Chlamydia</u> - "Presumed negative for C. trachomatis rRNA". Other results reported may be I**ndeterminate** and **Invalid.** In either case, a valid result was not obtained and the specimen must be recollected.

Hemoglobinopathies (Adults Only)
(Local Health Units Only)

Synonyms	Sickle cell disease, sickle cell trait, hemoglobin disorders
Patient Requirements	Adult or child older than 6 months, not recently transfused
Collection Requirements	Collect on filter paper card.
Specimen or Source	Fingerstick
Volume	A large drop sufficient to soak through to completely fill a preprinted circle on filter paper. Fill all spots.
Container	Filter paper card provided by Laboratory, labeled with patient's name, date of birth and date and time of collection.
Storage Conditions	Store refrigerated 2-8°C if delivery to Laboratory is delayed.
Shipping Requirements	Place in paper envelope labeled "dried blood spots specimen" and send to Laboratory. Do not place in plastic bag or on or near ice packs. Specimen must be received in Laboratory within 14 days after collection.
Specimen Processing	Allow blood specimen to dry in horizontal position for at least 3 hours at room temperature (18-25°C), not in direct light. Do not heat or stack the specimens during the drying process.
Causes for Rejection	Insufficient quantity of blood in circles Specimen layered from repeat blood applications Specimen leached out or contaminated Specimen more than 14 days old No name on specimen
Normal Values	Hemoglobin A
Reference Normal	Hemoglobin A
Methods	Isoelectric focusing (IEF)
Turnaround Time	Normal result – 4 working days Abnormal result – 5-8 working days
Clinical Significance and Interpretation	N/A
Comments	Blood transfusion prior to specimen collection may make interpretation inconsistent.

Hepatitis A IgM Antibody (HAV IgM)

Synonyms	Hepatitis A
Patient Requirements	N/A
Collection Requirements	SST or red top, EDTA, Citrate, or Heparin – SST preferred. Private submitters should send completed test request with specimen.
Specimen or Source	Serum NOT cadaver or heat inactivated
Volume	3 mL serum separated from clot within 2 hours after collection
Container	Collect in SST. Centrifuge. Label specimen with the patient's full name, date of birth and indicate the date and time of collection on the test requisition. **Separate serum or plasma from cells within 2 hours after collection.** If transferred to another tube, tube must be sterile.
Storage Conditions	2-8°C up to 48 hours after collection
Shipping Requirements	Ship on cold packs in approved UN 6.2 shipping containers.
Specimen Processing	Separate serum from clot before shipping.
Causes for Rejection	Old, hemolyzed, lipemic, not shipped on cold packs or warm when received, shipped on cells, or containing particulate matter, quantity insufficient, incomplete centrifugation.
Normal Values	Negative, not previously infected with HAV
Method	Enzyme Immunoassay
Turnaround Time	4 days
Clinical Significance and Interpretation	Acute HAV
Comments	Presence of HAV IgM antibody indicates acute HAV.

Hepatitis B IgM Core Antibody (HBcIgM)

Synonyms	Hepatitis B
Patient Requirements	N/A
Collection Requirements	SST or red top, EDTA, Citrate, or Heparin – SST preferred. Private submitters should send completed test request with specimen.
Specimen or Source	Serum, NOT cadaver or heat inactivated
Volume	3 mL serum separated from clot within 2 hours after collection.
Container	Collect in SST or red top, EDTA, Citrate, or Heparin. Centrifuge. If collected in red top, separate serum into a plastic screw-cap serum tube. Label specimen with the patient's full name and date of birth. Indicate the date and time of collection on the test requisition. **Separate serum or plasma from cells within 2 hours after collection.** If transferred to another tube, tube must be sterile.
Storage Conditions	2-8°C up to 48 hours after collection
Shipping Requirements	Ship on cold packs in approved UN 6.2 shipping containers.
Specimen Processing	Separate serum from clot before shipping.
Causes for Rejection	Old, hemolyzed, lipemic, not shipped on cold packs or warm when received, shipped on cells, or containing particulate matter, quantity insufficient, incomplete centrifugation.
Normal Values	Negative, not previously infected with HBV
Method	Enzyme Immunoassay
Turnaround Time	4 days
Clinical Significance and Interpretation	Acute HBV
Comments	Presence of HBsAg and Total HBcAb indicates the need to investigate for chronic persistent or aggressive HBV. Presence of HBcIgM antibody indicates an acute case of HBV. Presence of HBsAb with or without presence of Total HBcAb indicates immunity to HBV.

Hepatitis B Surface Antibody (HBsAb)
(Available to Arkansas Department of Health Clinics Only)

Synonyms	Hepatitis B
Patient Requirements	N/A
Collection Requirements	SST or red top, EDTA, Citrate, or Heparin – SST preferred. Private submitters should send completed test request with specimen.
Specimen or Source	Serum or plasma, NOT cadaver or heat inactivated
Volume	3 mL serum or plasma (EDTA, citrate, or heparin) separated from clot within 2 hours after collection
Container	Collect in SST or red top, EDTA, Citrate, or Heparin. Centrifuge. If collected in red top, separate serum into a plastic screw-cap serum tube. Label specimen with the patient's full name and date of birth. Indicate the date and time of collection on the test requisition. **Separate serum or plasma from cells within 2 hours after collection.** If transferred to another tube, tube must be sterile.
Storage Conditions	2-8°C up to 48 hours after collection
Shipping Requirements	Ship on cold packs. Private submitters should ship in approved UN 6.2 shipping container.
Specimen Processing	Separate serum from clot before shipping.
Causes for Rejection	Old, hemolyzed, lipemic, not shipped on cold packs or warm when received, shipped on cells, or containing particulate matter.
Normal Values	Negative, not previously infected with HBV
Method	Enzyme Immunoassay
Turnaround Time	6 days
Clinical Significance and Interpretation	Immunity to HBV
Comments	Presence of HBsAg and Total HBcAb indicates the need to investigate for chronic persistent or aggressive HBV. Presence of HBcIgM antibody indicates an acute case of HBV. Presence of HBsAb with or without presence of Total HBcAb indicates immunity to HBV.

