

Wyoming Department of Health
Public Health Laboratory

**MANUAL OF
LABORATORY
SERVICES**

Wyoming Public Health Laboratory

Combined Laboratories Facility
208 South College Drive
Cheyenne, Wyoming 82002

During Hours: 307-777-7431
After Hours: 888-996-9104
www.health.wyo.gov/phsd/lab

CLIA CERTIFICATE #53D0662169

**Public Health Division
Public Health and Science Section**

INTRODUCTION

The Wyoming Public Health Laboratory (WPHL) serves as the state's advanced-level diagnostic facility to alert physicians and epidemiologists to outbreaks, provide technical advice, and recognize disease patterns and new pathogens. The WPHL consists of specialized testing sections, including the Microbiology Testing Program, the Chemical Testing Program and the Bioterrorism Response Laboratory Program.

MICROBIOLOGY TESTING PROGRAM

The Microbiology Section of the WPHL is comprised of specialized laboratory areas including Bacteriology, Parasitology, Water Testing, Immunology and Serology, Molecular Microbiology and Emerging Diseases, and Mycobacteriology. These laboratories are dedicated to providing various testing services to the state of Wyoming and its residents to identify, track, control and prevent infectious diseases. Cooperative associations include the Centers for Disease Control and Prevention (CDC), the Environmental Protection Agency (EPA), Wyoming state agencies, city and county health departments, health care providers, schools, coroners, and state and clinical laboratories.

CHEMICAL TESTING PROGRAM

The Chemical Testing Program provides analysis for drugs of abuse to support state agencies, law enforcement and local public agencies involving drug offenders. Blood alcohol testing is performed to support law enforcement in DUI cases. The state intoximeter program is maintained through the Chemical Testing Program. For more information about drug toxicology testing, blood alcohol testing or the intoximeter program, please go online to www.health.wyo.gov/phsd/lab/chemintro.html or call 307-777-7449.

BIOTERRORISM RESPONSE LABORATORY PROGRAM

The Bioterrorism Response Laboratory (BRL) has a comprehensive statewide laboratory response program that provides Wyoming with the infrastructure necessary to respond to bioterrorism threats and emerging infectious diseases. The BRL is the only Biosafety Level 3 laboratory in the state that is CLIA regulated and capable of performing confirmatory testing for bioterrorism agents in humans. The BRL is a confirmatory level member of the Laboratory Response Network; a national coalition of laboratories with designated response capabilities working jointly with the CDC.

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GENERAL INFORMATION

LOCATION, BUSINESS HOURS AND HOLIDAY SCHEDULE

Wyoming Public Health Laboratory

Combined Laboratories Facility
208 S. College Dr.
Cheyenne, WY 82002

Phone: **307-777-7431**

Fax: 307-777-6422

24 Hour Public Health Emergency Response: 1-888-996-9104

OFFICIAL BUSINESS HOURS

8:00 AM to 5:00 PM Monday through Friday

ANNUAL HOLIDAY SCHEDULE

The WPHL observes nine official state government holidays:

New Year's Day
Equality Day
President's Day

Memorial Day
Independence Day
Labor Day

Veterans Day
Thanksgiving
Christmas

PUBLIC HEALTH EMERGENCY

If it becomes necessary to contact the WPHL during off hours, please use the 24 Hour Public Health Emergency Response – All Hazards Hotline at 1-888-996-9104.

The WPHL can provide staffing to perform analysis on weekends and holidays during circumstances in which public health may be threatened. Arrangements for after-hours or weekend testing can be made by contacting the laboratory.

WEBSITE, CONTACTS, CERTIFICATIONS

WPHL WEBSITE

The WPHL website has downloadable copies of this manual and test requisition forms as well as additional information on the specialized services provided through WPHL. The site can be accessed through the Wyoming Department of Health homepage or directly at: www.health.wyo.gov/phsd/lab.

LABORATORY CONTACTS

Richard Harris, PhD - Laboratory Administrator
307-777-7431

Jim Walford, BS - Manager, Microbiology Testing Program
307-777-6053

Tom Johnson, BS - Manager, Chemical Testing Program
307-777-7449

Shawna Dereemer, MS - Supervisor, Bioterrorism Response Laboratory Program
307-777-3735

CERTIFICATIONS

WPHL holds Certificate #53D0662169, issued by the Health Care Financing Administration under the Clinical Laboratory Improvement Amendments of 1988 (CLIA- 88).

The Bioterrorism Response Laboratory operates under the Select Agent Program certification #C20031121-0067.

The WPHL also holds a Drug Enforcement Agency (DEA) certificate and a certificate issued by the Environmental Protection Agency (EPA) under the Safe Drinking Water Act (SDWA) Program (PL 93-523).

All WPHL laboratory sections participate in appropriate proficiency testing programs administered by the College of American Pathologists (CAP), the CDC, the EPA and other approved private, federal and state proficiency testing providers.

POLICIES: TESTING AND REPORTING

SURVEILLANCE TESTING

The WPHL is an integral part of disease surveillance performed by the State Epidemiologist. As such, the WPHL provides confirmatory or reference testing for laboratories isolating organisms or otherwise providing laboratory tests, which aid in the diagnosis of reportable infectious diseases. Hospitals and other private or public laboratories are requested to submit subcultures, smears, or serum specimens for reportable diseases to the WPHL as an aid to the surveillance process. These isolates are listed on the Reportable Disease List (see Appendix 1).

REPORTABLE DISEASES

State law requires that attending health care providers **and** laboratories performing diagnostic testing send notification of reportable diseases to the State Epidemiology Office within required time limits. Note that some diseases must be reported immediately upon identification; others must be reported within 24 hours, and others must be reported within 7 days.

For a copy of the reportable disease report form, see Appendix 1 or go online to <http://www.health.wyo.gov/phsd/epiid/reporting.html>. For more information, contact the WDH Epidemiology Program at 307-777-7953.

LABORATORY REPORTING

Laboratory reports are sent only to the authorized medical personnel who submitted the specimen. State law requires notification of health officials when reportable communicable disease organisms are isolated and identified. Except for these situations, copies of laboratory reports are only released to others with the written request and permission of the original submitter.

REFERENCE TESTING, FEES, SPECIMEN DELIVERY

REFERENCE TESTING

The WPHL refers a select number of reportable disease test requests to CDC or state public health laboratories. Requests that are to be performed at a commercial reference laboratory must be initiated directly by the requesting clinical laboratory or health care provider (Refer to Table of Contents to find specific information on reference testing).

LABORATORY FEES

The WPHL has approved rules for fees. For more information on testing fees, please visit the WPHL website at <http://www.health.wyo.gov/phsd/lab/testingfees.html>.

The WPHL is supported by a combination of state general funds, revenues and federal grants. As a public health laboratory, the purpose of the WPHL is to provide testing for the support of state health priorities that are of public health and public safety importance.

DELIVERY OF SPECIMENS

Specimens may be delivered to the WPHL **during normal business hours** via:

- **U.S. Postal Service** **Use zip code 82002**
- **UPS, FedEx, etc.:** ***Must use zip code 82007***
- **Delivery in person:** Drop-box located in lobby
- **Courier Service:** A private courier service is contracted to pick up samples at designated clinical laboratories during the week. For more information, see Appendix 2, or go online to: www.health.wyo.gov/phsd/lab/microbiology_section.html.

Please Note: Specimens associated with potential or known disease outbreaks should be sent by overnight carrier.

MICROBIOLOGY TESTING PROGRAM

SPECIMEN COLLECTION PROTOCOL AND SUPPLIES

Specific protocols for the collection and submission of laboratory specimens can be found in the appendices of this manual (see Table of Contents). Please read each collection protocol entirely before packaging and shipping specimens, as failure to follow the protocol may lead to specimen rejection.