Hepatitis B Surface Antigen (HBsAg)
(Available to Arkansas Department of Health Clinics Only)

Synonyms	Hepatitis B
Patient Requirements	N/A
Collection Requirements	SST. red top, EDTA, Citrate, or Heparin – SST preferred. Private submitters should send completed test request with specimen.
Specimen or Source	Serum or plasma, NOT cadaver or heat inactivated
Volume	3 mL serum or plasma (EDTA, citrate, or heparin) separated from clot within 2 hours after collection.
Container	Collect in SST, red top, EDTA, Citrate, or Heparin. Centrifuge. If collected in red top, separate serum into a plastic screw-cap serum tube. Label specimen with the patient's full name and date of birth. Indicate the date and time of collection on the test requisition. **Separate serum or plasma from cells within 2 hours after collection.** If transferred to another tube, tube must be sterile.
Storage Conditions	2-8°C up to 48 hours after collection
Shipping Requirements	Ship on cold packs. Private submitters should ship in approved UN 6.2 shipping container.
Specimen Processing	Separate serum from clot before shipping.
Causes for Rejection	Old, hemolyzed, lipemic, not shipped on cold packs or warm when received, shipped on cells, or containing particulate matter.
Normal Values	Negative, not previously infected with HBV
Method	Enzyme Immunoassay
Turnaround Time	6 days
Clinical Significance and Interpretation	Acute or chronic infection of HBV
Comments	Presence of HBsAg and Total HBcAb indicates the need to investigate for chronic persistent or aggressive HBV. Presence of HBcIgM antibody indicates an acute case of HBV. Presence of HBsAb with or without presence of Total HBcAb indicates immunity to HBV.

Hepatitis B Total Core Antibody (Total HBcAb)

Synonyms	Hepatitis B
Patient Requirements	N/A
Collection Requirements	SST or red top, EDTA, Citrate, or Heparin – SST preferred. Private submitters should send completed test request with specimen.
Specimen or Source	Serum NOT cadaver or heat inactivated
Volume	3 mL serum or plasma (EDTA, citrate, or heparin) separated from clot within 2 hours after collection
Container	Collect in SST, red top, EDTA, Citrate, or Heparin Centrifuge. Label specimen with the patient's full name, date of birth, and indicate the date and time of collection on the test requisition. **Separate serum or plasma from cells within 2 hours after collection.** If transferred to another tube, tube must be sterile.
Storage Conditions	2-8°C up to 48 hours after collection
Shipping Requirements	Ship on cold packs in approved UN 6.2 shipping container.
Specimen Processing	Separate serum from clot before shipping.
Causes for Rejection	Old, hemolyzed, lipemic, not shipped on cold packs or warm when received, shipped on cells, or containing particulate matter, quantity insufficient, incomplete centrifugation.
Normal Values	Negative, not previously infected with HBV
Method	Enzyme Immunoassay
Turnaround Time	4 days
Clinical Significance and Interpretation	Immunity or chronic HBV
Comments	Presence of HBsAg and Total HBcAb indicates the need to investigate for chronic persistent or aggressive HBV. Presence of HBcIgM antibody indicates an acute case of HBV. Presence of HBsAb with or without presence of Total HBcAb indicates immunity to HBV.

Hepatitis C Antibody
(Available to Arkansas Department of Health Clinics Only)

Synonyms	Hepatitis C
Patient Requirements	Recommended for persons born between 1948 and 1964
Collection Requirements	SST
Specimen or Source	Serum
Volume	3 mL serum separated from clot within 2 hours after collection
Container	Collect in SST. Label specimen with the patient's full name and date of birth. Indicate the date and time of collection on the test requisition. **Separate serum from cells within 2 hours after collection.** If transferred to another tube, tube must be sterile.
Storage Conditions	2-8°C up to 48 hours after collection
Shipping Requirements	Ship on cold packs. Private submitters should ship in approved UN 6.2 shipping container.
Specimen Processing	Separate serum from clot before shipping.
Causes for Rejection	Old, hemolyzed, lipemic, not shipped on cold packs or warm when received, shipped on cells, or containing particulate matter.
Normal Values	Negative, not previously infected with HCV
Method	Enzyme Immunoassay
Turnaround Time	6 days
Clinical Significance and Interpretation	Qualitative detection of anti-HCV
Comments	If HCV antibody is reactive, a nucleic acid test be performed.

HIV

Synonyms	HIV 1,2,0,p24 antigen, HIV 1 and 2
Patient Requirements	N/A
Collection Requirements	Collect in SST. Large SST tubes are not accepted for testing and will be rejected. Allow blood to clot no more than 4 hours at room temperature. Centrifuge SST to obtain the serum. If collected in red top, separate serum from cells. Store at 2-8°C until sent to Laboratory Private submitters should send completed test request with specimen.
Specimen or Source	Serum
Volume	2 mL
Container	Collect in SST. Label specimen with the patient's full name, date of birth and indicate the date and time of collection on the test requisition.
Storage Conditions	Store at 2-8°C for up to 5 days after collection.
Shipping Requirements	Ship on cold packs in approved UN 6.2 shipping container.
Specimen Processing	Separate serum from cells.
Causes for Rejection	Specimen too old, quantity insufficient, incomplete centrifugation.
Normal Values	Nonreactive
Methods	ELISA, Geenius Assay (confirmation)
Turnaround Time	4 days if nonreactive, 6 days if ELISA is reactive
Clinical Significance and Interpretation	The presence of HIV antibodies or antigen indicates prior exposure to HIV. It must be confirmed by method such as Geenius Assay for HIV 1 and 2.
Comments	If ELISA is reactive, an HIV-1 and 2 Multispot differentiation assay will be performed.

Influenza Testing

Synonyms	Flu, Flu A and/or Flu B by RT-PCR
Laboratory	Molecular Diagnostics
Patient Requirements	N/A
Collection Requirements	For nasal swab, throat swab, NP swab, combined nasal and throat swab, collect on polyester or Dacron tipped swab with plastic shaft. Specimen must be collected and transported in viral transport media. Label specimen with the patient's full name, hospital number, date of birth, and the date and time of collection. Use Form HL-08-69.
Specimen or Source	Nasal swab, throat swab, nasopharyngeal swab, combined nasal and throat swab (Preferred) Nasal wash, nasal aspirate, bronchoalveolar lavage, tracheal aspirate, sputum, lung tissue. (Acceptable)
Volume	Minimum Volume for Nasal Wash: 200 ul; 3ml of vial transport media.
Container	Viral transport media collection kit.
Storage Conditions	Hold at 2-8^{o}C up to 72 hours
Shipping Requirements	On ice
Specimen Processing	N/A
Causes for Rejection	Swabs with calcium alginate or cotton tips and wooden shafts, specimens not placed in viral transport media, specimen collected in expired viral transport media, improperly labeled specimen, improperly collected specimen, and multiple specimens packed together without each specimen being contained in a separate biohazard bag, specimen older than 72 hours.
Normal Values	Negative Influenza A RNA or Negative Influenza B RNA
Reference Range	None detected
Method	Reverse Transcriptase Polymerase Chain Reaction (RT-PCR)
Turnaround Time	7 business days
Clinical Significance and Interpretation	Any amplification above the threshold C_t value is considered positive for Influenza A or Influenza B RNA. Indicates presence of Influenza A Virus RNA or Influenza B Virus RNA. Diagnosis should not be based on results of single laboratory tests. If the laboratory test is presumed negative and clinical symptoms indicate infection, collect specimens for further testing.

Influenza Testing – Continued

Comments	**Include fax number where results should be sent on the request.** Results for Flu RT-PCR testing are reported as follows: Positive results for Flu A are reported as “Positive for Influenza A” Positive results for Flu B are reported as “Positive for Influenza B”. Negative results for Flu A are reported as “Negative for Influenza A.” Negative results for Flu B are reported as “Negative for Influenza B.” Disclaimer for Positive or Negative Results: Clinical diagnosis and therapy should not be based solely on this molecular assay. The result should be considered in conjunction with clinical information and/or additional tests.

Isolate Identification, Aerobic and Anaerobic /Confirmation

Synonyms	Organism identification
Patient Requirements	N/A
Collection Requirements	Pure isolate on appropriate media for growth. Label with patient's name, date of birth and date of collection.
Specimen or Source	Any source; actively growing pure isolate
Volume	N/A
Container	Any media/atmosphere appropriate for growth of organism. Label with patient's name, date of birth and date of collection.
Storage Conditions	Room temperature (15-35°C) **IN ATMOSPHERE APPROPIATE FOR ORGANISM.** Tube/plate with media appropriate for organism survival.
Shipping Requirements	Room temperature (15-35°C) **In Atmosphere Appropriate For Organism**. Ship by courier, certified overnight mail, submitter courier or Federal Express in an infectious 6.2 container. Include a prepaid return address label and container will be returned.
Specimen Processing	Indicate source of organism, results of any tests performed, suspected infection and any other pertinent information. Include a completed Clinical Microbiology Form
Causes for Rejection	Leaking Container. See Rejection Information in this Section for other causes for rejection.
Normal Values	N/A
Method	Standard reference procedures for bacterial identification/confirmation
Availability/Turnaround Time	Turnaround time is isolate dependent; may require referral to CDC.
Clinical Significance and Interpretation	Possible cause of disease process
Comments	N/A

Mycobacteria Rapid Susceptibility

Synonyms	Sensitivity Test for TB
Patient Requirements	N/A
Collection Requirements	A completed Mycobacteriology/Mycology requisition must accompany all specimens. (HL-341)
Specimen or Source	Isolate on Slant
Volume	Viable Isolate
Container	Slant. Label specimen with the patient's full name and date of birth.
Storage Conditions	Incubate at room temperature until tested.
Shipping Requirements	Ship as infectious substance using a UN 6.2 shipping container.
Specimen Processing	N/A
Causes for Rejection	Slant dehydrate, contaminated, nonviable
Normal Values	Susceptible
Methods	MGIT 960 Method
Turnaround Time	7-12 days
Clinical Significance and Interpretation	Susceptibility tests are performed on first time positive TB isolates. Susceptibility testing allows identification of multi-drug resistant TB isolates and assists the physician in treatment of the patient.
Comments	Drugs tested – Streptomycin, Isoniazid, Rifampin, Ethambutol, PZA