Not all collection supplies are available to all providers; some supplies may be reserved for suspect outbreaks, be reserved for certain programs that are enrolled in that particular testing or may require prior consultation with the WPHL or PH Epidemiologists prior to specimen submission. Each collection protocol should have an explanation of availability of testing and any restrictions that may apply.

The WPHL provides some mailing containers and supplies for collection of specimens, which should comply with U.S. Postal Service regulations. Ultimately, it is the responsibility of the **shipper** to ensure proper packaging and shipment of clinical specimens. Proper packaging should practically eliminate leakage or breakage in transit.

To order collection kits, please fax or mail a completed supply order form. The fax number is 307-777-6422. See Appendix 3 for a copy of the form, or go online to: www.health.wyo.gov/phsd/lab/microbiology_section.html.

Laboratory requisition forms are also available at the WPHL website, or see Appendix 4 for a copy of the form. *Note: specimens submitted for influenza testing require a different requisition form. For a copy of the Influenza Test Request Form, see Appendix 5 or go online to <http://www.health.wyo.gov/phsd/lab/influenza.html>.

BACTERIOLOGY AND PARASITOLOGY SECTION

John Harrison 307-777-6062

BACTERIAL CULTURE IDENTIFICATION- AEROBIC/ANAEROBIC

Type of Test: Organisms in the Enterobacteriaceae, *Haemophilus*, and *Enterococcus* are identified by biochemical systems. All other isolates are identified using 16s r DNA sequencing.

Specimen Requirements: See Appendix 6

Reporting and Interpretation: Isolates are reported by genus and species in most cases. On occasion, genus only is reported. 16s r DNA sequencing identifies to species for isolates with a matching sequence of $\geq 98\%$ to the reference sequence.

Additional Comments: Organisms that are not readily identifiable may be forwarded to the CDC for further identification. Call for proper submission of *Neisseria gonorrhoeae* cultures.

CORYNEBACTERIUM DIPHTHERIAE CULTURE – DIPHTHERIA

***Contact bacteriology laboratory to make arrangements for specimen submission.**

NEISSERIA-GONORRHOEAE CULTURE

***Contact bacteriology laboratory to make arrangements for specimen submission.**

ENTERIC SCREEN (FECAL BACTERIA CULTURE)

Type of Test: Bacterial culture screening for *Salmonella*, *Shigella*, *Campylobacter*, *Yersinia*, *Aeromonas hydrophila*, *Plesiomonas shigelloides*, *Vibrio* and enterohemorrhagic *E. coli* O157. Shiga toxin testing is performed on broth culture. Presumptive enteric isolates are identified using biochemicals or 16s DNA sequencing. Serogrouping or serotyping is performed on *Shigella*, *Salmonella*, and *E. coli*.

Specimen Requirements: See Appendix 7

Reporting and Interpretation: Negative specimens are reported as "No enteric pathogens isolated". Enteric isolates identified as pathogenic isolates are identified and reported out as genus and species or serogroup.

HAEMOPHILUS INFLUENZAE SEROTYPING

Type of Test: Biochemical identification system and 16s DNA sequencing followed by slide agglutination test for serotyping.

Specimen Requirements: See Appendix 6

Reporting and Interpretation: Isolates identifications are confirmed and serotyped. Reports include the genus/species and serotype. Serotyping is available for type A and B.

Additional Comments: Organisms that cannot be readily serotyped may be forwarded to the CDC for further identification.

NEISSERIA MENINGITIDIS SEROTYPING

Type of Test: Biochemical identification system and 16s DNA sequencing followed by slide agglutination test for serotyping.

Specimen Requirements: See Appendix 6

Reporting and Interpretation: Specimens are reported by genus and species. Isolates identified as *N. meningitidis* are serotyped, and serotypes A, B, C, D, X, Y and Z are reported.

Additional Comments: Please contact the laboratory before submission of isolates for serotyping.

PARASITE TESTING – STOOL FOR FECAL PARASITES

Type of Test: Stools are concentrated and stained slides made and examined for eggs, cysts, and larvae. DFA for *Giardia* and *Cryptosporidium* is performed on each stool.

Specimen Requirements: See Appendix 8

Reporting and Interpretation: Positive results are reported as genus and species of organism seen as well as stage of life cycle noted. Negative results are reported as "No ova or parasites seen".

Additional Comments: The WPHL does not examine blood smears for parasitic infection. Blood smears may be referred to the CDC.

SHIGA TOXIN TESTING

Type of Test: Screens for both *Escherichia coli* O157:H7 and the non-O157 STEC.

Diarrheal stools are placed on sorbitol MacConkey agar and in MacConkey broth. Suspicious isolates are analyzed using the Premier EIA EHEC (enterohemorrhagic *E. coli*) test, which is specific for Shiga-like toxins I and II (verotoxins).

Specimen Requirements: See Appendix 7

Reporting and Interpretation: Shiga toxin can be a standalone request, or is normally part of an enteric screen which includes isolation and identification of enteric pathogens. If no enteric pathogens are isolated, yet the stool sample is positive for Shiga toxins, the specimen is reported as “Positive for Shiga toxins”. If the specimen is negative for Shiga toxins and no enteric pathogens are isolated, the specimen is reported as “No enteric pathogens isolated”.

If the test request was only for Shiga toxins, the report is either “Positive” or “Negative” for Shiga toxins. Specimens or enteric isolates identified as presumptive pathogenic isolates are reported as genus and species or serogroup.

Additional Comments: Laboratories screening samples with bloody diarrhea only for O157:H7 should test negative samples for non-O157; or submit sample to the WPHL for non-O157 analysis. The WPHL also accepts non-O157 *E. coli* isolates for STEC analysis.

Escherichia coli O157:H7 is included in a category of diarrheagenic *E. coli* that includes over 100 serotypes of Shiga toxin-producers (STEC). These STEC serotypes cause a spectrum of illness that can present as non-bloody diarrhea, severe bloody colitis (hemorrhagic colitis) and hemolytic uremic syndrome (HUS).

SHIGELLA SEROGROUPING

Type of Test: Bacterial culture followed by slide agglutination for serogrouping of groups A, B, C, and D.

Specimen Requirements: See Appendix 6

Reporting and Interpretation: The following *Shigella* groups will be reported.

- **Group A:** *Shigella dysenteriae*
- **Group B:** *Shigella flexneri*
- **Group C:** *Shigella boydii*
- **Group D:** *Shigella sonnei*

STREPTOCOCCAL SEROGROUPING

Type of Test: Slide agglutination for serogroups A, B, C, F and G.

Specimen Requirements: See Appendix 6

Reporting and Interpretation: Beta-hemolytic isolates are serotyped against groups A, B, C, F, and G and reported only by serogroup. Some of the more common species and their relationship to the serogroups are listed below:

Group Streptococcal Species

- **Group A:** *S. pyogenes*
- **Group B:** *S. agalactiae*
- **Group C:** *S. equi*, *S. zooepidemicus*
- **Group F:** *S. anginosus*
- **Group G:** *S. canis*

Reporting and Interpretation: Interpretation will be discussed with submitter when reported.

Additional Comments: *Streptococcus* species isolates implicated in disease processes other than strep throat may be submitted for serogrouping. Serogrouping may be useful, epidemiologically, to relate cases in an outbreak situation. Organisms that cannot be readily serogrouped may be forwarded to the CDC for further identification with prior consultation between the attending physician and the CDC branch chief.

While certain species of *Streptococcus* may be directly related to certain serogroups, the result of a serogroup cannot be considered confirmation of a species of *Streptococcus*.