NEWBORN SCREENING PANEL

Congenital Hypothyroidism BY TSH, Hemoglobinopathies (Sickle Cell), Galactosemia By GALT, Congenital Adrenal Hyperplasia, Cystic Fibrosis, Biotinidase Deficiency, Amino Acid Disorders, Fatty Acid Oxidation Disorders, Organic Acid Disorders, Severe Combined Immunodeficiency

Synonyms	TSH, Sickle Cell, GALT, CAH, CF/IRT, BIO/BIOT, AA, FAO, OA, SCID
Patient Requirements	Infant less than 6 months of age
Collection Requirements	Collect at least 24 hours after birth.
Specimen or Source	Heel stick
Volume	A large drop of blood sufficient to soak through to completely fill a preprinted circle on the filter paper. Fill all circles.
Container	Filter paper card, HL-11, provided by Neonatal Screening Laboratory Office. Collection form must be completely filled out. Please provide date and time of birth, date of collection, and weight at time of birth.
Storage Conditions	Store refrigerated 2-8°C if delivery to Laboratory is delayed.
Shipping Requirements	Send specimen to Laboratory within 24 hours after collection. Place in paper envelope and send to Laboratory. Do not place in plastic bag or send on or near ice packs. Specimen must be received in lab within 2 days after collection.
Specimen Processing	Allow blood specimen to dry in horizontal position for at least 3 hours at room temperature (18-25°C), not in direct light. Do not heat or stack cards during the drying process.
Causes for Rejection	Insufficient number of circles filled Specimen distribution in circles not uniform Insufficient quantity of blood in circles No blood on filter paper Specimen layered from repeat applications to circle Circles overfilled with blood Specimen appears leached out or contaminated Form incompletely filled out Filter paper expired Specimen more than 14 days old
Normal Values	Available from the Newborn Screening Laboratory.

NEWBORN SCREENING PANEL - Continued
Congenital Hypothyroidism BY TSH, Hemoglobinopathies (Sickle Cell), Galactosemia By GALT, Congenital Adrenal Hyperplasia, Cystic Fibrosis, Biotinidase Deficiency, Amino Acid Disorders, Fatty Acid Oxidation Disorders, Organic Acid Disorders, Severe Combined Immunodeficiency

Methods	Amino Acid, Fatty Acid, and Organic Acid Disorders, MS/MS Cystic Fibrosis, Congenital Adrenal Hyperplasia, Congenital Hypothyroidism – fluoroimmuno assay Hemoglobinopathies – HPLC Biotinidase, GALT – enzymatic assay SCID – PCR and time resolved fluorescence
Turnaound Time	All specimens received by the Laboratory are initially examined within 5 working days of receipt. Abnormal results are reported to the submitter within two working days of determination.
Clinical Significance and Interpretation	Early identification allows for more rapid follow-up of potential disorders. Early intervention, either with medication or a change in diet, can greatly affect the health of the baby.
Comments	If specimen is collected prior to 24 hours of age, a repeat specimen is requested. Congenital Hypothyroidism – TSH is the primary screen in this lab for the detection of congenital hypothyroidism. Those specimens with elevated TSH levels are supplemented with T4 test. Date and time of birth and date of collection must be provided to get an accurate interpretation of TSH results. Congenital Adrenal Hyperplasia – Please provide weight at time of birth and weight at time of collection to get an accurate interpretation of the CAH results. Hemoglobinopathies – HLPC is the primary screen for the detection of abnormal hemoglobinopathies. All abnormal specimens are supplemented with IEF (isoelectric focusing).

Ova and Parasites, Fecal

Synonyms	Fecal Parasites (This does not include Cryptosporidium, Cyclospora/ Isospora. These must be ordered separately.)
Patient Requirements	Routine examination for parasites prior to treatment. A minimum of three specimens collected on alternate days is recommended. Collect specimens to determine the efficacy of treatment three to four weeks after completion of therapy. Order if patient has diarrhea.
Collection Requirements	Collect fecal specimens before use of barium, bismuth, etc. Collect in MCC Unifix Total Fix single vial (or comparable transport system containing 10% formalin and PVA vials). Add bloody, watery portions of stool to fill line marked on vial, seal and shake vigorously. Use Clinical Microbiology Form.
Specimen or Source	Stool
Volume	To fill line on collection vials
Container	MCC Unifix Total Fix single vial or dual vial system with 10% formalin and PVA. Label vials with patient's name, date of birth, and date of collection.
Storage Conditions	Room temperature (15-35^{o}C)
Shipping Requirements	Room temperature (15-35^{o}C)
Specimen Processing	Must be in acceptable preservative along with completed HL-341.
Causes for Rejection	Dry specimens, leaking or over filled container, specimen contaminated with oil, barium, or urine, multiple specimens in a 24 hour period, expired collection kits. See Rejection Information in this Section for other causes for rejections.
Normal Values	No ova and parasites seen by concentration procedure and trichrome stain. (This does not include Cryptosporidium, Cyclospora/Isospora. These must be ordered separately.)
Methods	Concentration technique and trichrome stain by microscopic examination. Modified Kinyoun stain upon request.
Turnaround Time	Results within 6 days
Clinical Significance and Interpretation	Possible cause of disease process
Comments	Accepted from all submitters. Order this test if the patient has had foreign travel or continued symptoms. Cryptosporidium/Cyclospora/Isospora is a special test order.

Rocky Mountain Spotted Fever - Part of Tickborne Disease Panel
(CDC Send Out)

Synonyms	Rocky Mountain, RMSF
Patient Requirements	N/A
Collection Requirements	Collect in red top or serum separator tube SST. If collected in red top, transfer serum into plastic tube. Include date of onset. Label specimen with the patient's full name, date of birth, and collection date. Include a completed Miscellaneous Examination Form.
Specimen or Source	Serum
Volume	1 mL of serum
Container	Collect in red top or SST. Centrifuge. If collected in red top, transfer serum into plastic tube. Label specimen with the patient's full name and date of birth.
Storage Conditions	Store in plastic tube at 2-8°C for up to 30 days; After 30 days store at ≤ 20° C.
Shipping Requirements	Ship on cold packs, or dry ice if frozen. Ship in approved UN 6.2 shipping container.
Specimen Processing	Separate specimens off the clot before sending to the Public Health Laboratory. Transfer serum into plastic tube.
Causes for Rejection	Too old, not shipped at correct temperature, hemolyzed
Normal Values	Titer - ≤ 32
Methods	Sent to CDC
Turnaround Time	4-6 weeks
Clinical Significance and Interpretation	Titer ≤ 32. No significant antibodies were observed. 2nd specimen requested Titer ≥ 64. Titer indicates exposure at some undetermined time.
Comments	When RMSF is requested, Ehrlichia and F. tularensis testing is also performed on the specimen.

Rubella IgG (German Measles)
(Available to Arkansas Department of Health Clinics Only)

Synonyms	German Measles
Patient Requirements	Patient must be older than 6 months of age.
Collection Requirements	Collect specimen in an SST and ensure tube is completely filled. Centrifuge Serum may be stored at room temperature for 8 hours after collection. After 8 hours, serum should be stored at 2-8 C up to 48 hours after collection. Label specimen with the patient's full name, date of birth, and collection date. Include a completed Miscellaneous Examination Form with the specimen.
Specimen or Source	Serum
Volume	1 mL of serum
Container	SST. Centrifuge. If collected in red top, separate serum from clot. Label specimen with the patient's full name, date of birth, and date and time of collection.
Storage Conditions	If specimen cannot be tested with 8 hours, store serum at 2-8°C. Specimens must be received in testing lab within 48 hours from collection.
Shipping Requirements	Ship on cold packs in approved UN 6.2 shipping container.
Specimen Processing	Separate specimens off the clot before sending to Public Health Laboratory.
Causes for Rejection	Too old, hemolyzed, not shipped at correct temperature, quantity insufficient, incomplete centrifugation.
Normal Values	Positive indicates the specimen has Rubella IgG antibodies. Negative indicates the specimen does not have Rubella IgG antibodies. Equivocal results require a second specimen to be collected and tested.
Methods	EIA
Turnaround Time	3 days, 6 days for repeat testing for equivocal results
Clinical Significance and Interpretation	Positive result indicates immunity (vaccination or infection).
Comments	Maternal antibodies may be present in specimens from infants younger than 6 months of age and may interfere with accurate testing.

Salmonella Confirmation and Serotyping

Synonyms	Salmonella Serotyping
Patient Requirements	N/A
Collection Requirements	N/A
Specimen or Source	Any source. Submit pure isolate.
Volume	N/A
Container	Any media appropriate for growth of organism. Slant is preferred. Label specimen with patient's name, date of birth, and date of collection. Include a completed Clinical Microbiology Form.
Storage Conditions	Room temperature (15-35°C)
Shipping Requirements	Room temperature (15-35°C) Ship by courier, certified overnight mail, submitter courier or Federal Express in an infectious 6.2 container. Include a prepaid return address label and container will be returned.
Specimen Processing	A completed Clinical microbiology Form must accompany this specimen. Complete all information on the form.
Causes for Rejection	Leaking or broken containers. Isolates from multiple specimens (more than 1 in a 24 hour period), See Rejection Information in this Section for other causes for rejection.
Normal Values	N/A
Methods	Manual biochemicals and CDC /Difco Salmonella Antisera
Turnaround Time	Confirmation - 7 days. Difficult serotypes could require more time. Possible referral to CDC.
Clinical Significance and Interpretation	Possible cause of disease process
Comments	N/A

Shigatoxin Producing Escherichia coli

Synonyms	STEC/EHEC, E. coli shiga toxin positive
Patient Requirements	NA
Collection Requirements	Stool (feces) in Carey Blair or pure isolate Isolate in GN or MacConkey broth
Specimen or Source	Stool (feces) or any other source for pure isolate except urine.
Volume	N/A
Container	Carey Blair Stool culture kits are supplied by ADH. Label with patient's name, date of birth and date of collection. Pure isolate in GN or MacConkey broth.
Storage Conditions	Room temperature (15^0-35^0C) for Carey Blair kits. Refrigerator (2-8°C) GN or MacConkey broth.
Shipping Requirements	Carey Blair kit may be shipped at room temperature (15^0-35^0C) GN and MacConkey broth should be shipped cold (2-8°C) Ship by courier, certified overnight mail, submitter courier, or Federal express in diagnostic 6.2 container.
Specimen Processing	Place enough fresh raw stool in Carey Blair container to raise fluid level to fill line. DO NOT OVERFILL. Label with patient's name, date and time of collection. Pure isolate on in GN or MacConkey broth. Label as above.
Causes for Rejection	Leaking specimens; specimens not in Carey Blair; specimens not received with 4 days of collection; overfilled vials; collection kit expired.
Normal Values	Negative
Methods	Standard CDC reference methodology
Turnaround Time	Results available at 7-10 days but may vary depending on type of sample submitted.
Clinical Significance and Interpretation	Possible cause of disease process
Comments	Specimens accepted Monday – Thursday at 4:00 p.m. Exceptions are holidays.