STREP THROAT – RAPID STREP TESTING

Cathy Heyl – 307-777-7431

Type of Test: Acceava Strep A, rapid strep antigen test.

Specimen Requirements: See Appendix 9

Reporting and Interpretation: Results are reported as positive or negative. Only positive results are reported via phone to the submitter. All hard copy results are mailed. Testing is performed within 24 hours of receipt except on weekends. Confirmatory cultures are not performed on negative tests.

Additional Comments: Strep throat testing is performed only for schools, public health nurses, and city-county health units. Specimens are not accepted from private physicians or for-profit clinics or hospitals.

WATER TESTING PROGRAM

Wanda Manley 307-777-8987

BACTERIOLOGICAL ANALYSIS: TOTAL COLIFORM AND *E. COLI*

Type of Test: The WPHL is EPA certified to analyze water for the presence of total coliforms and *E. coli* using the Colilert and Colisure methods.

The WPHL offers this service to all EPA monitored systems, city, county, state, or federal government agencies, as well as private entities. Individuals seeking to test their domestic wells are encouraged to visit our website at <http://www.health.wyo.gov/PHSD/lab/index.html> for frequently asked questions.

Program Enrollment: All submitters are required to enroll in the Water Testing Program prior to sample submission. There is currently an analytical fee per test which will be invoiced on a quarterly basis. Customers will be mailed sample kits according to their desired testing schedule. For EPA samples, a copy of the results is automatically sent to the EPA. Please call for more information or to enroll in the program.

Additional Comments: Wyoming does not have primacy over water supply systems. The EPA carries out compliance and enforcement for the state. Questions concerning EPA monitored systems for analysis and disinfection should be directed to the EPA in Denver at 1-800-227-8917.

IMMUNOLOGY AND SEROLOGY

**Claudia Rogers 307-777-6061 (HIV/ Hepatitis)
307-777-6062 (Syphilis / Rubella / Rubeola / Varicella / Mumps)**

CHLAMYDIA TRACHOMATIS- NEISSERIA GONORRHOEAE AMPLIFIED NUCLEIC ACID PROBE

Type of Test: Gen Probe Aptima Combo 2 assay is an amplified nucleic acid probe technology, which is used for testing of both *Chlamydia trachomatis* and *Neisseria gonorrhoeae* from a single specimen.

Specimen Requirements: See Appendix 10

Reporting and Interpretation: Specimens are reported as negative, positive and borderline for chlamydia and gonorrhea. A negative result indicates that no nucleic acid was detected for chlamydia or gonorrhea. A positive result indicates that nucleic acid was detected for chlamydia or gonorrhea. A borderline result indicates that the presence or absence of nucleic acid could not be determined. This may be due to inadequate specimen collection, early stage of infection, or concurrent antibiotic therapy with residual organisms still present. Another specimen should be collected and resubmitted. All results are mailed to the provider. The repeat positive results are also called to the provider.

Additional Comments: Both organisms - *Chlamydia trachomatis* and *Neisseria gonorrhoeae* are tested on the same specimen. All results are dependent on adequate specimen collection. Specimens are submitted in a specific transport medium that lyses the organisms, exposing the nucleic acid to be tested. The assay will detect nucleic acid of live, as well as dead organisms, and therefore should not be used as a test of cure.

HEPATITIS A VIRUS: HAV-TOTAL IMMUNE GLOBULIN
AND IGM ANTIBODY TEST

Type of Test: Bio-Rad enzyme immunoassay HAV-Total and Bio-Rad enzyme immunoassay HAV-IgM

Specimen Requirements: See Appendix 11

Reporting and Interpretation:

HAV-Total:

HAV-Total positive results indicate that the patient has IgG or IgM antibody to the hepatitis A virus. This may indicate that the patient is currently infected or has had a previous infection with the hepatitis A virus. Status of the individual should be made in conjunction with the HAV-IgM test results. Negative results indicate that the patient has no detectable level of antibody to the hepatitis A virus. The patient is considered susceptible to the hepatitis A virus and may be considered a candidate for immunization if they meet high-risk criteria.

HAV-IgM:

HAV-IgM positive results indicate that the patient has an acute infection with the hepatitis A virus and should be considered infectious. Negative results indicate that the patient has no detectable level of IgM antibody to the hepatitis A virus. Be advised that the patient could be in the incubation period.

Additional Comments: These assays are only available in the case of acute hepatic illness, exposure to hepatitis A cases, or suspect outbreaks after direct consultation with the WDH Epidemiology Program.

The HAV-Total marker detects total antibody and should be used to screen patients to determine if they are immune due to a previous hepatitis A infection or have received the vaccination or if patient is exhibiting signs and symptoms of hepatitis infection. The HAV-IgM marker is present during most acute hepatitis A infections and should be requested if patient is exhibiting signs and symptoms of hepatitis infection to determine if the patient is actively infected and potentially infectious.

HEPATITIS B VIRUS: HBSAB – HBV SURFACE ANTIBODY,
HBSAG-HBV SURFACE ANTIGEN AND HBCIGM – HBV CORE IGM ANTIBODY

Type of Test: Bio-Rad enzyme immunoassay hepatitis B (HBV) surface antibody, HBV surface antigen and HBV core IgM antibody

Specimen Requirements: See Appendix 11

Reporting and Interpretation:

HBV Surface Antibody:

Positive results indicate that the patient has antibody to HBV. This usually is a result of a resolved infection with HBV or immunization against HBV. Negative results indicate that the patient has no antibody to HBV and they are susceptible to infection with HBV. People vaccinated against HBV may have antibody levels that are present but not detectable.

HBV Surface Antigen:

Positive results indicate that the patient has an acute or chronic infection with HBV, and should be considered infectious. Negative results indicate that no detectable hepatitis B viral antigen was detected and status of the patient should be made based on the result of the HBcIgM.

HBV Core IgM Antibody:

Positive results indicate that the patient has IgM antibody to HBV, and has recently been infected with HBV. The patient should be considered infectious. Negative results indicate that no detectable level of antibody to HBV was detected and the status of the patient should be made in conjunction with the result of the HBsAg.

Additional Comments:

Three viral markers are available to determine the status of a patient: HBsAb - HBV surface antibody, HBsAg - HBV surface antigen, and HBcIgM - HBV core IgM antibody. HbsAg and HbcIgM should be ordered together.

HBV surface antibody testing is offered for an overt blood-borne exposure for state employees and by referral through the WDH HIV/AIDS/Hepatitis Program, in cases of sexual or blood borne contact to a known infectious partner or in cases of acute hepatic illness through publicly funded programs. Routine determination of immune status is no longer available.

HBV surface antigen marker should be requested to detect surface antigen to determine whether the patient has an acute or chronic HBV infection and to determine if the blood is potentially infectious.

HBV core IgM marker should be requested to detect core IgM antibody and determine whether the patient has an acute HBV infection and to determine if the blood is potentially infectious

HEPATITIS C VIRUS (HCV): HCV ANTIBODY

Type of Test: Bio-Rad enzyme immunoassay for hepatitis C virus (HCV) antibody

Specimen Requirements: See Appendix 11

Reporting and Interpretation: A positive result is consistent with HCV infection. It may be an acute, chronic, or resolved infection. Positive results are reported based on the CDC recommended algorithm in which high repeat reactive HCV (EIA) values, greater than 3.8 signal to cutoff ratio, may be considered screening test positive. The guidelines report that 95 percent of these cases are RIBA positive on confirmation. An interpretation of this recommendation will be included with the test results. The specimen will not be confirmed by RIBA. However, if the signal to cutoff is less than 3.8 on the screening EIA, the WPHL will reflex to RIBA testing and this report will be included with the final results. Negative results provide no evidence for infection with HCV.