Shigella Confirmation and Serotyping

Synonyms	Shigella serotype
Patient Requirements	N/A
Collection Requirements	N/A
Specimen or Source	Any source. Submit pure isolate.
Volume	N/A
Container	Any media appropriate for growth of organism. Slant is preferred. Label specimen with patient's name, date of birth and date of collection. Use Clinical Microbiology Form
Storage Conditions	Room temperature (15-35°C)
Shipping Requirements	Room temperature (15-35°C) Ship by courier, certified overnight mail, submitter courier or Federal Express in an infectious 6.2 container. Include a prepaid return address label and container will be returned.
Specimen Processing	A completed Clinical Microbiology Form must accompany this specimen. Complete all areas of the form. Label specimen with patient's name, date of birth, and date of collection.
Causes for Rejection	Leaking or broken, containers. Isolates from multiple specimens (more than 1 in a 24 hour period), See Rejection Information in this Section for other causes for rejection.
Normal Values	N/A
Methods	Manual bio-chemicals and Difco Shigella Antisera
Turnaround Time	Final report by 7 days. Problematic organisms could require longer.
Clinical Significance and Interpretation	Possible cause of disease process
Comments	N/A

Syphilis

Synonyms	RPR: Reagin or non-treponemal test for syphilis TPPA: Treponemal or confirmatory test for syphilis.
Patient Requirements	N/A
Collection Requirements	For blood, collect in SST. Allow blood to clot no more than 4 hours at room. Store at 2-8°C until sent to Laboratory. Label specimen with the patient's full name, date of birth, and collection date. Private submitters should send a completed Send completed Miscellaneous Examination Form with specimen.
Specimen or Source	Serum only. CSF is not acceptable for testing. Cord blood may be used for baseline screening when no other specimen is available for infants.
Volume	Minimum 2 mL of serum
Container	Collect in SST. Centrifuge. Label specimen with patient's full name and date of birth. Indicate the date and time of collection on the test requisition.
Storage Conditions	2-8°C for up to five days from collection
Shipping Requirements	Ship on cold packs in approved UN 6.2 shipping containers.
Specimen Processing	Separate serum from cells.
Causes for Rejection	Older than 5 days, not shipped at 2-8°C, hemolyzed, turbid serum or bacterial contamination, serum not separated from cells if collected in a red top
Normal Values	Non-reactive
Methods	Nontreponemal reagin flocculation test for screening and antibody particle agglutination for confirmatory
Turnaround Time	4 working days
Clinical Significance and Interpretation	Reactive test may indicate past or present infection but must be confirmed by additional testing. All reactive or weakly reactive specimens are tested with TP-PA (PAS).
Comments	Spinal fluid is not acceptable for testing.

TB and Other Mycobacteria Culture

Synonyms	Definitive identification of culture
Patient Requirements	N/A
Collection Requirements	Collect a series of three single, early morning specimens on successive days. Label specimen with the patient's full name, date of birth, and collection date. Private submitters must send a completed test requisition with all specimens.
Specimen or Source	Lung secretions, extrapulmonary
Volume	5-10 mL
Container	Sterile, one-use plastic disposable container. Label specimen with the patient's full name, date of birth, and the date and time of collection.
Storage Conditions	Refrigerate specimens at 2°-8°C until tested.
Shipping Requirements	Ship as infectious substance using an approved UN 6.2 shipping container.
Specimen Processing	N/A
Causes for Rejection	Leaked in transit, specimen more than 7 days old, no name on form or collection containers
Normal Values	Negative
Methods	Acid fast stain, traditional culture methods. Identifications are made by using rapid DNA probes and INNO-LiPA test.
Turnaround Time	2-8 weeks
Clinical Significance and Interpretation	A positive culture will confirm the presence of mycobacteria.
Comments	Probes used at the Public Health TB laboratory are *M. tuberculosis* complex, *M. avium* complex and *M. kansasii*. Other identifications are made by using INNO-LiPA test. Drug susceptibility testing is done on all first time positive TB patients and three months later, if culture continues to grow positive.

TB (Mycobacteria) Isolate Identification

Synonyms	Definitive identification by rapid DNA probe test or by INNO-LiPA test.
Patient Requirements	N/A
Collection Requirements	Viable growth on solid media or liquid culture. Label specimen with the patient's full name, date of birth, and collection date. Send a completed Mycobacterialogy/Mycology Form with all specimens.
Specimen or Source	Isolates from culture
Volume	Viable growth
Container	Solid media or liquid culture. Label specimen with the patient's full name, date of birth and hospital number (where applicable).
Storage Conditions	Transport to Laboratory as soon as possible. Incubate at room temperature until tested.
Shipping Requirements	Ship as infectious substance using a UN 6.2 shipping container.
Specimen Processing	Specimens may be tested as soon as growth is visible.
Causes for Rejection	No viable growth
Normal Values	N/A
Methods	INNO-LiPA test, Rapid DNA probe test.
Turnaround Time	2-7 days
Clinical Significance and Interpretation	The treatment of mycobacterial infections can be difficult, and the severity of the infection requires rapid diagnosis.
Comments	INNO-LiPA testing and DNA Probes are used for mycobacterial identification. Probes used are *M. tuberculosis* complex, *M. avium* complex, and *M. kansasii*. If patient is identified as having *M. tuberculosis* complex for the first time, then drug susceptibility testing is done and will be repeated three months later if patient continues to grow positive cultures.