Additional Comments: Enzyme immunoassay HCV antibody marker should be requested to screen for HCV antibody. This screening test does not differentiate between acute, chronic, or resolved infections. The patient may or may not be infectious if screening test is positive. HCV testing is available with no restrictions for testing of patients who meet high-risk criteria if submitted through publicly funded programs.

HIV ANTIBODY TESTING

Type of Test: Bio-Rad enzyme immunoassay for HIV antibodies 1, 2, and O variant.

Specimen Requirements: See Appendix 12

Reporting and Interpretation: Sample results are reported as negative or positive. Negative samples have no detectable antibody to HIV. Positive samples are those that tested positive on initial EIA, repeat EIA, and Western blot. Upon completion of testing, specimens that are initially reactive are repeated in duplicate. If either of the repeat tests is reactive, the specimen is considered repeat reactive and will be confirmed by Western blot.

Additional Comments: There is a window period with an HIV infection, and a negative result cannot guarantee that a patient is not infected with the HIV virus. All inquiries about HIV test results will be handled by the WDH AIDS Prevention Program. To contact the HIV Prevention Program, call 307-777-5932 or visit their website at: <http://www.health.wyo.gov/PHSD/aids/index.html>.

Only providers approved by the HIV Prevention Program to provide HIV Counseling and Testing may submit HIV tests to the PHL. **PEMS Forms** are required for all HIV tests and can be ordered by emailing Robert.johnston@health.wyo.gov Completed PEMS forms are sent to Cheryl Corbin, 6101 Yellowstone, Room 510, Cheyenne, WY 82002.

HIV MULTISPOT FOR HIV 1 AND 2

Type of Test: Multi-spot rapid test for confirmation of HIV antibodies.

Specimen Requirements: See Appendix 12

Reporting and Interpretation:

If the Multispot is positive with a repeat positive HIV EIA, the report is MULTISPOT: HIV-1 REACTIVE - antibodies to HIV-1 present or HIV-2 REACTIVE – antibodies to HIV-2 present.

If both HIV EIA and Multispot are requested and the Multispot is negative with a negative HIV EIA the report is MULTISPOT: NONREACTIVE – HIV-1 and/or HIV-2 antibodies not detected.

If the Multispot is negative with a repeat positive HIV EIA the report is HIV EIA positive with a negative Multispot. The following comment is included “ if this patient is considered high risk for HIV, contact the WY PHL for the appropriate collection tube to draw this patient for HIV RNA testing or redraw a second serum specimen in 3-6 weeks”.

Additional Comments: The Multispot assay replaces the Western Blot confirmatory test. An EIA screening test is performed for all samples prior to performing the Multispot.

SEROLOGY SECTION

307-777-6062

VIRAL SEROLOGIES

MUMPS, RUBELLA, RUBEOLA AND VARICELLA ZOSTER VIRUS (CHICKEN POX) SEROLOGY

Type of Test: The bioMérieux enzyme-linked fluorescent antibody technique is a qualitative assay for detection of mumps, rubeola, and varicella antibodies. Fisher Sure-View latex agglutination test is for the qualitative detection of antibodies to the rubella virus.

Specimen Requirements: See Appendix 11

Reporting and Interpretation:

Mumps and rubella:

Results are reported as positive or negative. Specimens reported as positive have detectable antibody, and the patient is considered immune if the assay is for screening purposes only. Specimens reported as negative show no detectable antibody, and patients are considered to be non-immune or susceptible. Detectable antibodies indicate past exposure to either by disease or immunization.

Rubeola and varicella:

Results are reported as positive, negative, or equivocal. Positive results show evidence of antibody to the **virus**, either wild virus or vaccination and should indicate immune status. Negative results show no evidence of detectable antibody and indicate that the individual is susceptible. Equivocal results are borderline and another specimen should be submitted since it was not possible to determine the immune status from the specimen.

Additional Comments: For symptomatic illness, contact the epidemiology infectious disease section for referral for IgM testing.

SYPHILIS TESTING:

RPR QUALITATIVE & QUANTITATIVE SEROLOGY

Type of Test: The RPR (rapid plasma reagin) test is a non-treponemal flocculation test used to screen for syphilis.

Specimen Requirements: See Appendix 11

Reporting and Interpretation: Specimens are reported as reactive or non-reactive. Results for reactive specimens also include the titer. The titer is the highest dilution giving a positive reaction. Reactive specimens are confirmed at a reference public health laboratory.

Additional Comments: Biological false positive reactions have been associated with some infectious diseases, narcotic addiction, and autoimmune diseases. Testing of cord blood is not recommended. Diagnosis of a syphilis infection should not be made on a single reactive result without the support of a positive history or clinical evidence. Qualitative analysis is the initial screening of undiluted specimen. Any specimen that is reactive initially will be quantitated by titrating the specimen at doubling dilutions. Quantitation will establish a baseline from which changes in titer can be determined.

MOLECULAR MICROBIOLOGY AND EMERGING DISEASES SECTION

Wanda Manley - 307-777-8680

FOODBORNE DISEASE INVESTIGATION

Type of Test: Toxin assays for *Clostridium perfringens*, *Bacillus cereus* and *Staphylococcus aureus*.

Reporting and Interpretation: Enterotoxin production is reported for *Clostridium perfringens*, *Staph aureus*, and *Bacillus cereus*. Presence or absence of *Salmonella*, *Shigella*, *Listeria*, *Campylobacter* and *Vibrio* is reported. If isolated, *Salmonella*, *Shigella*, *Listeria* and *E. coli* O157:H7 will be serotyped.

Additional Comments: Foods implicated in a foodborne outbreak are tested for pathogens. Whenever possible, clinical samples (stool) should accompany food samples. All sample collection must be coordinated between the local health department and/or sanitarian and the WPHL. After the initial investigation is completed, appropriate testing will be determined based on symptoms and incubation times for suspected food pathogens.

An excellent resource on the diagnosis and treatment of foodborne illness, including symptomology and onset time frames is the article *Diagnosis and Management of Foodborne Illness* (CDC – MMWR Publication/April 16, 2004/53(RR04);1-33). The article is available online at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5304a1.htm>.

PULSED FIELD GEL ELECTROPHORESIS (PFGE)

Type of Test: Pulsed Field Gel Electrophoresis (PFGE) is a molecular technique used to determine genetic relatedness within a single bacterial species.

Reporting and Interpretation: Gel patterns are entered into PulseNet, the CDC database that performs comparisons to other similar strains recovered across the nation. Customized reports are provided to the WDH Infectious Disease Epidemiology Program for use in consultation with submitter.

Additional Comments: Used primarily with foodborne bacterial pathogens, PFGE is also useful in nosocomial outbreak situations to determine if isolates from different patients or sources are related. PFGE is used by the WPHL to evaluate bacterial isolates suspected of being part of an outbreak or cluster of disease in the state or at a facility.

SALMONELLA SEROTYPING

Type of Test: Slide agglutination and tube agglutination against various serogroups and serotypes.

Reporting and Interpretation: Submitters (health care providers) will receive reports that include serogroup. Both serogroup and serotype are reported to WDH Infectious Disease Epidemiology Program.

Additional Comments: According to the Wyoming Reportable Disease Requirements, all *Salmonella* isolates must be sent to the WPHL for serotyping. Naming of *Salmonella* serotypes has gone through recent revisions by the CDC. *Salmonella* now consists of two species: *enterica* and *bongori*. *Enterica* has 6 subspecies; *enterica*, *salamae*, *arizonae*, *diarizonae*, *houtenae*, *indica*. Each subspecies has serovars (serotypes) within it.

MOLECULAR TESTING SECTION

Rob Christensen - 307-777-6064

INFLUENZA PCR

SUBMISSION FOR INFLUENZA TESTING WILL FOLLOW EPIDEMIOLOGY PROGRAM GUIDELINES THROUGH SENTINEL SITES. PLEASE REVIEW THESE REQUIREMENTS BEFORE SUBMITTING.

Type of Test: Reverse transcriptase PCR analysis is offered for detection of viral nucleic acid for influenza A and B, and for differentiation between the different genotypes: A H1, A H3, and A H1N1 swine-like.

Specimen Requirements: See Appendix 13

Reporting and Interpretation: Samples are reported as positive, negative, borderline, or inconclusive for each of the primer probe sets tested, i.e.: AH1, AH3, B, and AH1N1 swine-like. A negative result indicates that the specimen was negative for all primer probe sets tested.

Additional Comments: Seasonal and epidemic influenza testing is available only to designated Sentinel sites. Upon assessment of epidemic influenza outbreaks, the State Epidemiologist may enable private providers to submit specimens. This will be announced through the Health Alert Network.

NOROVIRUS PCR

Norovirus testing can be arranged after consultation with the WDH epidemiology disease service at 1-877-996-9000. Stool specimens for norovirus testing may be collected when the case patient is suspected of being part of an outbreak or cluster of illness.

Type of Test: Reverse transcriptase PCR analysis for the detection of viral RNA to norovirus 1 and 2.

Specimen Requirements: See Appendix 7

Reporting and Interpretation: Separate results are given for norovirus 1 and norovirus 2. Results are reported as positive or negative for each. Positive results indicate that viral nucleic acid was detected for the type of norovirus listed. Negative results indicate that no nucleic acid was detected for the type of norovirus listed. Positive specimens are sent to the Regional Calicinet Laboratory for molecular genotyping.

PERTUSSIS

Type of Test: Reverse transcriptase PCR analysis for the detection of bacterial DNA to *Bordetella pertussis*.

Specimen Requirements: See Appendix 14

Reporting and Interpretation: A positive PCR test indicates detection of *Bordetella pertussis* DNA. DNA may be detected in individuals after organisms are no longer viable. Negative results indicate that the absence of detectable pertussis DNA, but should not preclude the possibility of disease in light of signs and symptoms consistent with *B. pertussis*.

Additional Comments: The pertussis PCR test screens specimens using a target assay for the gene IS481, which is present in multiple copies of *B. pertussis*. IS481 is also found in lesser quantities in *Bordetella holmesii* and *B. bronchiseptica*. Therefore, specimens that are positive for the IS481 gene will be confirmed with the PCR test for ptxS1, the pertussis toxin. Specimens that are positive for IS481 and positive for ptxS1 will be reported as positive for *B. pertussis*. Interpretation of PCR results should be considered in conjunction with an evaluation of signs and symptoms and available epidemiological information.

WEST NILE VIRUS

Type of Test: Enzyme immunoassay for detection of West Nile virus (WNV) IgM and/or IgG antibodies.

Specimen Requirements: See Appendix 15

Reporting and Interpretation:

IgM Results:

A positive result indicates infection with WNV has occurred, and usually suggests a relatively recent infection. However, these types of antibodies can be found in the body for up to a year after WNV infection has occurred. A negative result indicates that no antibody was detected. An indeterminate result indicates that the presence or absence of infection could not be determined; this may have been due to substances in the blood, which interfered with the testing. A borderline result indicates that the results are inconclusive.

IgG Results: The IgG test looks for antibodies produced after the infection has passed the early phase. Requests for West Nile Virus IgG should be requested through the WDH Epidemiology Disease service.

Additional Comments: Timing is critical in collection of both CSF and serum for WNV testing. False negative test results are possible when specimens are collected prematurely. CSF specimens for IgM should be collected within 8 days of onset of illness. Acute serum specimens

should be collected after 8 days post onset of illness. Convalescent specimens should be collected 2-3 weeks after collection of acute serum. IgG specimens may be batch tested or sent to a reference laboratory for analysis.

MYCOBACTERIOLOGY TESTING SECTION (AFB/TB)

Jody Fleming – 307-777-3609

TB SMEAR AND CULTURE

Type of Test: The bioMérieux BacT/Alert broth system is used for the culture and isolation of mycobacteria. Auramine-rhodamine stain (fluorescent antibody technique) is used for specimen smears. The Gen-Probe amplified TB test is used for smear positive specimens. (reference tests)

Specimens that are AFB smear positive will be sent to a reference lab for Nucleic Acid Amplification Test (NAAT) which can determine the presence of *M. tuberculosis* nucleic acid as well as rifampin resistance. If clinicians are highly suspicious that a patient has tuberculosis, consultation with the TB program coordinator should be conducted to determine the need for NAAT on these patient samples.

Drug Susceptibility Tests (DST) for the first four lines of drugs will be automatically performed on the first specimen submitted for each positive case of *M. tuberculosis*.

Specimen Requirements: See Appendix 16

Reporting and Interpretation:

Smear Results:

Results of specimen smears are reported the same day they are tested. Smear results are reported as positive, negative or rare, and are graded as 1+ to 4+ depending on the number of acid fast bacilli observed on the slide.

Positive smear results are reported by phone the same day they are completed, and hard copies of all results are sent to the submitting physician and to the WDH Tuberculosis (TB) Program.

Culture Results:

Cultures must be held for 8 weeks before a final report is available. Cultures are identified by DNA probe. Probes are available for *M. tuberculosis* complex and *M. avium* complex. All other culture types will be identified by 16s r DNA sequencing at the WPHL.

Hard copies of the culture results are sent to the submitting physician and the Tuberculosis Program. Amplified TB results are reported as positive, negative, or inconclusive. Copies of the reference laboratory results are sent to the provider.

NAAT Results:

Results for NAAT are generally completed within 48-72 hours and will be reported as positive, negative or inconclusive. Rifampin results will be reported as positive or negative.

DST Results:

Drug susceptibility test results will be reported as resistant or sensitive to each drug tested. Copies of the reference laboratory results will be attached to the final report.

BIOTERRORISM RESPONSE LABORATORY PROGRAM

Wyoming Bioterrorism Response Laboratory (BRL) Program operates under the auspices of the Wyoming Public Health Laboratory (WPHL). The BRL is associated with the National Laboratory Response Network and is working with community laboratories to establish a statewide laboratory response capability and capacity.

The BRL is a member of the Laboratory Response Network, which is overseen by the Centers for Disease Control and Prevention (CDC). This affiliation helps ensure that the most consistent, highest quality testing protocols for bioterrorism (BT) agents are available for use with human and environmental specimens for the residents of the State of Wyoming.

The BRL is regulated by the Select Agent Program. The Select Agent Program is the federal government program under which laboratories are regulated to work with the agents of bioterrorism that cause diseases in both animals and humans. Many of these diseases can spread quite readily on their own, do not require any microbiological manipulation or weaponization to make them effective agents for terrorism and can infect humans as well as domestic or wild animals.

Several potential BT agents are endemic in Wyoming's wildlife, requiring differentiation between naturally occurring disease and an intentional release. Rapid identification of a suspect BT agent is essential to provide valuable information in patient treatment, support criminal investigations and to ensure that safety measures are implemented to protect human and animal health and safety.

WYOMING'S LABORATORY RESPONSE NETWORK

The BRL has designed, developed, and implemented a comprehensive statewide laboratory response program that provides Wyoming with the infrastructure necessary to respond to bioterrorism threats and emerging infectious diseases.