TB Rapid Identification

(By Physician Request or By Request of the TB Program)

Synonyms	Xpert® MTBR/RIF
Patient Requirements	N/A
Collection Requirements	Collect specimen in sterile, plastic container and store at 2^0-8^0C until transported or processed.
Specimen or Source	Raw sputum or concentrated sediments prepared from induced or expectorated sputum. Label specimen with the patient's full name, hospital number or date of birth, and the date and time of collection.
Volume	5-10 mL for raw sputum; 0.5 mL to 1 mL for sputum sediment.
Container	Sterile, one-use plastic disposable container
Storage Conditions	Refrigerate at 2-8°C prior to processing.
Shipping Requirements	N/A
Specimen Processing	Digested-decontaminated using N-acetyl-L-cysteine-(NALC) sodium hydroxide
Causes for Rejection	Specimens that are grossly bloody and samples with obvious food particles or other solid particulates.
Normal Values	Negative
Methods	Xpert MTB/RIF assay is used in specimens for the detection of Mycobacterium tuberculosis complex. The assay also detects Rifampin- resistance associated mutations of the *rpoB* gene.
Turnaround Time	1 - 2 days after specimen processing
Clinical Significance and Interpretation	**MTB DETECTED; Rif Resistance DETECTED** – The MTB target is detected within the sample: A mutation in the *rpoB* gene has been detected. **MTB Detected; Rif Resistance NOT Detected** - The MTB target is detected within the sample: A mutation in the *rpoB* gene has not been detected. **MTB NOT DETECTED** – The MTB target is not detected within the sample. **NO RESULT** – The presence or absence of MTB cannot be determined. **REPEAT THE TEST.**
Comments	Transport and store raw sputum specimens at 2 to 8°C before processing. Store re-suspended sediments at 2 to 8°C if not immediately tested by the Xpert MTB/RIF assay.

Tickborne Disease Panel
(CDC Send Out)

Synonyms	Includes Rocky Mountain Spotted Fever, RMSF, F. tularensis, and Ehrlichia
Patient Requirements	N/A
Collection Requirements	Serum only, include date of onset. Include a completed Miscellaneous Examination Form.
Specimen or Source	Blood collected in red top or SST tube
Volume	1 mL of serum
Container	Collect in red top and transfer serum into plastic tube. If collected in SST, centrifuge prior to shipping. Label specimen with the patient's full name, date of birth, and collection date.
Storage Conditions	Store in plastic tube at 2-8^{0}C first 72 hours; After 72 hours store at -20^0.
Shipping Requirements	Ship on cold packs or dry ice, if frozen. Ship in approved UN 6.2 shipping container.
Specimen Processing	Separate specimens off the clot before sending to Public Health Laboratory. Transfer serum into plastic tube.
Causes for Rejection	Too old, not shipped at correct temperature, hemolyzed
Normal Values	Residents of this often show low titer (weak) test for RMSF and HER.
Methods	Sent to CDC
Turnaround Time	4-6 weeks
Clinical Significance and Interpretation	Significance of positive test combined with clinical signs and presumptive diagnosis
Comments	Acute and convalescent phase specimens are preferred.

ZIKA VIRUS DETECTION

Synonyms	Zika virus
Patient Requirements	Pregnant women with a history of travel to endemic areas, i.e. Caribbean, Central and South America should be tested. All other patients with pertinent travel history and clinical symptoms should be tested. Called 501-537-8969 prior to submitting a sample. Samples submitted without prior approval will be rejected.
Collection Requirements	Collect in SST for serology and PCR molecular testing. Submit two SST tubes. Serum must be collected ≥4 days post onset of symptoms for serology. For PCR testing, serum must be collected within 1-7 days post onset of symptoms. The ideal serum collection date for both assays to be completed is to collect within 4-7 days post onset of symptoms. For PCR, submit urine and/or amniotic fluid in sterile, screw-capped vial secured with thermoplastic, self-sealing lab film within 14 days post onset of symptoms. Include CDC specimen submission for 50.34 (http://www.cdc.gov/zika/hc-providers/diagnostic.html). Include date of onset of symptoms, specimen collection dates, and pertinent travel history. Print form and send with the specimens.
Specimen or Source	Serum and CSF for MAC-ELISA IgM and PCR RNA detection Urine and amniotic fluid for PCR RNA detection
Volume	3 mL of serum, 0.5 mL of CSF, 0.5 -1.0 mL of urine and/or amniotic fluid
Container	Collect serum in SST. Centrifuge. Label specimen with patient's full name, date of birth and indicate the date and time of collection on the test requisition. Separate serum or plasma from cells within 2 hours after collection. If transferred to another tube, tub must be sterile. Collect urine in sterile, screw-capped vial secured with thermoplastic, self-sealing lab film. Label vial as described above for serum submission.
Storage Conditions	2-8°C DO NOT FREEZE
Shipping Requirements	Ship on cold packs in approved UN 6.2 shipping containers on the same day of collection or the following day. Specimens can be taken to the local health unit to be sent by courier to the ADH lab. Please contact the local health unit prior to sending samples to them.
Specimen Processing	Separate serum from clot before shipping.
Causes for Rejection	Hemolyzed, not shipped on cold packs or warm when received, SST not centrifuged, quantity insufficient, collected outside of defined parameters for patient specimen submission and no prior approval.
Normal Values	Nonreactive for IgM and PCR
Method	MAC-ELISA for IgM detection, Trioplex rRT-PCR for RNA detection
Turnaround Time	6 business days for serology specimens for nonreactive results. Positive results will be forwarded to CDC for further testing. 2 business days for PCR testing
Clinical Significance and Interpretation	Positive MAC-ELISA IgM results indicate recent infection with zika virus. However, further testing is required at CDC. Positive PCR results indicate recent infection of zika virus
Comments	Before submission of specimens, prior consultation with ADH Epidemiology program is required. Contact number for submission of specimens is 501-537-8969. Results will be forwarded to ADH Epidemiology. Hard copies of results will not be mailed to your lab at this time.