SENTINEL LABORATORIES

Sentinel clinical laboratories, which include all local medical laboratories that perform bacteriology in the state, have been identified, assessed, and provided training and resources for participation in Wyoming's Laboratory Response Network (LRN). Laboratories that meet the following criteria are considered to be a part of the sentinel level of Wyoming's LRN:

- Located within the state of Wyoming.
- Operates as a clinical laboratory with CLIA or equivalent certification.
- Performs basic microbiological culturing and organism testing on specimens and isolates recovered from humans, as associated with sentinel laboratory activities within the LRN.

CONFIRMATORY LABORATORIES

At the confirmatory laboratory level, WPHL's BRL is coordinating with the Wyoming State Veterinary Laboratory, the Wyoming Game & Fish Wildlife Disease Laboratory, and the Department of Agriculture's Analytical Services Laboratory to develop a laboratory network that is prepared for multiple potential terrorist events. In Wyoming, many of the bioterrorism agents of most interest are endemic in some wildlife species; laboratory cooperation and coordination are necessary to adequately prepare for a potential bioterrorism threat.

WPHL'S BIOTERRORISM RESPONSE LABORATORY

The BRL is the only biosafety level 3 laboratory in the state that is CLIA regulated and capable of performing confirmatory testing for bioterrorism agents in humans. The BRL is a member of the National Laboratory Response Network and has implemented rapid molecular technologies including: Time-Resolved Fluorescence (TRF), DNA sequencing, and Polymerase Chain Reaction (PCR). Through these technologies, the BRL has the capacity for rapid presumptive testing of the agents that cause anthrax, plague, tularemia, brucellosis, chickenpox, vaccinia, and other emerging infectious diseases. This laboratory response program model ensures consistent, quality testing procedures and a defined surge capacity for any disease outbreak and enhances the WPHL's ability to respond to emerging infectious diseases.

SUBMISSION OF SUSPICIOUS POWDERS

The general public and health care professionals should first contact their local law enforcement for an initial investigation. Powder samples may be submitted to the BRL through a law enforcement agency. If a credible threat is present, the investigating law enforcement agency should contact the BRL to coordinate the details of submission. Powder samples are generally transported to the BRL by the submitting law enforcement agency

SUBMISSION OF SUSPECT ORGANISMS FOR CONFIRMATORY TESTING

Isolates from clinical samples will be accepted from a hospital laboratory or any other clinical laboratory in the state. Samples may be submitted if normal bacteriological methods are unable to rule out an agent of concern. Agents associated with bioterrorism events that can be ruled out or confirmed at the BRL include: *Bacillus anthracis*, *Francisella tularensis*, *Yersinia pestis*, and *Brucella sp.*

Packaging and Transport of Suspect Organisms: The BRL recommends that all bioterrorism rule-out isolates be packaged and shipped following current shipping guidelines for infectious substances. An All Hazards Test Request form should be completed and included with the isolate.

Testing Availability: All testing conducted by the BRL is evaluated and performed based on the individual circumstances of the situation. General testing is available Monday through Friday, with emergency specimens also tested during off-hours.

Reporting/Interpretation: Results are called to the submitter and interpretations customized to the specimen/test situation and discussed with health care providers.

REFERENCE TESTING

SPECIMEN SUBMISSION TO COMMERCIAL REFERENCE LABORATORIES

Due to budget constraints, the WPHL is unable to refer specimens directly from our facility to commercial testing laboratories. All specimens testing to be performed at a commercial reference laboratory must be initiated directly by the requesting clinical laboratory or health care provider.

REFERENCE TESTING AND SPECIMEN SUBMISSION TO CDC

For other tests not covered in this manual, please contact the WPHL at (307) 777-7431. The CDC will accept certain specimens for unusual diseases, but only by prior arrangement through a state public health laboratory. The CDC requires that all samples be accompanied by completed CDC patient history forms. The WPHL will request that the submitter complete the appropriate paperwork prior to transfer of the specimen to the CDC.

The CDC responds well to emergency situations for both public and private health; however, for some reference or diagnostic work, it may take several weeks to months before CDC reports are received.

Tests at CDC Ft Collins

<http://www.cdc.gov/ncidod/dvbid/index.html>

- Lyme
- Plague
- Tularemia
- Dengue
- Tick-borne relapsing fever
- Arboviral diseases
- Colorado Tick Fever

Tests at CDC Atlanta

- RMSF
- Botulism
- E. coli serotyping
- Other misc. tests are available upon consultation at 307-777-6053

Antimicrobial Susceptibility Confirmation Testing

The WPHL no longer requires submission of MRSA or VRE isolates for confirmation. Drug susceptibility testing is not available at the WPHL, and should be either done at the local hospital laboratory, or sent out to a reference laboratory.

Contact John Harrison at 307-777-6062 for consultation.

Testing Referred to Other Laboratories

CLOSTRIDIUM BOTULINUM – BOTULISM (REFERENCE TEST)

Type of Test: Detection of *Clostridium botulinum* toxin associated with food samples are referred to the CDC in Atlanta.

Specimen Requirements: 15 cc serum, 25 g fresh stool, and suspect food leftovers if available. Provide patient’s age, date of onset, and symptoms. Call the WPHL to get instructions on collection and shipment. Ship by overnight delivery on cold packs, **not** dry ice.

Ship directly to:

Botulism Lab
Dr. Susan Maslanka
CDC
1600 Clifton Road
Atlanta, GA 30333

Label outside of box:

“MEDICAL EMERGENCY - CALL CDC ON ARRIVAL - 404-639-2888”

Reporting and Interpretation: Antitoxin is available through CDC Epidemiology and is provided in the event of a confirmed case of adult botulism.

Additional Comments: In the event of suspect adult or infant botulism, notification should immediately be made to CDC Epidemiology and CDC Laboratory, as well as WDH’s State Epidemiologist. If the event is after normal business hours, use the CDC pager number and notify CDC security if a specimen is being sent by Fed Ex.

Notification

Monday - Friday 8:00 - 5:00 EST

CDC Epidemiology Dr. Tauxe 404-639-2888 (pronounced tokes)

CDC Laboratory Dr. Susan Maslanka 404-639-0895

After hours

CDC Botulism Pager 404-571-1334

CDC Security 404-639-2888 (use for Fed Ex reference #)

Wyoming Department of Health

During Work Hours: 1-877-996-9000

After Hours: 1-888-996-9104

VIRAL DFA (REFERENCE TEST):
MEASLES, RUBELLA, MUMPS, VARICELLA ZOSTER VIRUS

Type of Test: Direct fluorescent antibody stain to detect virus inside human cells

Specimen Requirements: Collect a lesion roof and two swabs of potentially virus containing cells from a characteristic lesion by un-roofing the lesion with a wooden stick end of a sterile swab, place the lesion roof into an empty 15 mL conical tube. Using a new swab vigorously scrape the base of the lesion with the swab. Avoid drawing excessive blood with this technique, as blood can adversely affect the test results. Place the swab into the viral media transport tube, repeat with a second swab and place in the same tube. Label the tube with patient name and date of collection and seal with parafilm. Complete a WPHL test request form – mark ‘Other’ on the form and write in ‘VZV DFA’.

Shipping Requirements: Ship as diagnostic specimens, using mailers provided by WPHL or comparable approved shipping containers. Swabs can be shipped at room temperature.

CTF AND LYME TESTING (REFERENCE TEST)

Type of Test: Colorado Tick Fever (CTF) and Lyme disease is available through the CDC. Test requests require prior approval of the laboratory supervisor or director.

Specimen Requirements: Submit at least 2mL serum in leak-proof plastic tube. Do not heat inactive specimens. Label specimen with patient name or unique identifier. Submit specimen with a completed requisition form and a completed CDC form #50.34 http://www.cdc.gov/nczved/divisions/dvbid/specimen/arboviral_shipping.html#form Specimens for Lyme disease must include an additional form: the Lyme disease report form. Paired sera are preferred, but a single acute specimen will be accepted and tested for IgM.

Shipping Requirements: Diagnostic specimens are now regulated by the DOT & ICAO/IATA Dangerous Goods Regulations. Anyone offering packages for transport containing diagnostic sample must be trained according to these regulations. For more information please refer to CDC's Scientific Resources Program. <http://www.cdc.gov/ncezid/dsr/>

Reporting and Interpretation: Test results and interpretations are made by the CDC testing laboratory. Copies of those reports will be forwarded to the submitter.

Additional Comments: All specimens to be forwarded to the CDC must be accompanied by a CDC history form (#50.34). Processing of these specimens will not take place until after this form is received and properly completed. Under certain circumstances, an additional history form must be completed to aid in epidemiological study of the disease. All bacterial, viral, mycological, or rickettsial requests not specifically listed in this manual will be referred to another laboratory

HANTAVIRUS SEROLOGY (REFERENCE TEST)

Type of Test: Enzyme immunoassay

Specimen Requirements: Contact WPHL

Reporting and Interpretation: Results are noted as positive, negative, or equivocal. If the patient has had an illness compatible with a Hanta associated respiratory illness, and the specimen was drawn three or more weeks from onset of illness, a positive IgM is reasonable evidence that the illness was associated with a Hantavirus infection. A negative IgM response in a single specimen may not rule out the possibility of infection, as the specimen may have been collected prematurely. A significant rise in IgG antibodies between acute and convalescent specimens is also suggestive of a recent infection. A positive IgG response in the absence of an IgM response may indicate past infection.

Additional Comments: Hantavirus specimens are sent to a reference laboratory for analysis. PHL will consult with EPI prior to submission approval.

RABIES TESTING REFERRAL

For rabies antibody testing after vaccinations, please contact the Rabies Laboratory at the Kansas State University at 1-785-532-4483.

For rabies testing of animals suspected of having rabies, please contact the Wyoming State Veterinary Laboratory
1174 Snowy Range Road, Laramie, WY 82070, (307) 742-6638 or 1-800-442-8331.

If an individual has been bitten by an animal, please contact Dr. Karl Musgrave, State Public Health Veterinarian at 307-421-8591 or for more information check out the following website:
<http://www.health.wyo.gov/phsd/epiid/rabies.html>

APPENDIX 1: REPORTABLE DISEASE LIST AND FORM



Wyoming Department of Health Reportable Diseases and Conditions

A report is required by law from both the attending healthcare provider/hospital and the laboratory performing diagnostic testing.

Wyoming laboratories are responsible for reporting results when a reference laboratory is used.

Mail reports to: Wyoming Department of Health, 6101 Yellowstone Road Suite 510, Cheyenne, WY 82002 OR

Fax reports (Except HIV/AIDS) to our secure fax machine at (307) 777-5573 OR

*electronic reporting at <https://prismdata.health.wyo.gov> is preferred for diseases marked with *

For all LABORATORY questions please call (307) 777-7431; REPORTING questions please call (307) 777-7953

① **DISEASES IN RED: Immediate Notification at 1-888-996-9104**

② **Diseases in Black: Reportable within 24 hours of diagnosis by fax or telephone**

Diseases in Green: Reportable within 7 days of diagnosis by fax (EXCEPT HIV/AIDS), phone, or mail

LAB: In addition to reporting, **submit an isolate or other appropriate material**, in accordance with IATA Dangerous Goods Regulations to: State Public Health Laboratory, Combined Laboratories Facility, 208 S College Dr., Cheyenne, WY 82002

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| <ul style="list-style-type: none"> ① Amoebiasis (<i>Entamoeba histolytica</i>) ① Anaplasma/Ehrlichiosis ② ANTHRAX (<i>Bacillus anthracis</i>) ② Babesiosis (<i>Babesia</i> sp) ② Bartonellosis (<i>Bartonella</i> sp) LAB ② BOTULISM (<i>Clostridium botulinum</i>) LAB ② Brucellosis (<i>Brucella</i> sp) ② California Serogroup Virus (neuro- and non-neuro invasive) LAB ② Campylobacteriosis (<i>Campylobacter</i> sp) <li style="padding-left: 20px;">Cancer ② *Chancroid (<i>Haemophilus ducreyi</i>)* ② *Chlamydia trachomatis Infection* LAB ② Cholera (<i>Vibrio cholerae</i>) ② Coccidioidomycosis (<i>Coccidioides immitis</i>) ② Colorado Tick Fever ② Creutzfeldt-Jacob Disease (including classic CJD and variant CJD) ② Cryptosporidiosis (<i>Cryptosporidium parvum</i>) ② Cyclosporiasis (<i>Cyclospora cayetanensis</i>) ② Dengue Fever ② DIPHTHERIA (<i>Corynebacterium diphtheriae</i>) ② Eastern Equine Encephalitis Virus (neuro- and non-neuro invasive) ② Ehrlichiosis/Anaplasma ② Encephalitis LAB ② <i>Escherichia coli</i>, shiga toxin-producing (0157:H7, non-0157:H7, or untyped) ② Giardiasis (<i>Giardia lamblia</i>) LAB ② Glanders (<i>Burkholderia mallei</i>) ② *Gonorrhea (<i>Neisseria gonorrhoeae</i>)* LAB ② <i>Haemophilus influenzae</i> (sterile site) ② Hantaviral Disease ② HEMORRHAGIC FEVER VIRUSES ② Hemolytic Uremic Syndrome ② Hepatitis A, B*, D, E <li style="padding-left: 20px;">*Hepatitis C* <li style="padding-left: 20px;">HIV/AIDS (Positive/reactive detection tests, All CD4's, and All viral loads) <li style="padding-left: 20px;">REPORT HIV/AIDS to: <li style="padding-left: 20px;">Phone (307) 777-7719 DO NOT FAX ② Influenza (lab confirmed) ② Influenza-Associated Deaths ② Kawasaki Syndrome ② Legionellosis (<i>Legionella</i> sp) ② Leprosy (<i>Mycobacterium leprae</i>) ② Leptospirosis (<i>Leptospira interrogans</i>) LAB ② Listeriosis (<i>Listeria monocytogenes</i>) ② Lyme Disease (<i>Borrelia burgdorferi</i>) LAB ② Malaria (<i>Plasmodium</i> sp) ② Measles LAB ② Meloidiosis (<i>Burkholderia pseudomallei</i>) ② Meningitis (all types) | <ul style="list-style-type: none"> ② Methicillin-Resistant <i>Staphylococcus aureus</i> (MRSA) Related Cases, Clusters, and Outbreaks ONLY ② Mumps LAB ② Pertussis (<i>Bordetella pertussis</i>) ② PLAGUE (<i>Yersinia pestis</i>) ② Poliomyelitis/Poliovirus Infection ② Powassan Virus (neuro- and non-neuro invasive) ② Psittacosis (<i>Chlamydophila psittaci</i>) ② Q-Fever (<i>Coxiella burnetii</i>) ② Rabies (human and animal) ② Relapsing Fever (<i>Borrelia</i> sp) ② Reyes Syndrome ② Rocky Mountain Spotted Fever (<i>Rickettsia rickettsii</i>) ② Rubella LAB ② Salmonellosis (<i>Salmonella</i> sp) ② SEVERE ACUTE RESPIRATORY SYNDROME (SARS) ② St. Louis Encephalitis Virus (neuro- and non-neuro invasive) LAB ② Shiga toxin (stool, broth, isolate, etc.) LAB ② Shigellosis (<i>Shigella</i> sp) ② SMALLPOX ② Streptococcal Disease, sterile site only ② *Syphilis (<i>Treponema pallidum</i>)* ② Tetanus (<i>Clostridium tetani</i>) ② Toxic-Shock Syndrome (Streptococcal, Staphylococcal) ② Trichinellosis (<i>Trichinella</i> sp) LAB ② Tuberculosis (<i>Mycobacterium tuberculosis</i> complex) ② TULAREMIA (<i>Francisella tularensis</i>) LAB ② Typhoid Fever (<i>Salmonella typhi</i>) ② Typhus (<i>Rickettsia</i> sp) LAB ② Vancomycin-Intermediate <i>Staphylococcus aureus</i> (VISA) LAB ② Vancomycin-Resistant <i>Staphylococcus aureus</i> (VRSA) ② Vancomycin-Resistant Enterococcus (VRE) Related Cases, Clusters, and Outbreaks ONLY <li style="padding-left: 20px;">Varicella (chickenpox only) LAB ② <i>Vibrio</i> sp (including non-cholera) ② West Nile Virus (neuro- and non-neuro invasive) ② Western Equine Encephalitis Virus (neuro- and non-neuro invasive) ② Yellow Fever LAB ② Yersiniosis (<i>Y. enterocolitica</i>, <i>Y. pseudotuberculosis</i>) <li style="padding-left: 20px;">Other Reportable Conditions ② Animal Bites ② Exposures Requiring Rabies Prophylaxis <li style="padding-left: 20px;">Blood Lead (All levels) ② Clusters/Outbreaks (GI, respiratory, other illness) ② Methemoglobinemia/Nitrate Poisoning ② SUSPECTED BIOLOGICAL, CHEMICAL, OR RADIOLOGICAL INCIDENT ② TOXIN-ASSOCIATED ILLNESS ② UNEXPLAINED DEATH ② UNUSUAL ILLNESS OF PUBLIC HEALTH IMPORTANCE |
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Updated 01/12