FORMS

The Miscellaneous Examination Form below is for emergency use only.

If you are already a client of the Arkansas Department of Health Public Health Laboratory you should have an electronic copy of the Public Health Laboratory's test request with your submitter number. Please use that form to submit tests specimens to the Public Health Laboratory.

If you are a new client of the Public Health Laboratory please call 501-661-2450 or email adh.lab@arkansas.gov to acquire a test requisition. Requests from new clients are subject to approval by the Public Health Laboratory Director.

ARKANSAS
DEPARTMENT OF HEALTH
PUBLIC HEALTH LABORATORY
201 South Monroe
Little Rock, AR 72205

MISCELLANEOUS EXAMINATION Form

Patient Information (Required fields)**

Patient's Last Name** | First Name** | Middle initial

Address**

City** | State** | Zip** | Co. of Residence**

DOB(mm/dd/yy)** | Sex** O Male O Female

O White O Black or American African Race**
O American Indian/Native Alaska O Asian
O Native Hawaiian/Pacific Islander O Other

Ethnicity** O Hispanic O Non-Hispanic O Unknown

Pregnant? O Yes O No O Unknown If Yes, Expected Date of Delivery? MM DD YY

Submitter Information (Required fields)**

Submitter ID or #** | Submitter's Name**

Submitter's Address**

City** | State** | Zip**

Phone | Contact

Fax

MISCELLANEOUS EXAMINATION

____ :____ Time Collected**

Date of Onset of Symptoms: ___ / ___ / _____
(required for Arboviral / Rickettsial tests) MM DD Y Y Y Y

Specimen:** _____

Examination Requested:** _____

Requestor Information (Required)

Requestor' s Name**
_____

(Required)

____ /____ /____ Date Collected **

PURPOSE (Select One)

O Tuberculosis O Family Planning
O Diagnostic O Recheck specimen
O Contact O Cluster – Suspect
O Rash Present O Lesion Present
O Prenatal O Routine Physical

Notes: This form is for **PRIVATE** submitters only. HL-06
O = Select only ONE; ☐ = Check ALL that apply; ** = Required fields; For times, use Military format HH:MM REV. 06/01/2009

ARKANSAS DEPARTMENT OF HEALTH
Public Health Laboratory
Rabies Examination Form

Submitter's Information

Agency _____
Name _____
Address _____
City _____ State ____ Zip ____
County _____ Phone _____

Owner's Information

Name _____
Address _____
City _____ State ____ Zip ____
County _____ Phone _____

Person Bitten by this Animal

Name _____
Address _____
City _____ State ____ Zip ____
County _____ Phone _____

Animal Bitten by this Submitted Animal

Kind of Animal _____ Owner _____
Address _____
City _____ State ____ Zip ____
County _____ Phone _____

INFORMATION ON SUBMITTED ANIMAL

Specify Kind of Animal
☐ Dog ☐ Skunk (Circle)
☐ Cat Striped Spotted Not Sure
☐ Cow ☐ Fox (Circle)
☐ Bat Red Gray Not Sure
☐ Other (Specify)
_____

Location Submitted Animal Found ☐ At Owner's Home
Address _____ County _____
City _____ State ____ Zip ____
Date Animal Died __/__/_____
☐ Natural Death ☐ Killed ☐ Unknown

Was Submitted Animal Bitten by Another Animal?
☐ Yes, When? ☐ No ☐ Unknown
___/__/_____

Was Submitted Animal Vaccinated Against Rabies?
☐ Yes, When? ☐ No ☐ Unknown
___/__/_____ _____

Information about the veterinarian who observed the animal
Name _____ Phone _____
Address _____ City _____ State ____ Zip ____

Noted Symptoms:
☐ Slobbering
☐ Difficulty in Swallowing
☐ Restlessness & Excitability
☐ Sagging Jaw
☐ Paralysis
☐ Unusual Viciousness
☐ Change in Voice
☐ Unable to Close Mouth
☐ Other (Specify)
_____
_____

LABORATORY USE ONLY (Do not write in this section)
Microscopic Exam of Brain Material for Rabies was: ☐Negative ☐Positive

☐Unsatisfactory _____

Specimen Number _____ Date / Time Received ____/____/____ ____:____ Test Completed on ____/__/__

Ship via _____ Analyst _____ Results Reported to _____ on ____/____/__

HL-12 (R 2/09)

March 2017