Wyoming Department of Health - Confidential Disease Report

A report is required by state law from both the attending health care provider/hospital and the laboratory performing diagnostic testing. Information will be held in confidence and will be used for public health epidemiological purposes only.

Patient Information

Last Name: _____	First Name: _____	Gender	<input type="checkbox"/> M	<input type="checkbox"/> F
Address: _____	City: _____	State: _____	Zip: _____	
Phone: (Home) _____	Phone: (Work) _____	Date of Birth: _____	Age: _____	
Occupation: _____	Hispanic: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
<input type="checkbox"/> White	<input type="checkbox"/> Black	<input type="checkbox"/> Asian	<input type="checkbox"/> American Indian/Alaskan Native	<input type="checkbox"/> Pacific Islander
<input type="checkbox"/> Unknown	<input type="checkbox"/> Other			

Provider and Laboratory Information

Disease: _____	Laboratory Findings: _____
Specimen Source: _____	Onset Date: _____
	Specimen Collection Date: _____
	Result Date: _____
Laboratory Name: _____	
Physician: _____	Phone: _____
	Physician City: _____
Physician Institution/Clinic: _____	
Person Reporting: _____	Phone: _____
Was Patient Hospitalized? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown Where? _____	
If Yes, Admission Date: _____ Discharge Date: _____	
Check All That Apply: <input type="checkbox"/> Healthcare Worker <input type="checkbox"/> Food Service Worker <input type="checkbox"/> Daycare Worker/Attendee	
Name of Facility: _____	
Treatment: _____	Pregnant: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
If this is a report of an STD, were any partners provided treatment? <input type="checkbox"/> Yes <input type="checkbox"/> No Number: _____	
Other Comments: _____	

Send Reports To:

Epidemiology Section
Wyoming Department of Health
6101 Yellowstone Road, Suite 510
Cheyenne, WY 82002
 Secure Fax: (307) 777-5573 / Phone: (307) 777-3593
Epidemiology Section Toll-Free, 24 Hour Hotline: 1-888-996-9104
Thank You for Your Cooperation With Disease Reporting!!!

APPENDIX 2: COURIER SPECIMENS

CLINICAL LABORATORY INSTRUCTIONS FOR COURIER PICK-UP

Delivery of supplies:

Courier services will bring supplies from the WPHL as requested. For additional supplies, please complete a supply order form (see Appendix 3) and fax, mail, or send with the courier to the WPHL.

Packaging of Clinical Samples:

1. Place the labeled primary container (blood collection tube, serum transport tube, etc.) into a biohazard bag with absorbent material, close and place the test request form into the outside pouch.
2. Place packaged samples into a 6.2 UN canister for transport by the courier. Multiple tubes or plates can be sent in one canister but ensure all are properly labeled.

Packaging of Bacterial Isolates:

1. If sending a culture plate, tape the plate closed, place the labeled culture plate into a biohazard bag with absorbent material, close and place the test request form into the outside pouch.
2. If using a tube media, place the tube into a bubble wrap pouch and then place this into the biohazard bag with absorbent material and place the test request form into the outside pouch.
3. Put the packaged culture into a 6.2 UN canister for transport. Multiple tubes or plates can be sent in one canister but ensure all are properly labeled.
4. Place a 'WPHL' sticker on the outside of the canister and place in the appropriate pick up location for the courier (refrigerator, counter, etc.).

Logging of daily samples:

We recommend keeping a log of the samples left for the courier each day.

Emergency deliveries:

There is an option for emergency delivery. It is expensive and would need to be requested by the WPHL. If a sample requires immediate transport on holidays or weekends (especially suspect bioterrorism agents) please call 1-888-996-9104 to reach the Wyoming Department of Health 24/7 on call personnel, explain the situation and ask them to contact WPHL staff to request emergency courier service.

Problems with the courier:

Questions or concerns with the courier service should be directed to Shawna Dereemer or Gale Stevens at 307-777-7431. To contact Action Cargo regarding changes to a pick up time or location call: 1-307-266-2229.

Town	Facility Name	Address	tentative pick up time	Note**
Afton	Star Valley Hospital	901 Adams St.	14:15	
Arapaho	PHS-Indian Health Center	14 Great Plains Rd.	15:30	
Basin	Midway Clinic Laboratory	388 S. US Hwy. 20	15:45	
Buffalo	Johnson County Memorial Hospital	497 W. Lott	16:00	
Casper	Community Health Center	1522 E. "A" St.	16:50	
Casper	Lab Corp	2115 East 12th St. Ste A	16:40	
Casper	Wyoming Medical Center	1233 E. 2nd St.	16:30	
Cheyenne	Wyoming Public Health Laboratory	208 S. College Dr. 82002	16:30	
Cody	West Park Hospital	707 Sheridan Ave.	15:00	
Douglas	Memorial Hospital of Converse County	111 S. 5th St.	15:30	
Evanston	Wyoming State Hospital	Highway 150 South	15:00	
Evanston	Evanston Regional Hospital	190 Arrowhead Dr.	15:00	
Ft. Washakie	Wind River Service Unit	29 Black Coal Dr.	15:00	
Gillette	Campbell County Memorial Hospital	501 S. Burma Ave.	15:00	
Green River	Castle Rock Medical Center	1400 Uinta Dr.	16:25	
Jackson	St. John's Hospital	625 E. Broadway	14:45	
Kemmerer	South Lincoln Medical Center	711 Onyx St.	15:00	
Lander	Lander Valley Medical Center	1320 Bishop Randall Dr.	15:30	
Laramie	Ivinson Memorial Hospital	255 N. 30th St.	15:30	
Laramie	Albany County Public Health	609 S. 2nd St.	15:35	

Lovell	North Big Horn Hospital	1115 Lane 12	15:00	
Lusk	Niobrara Health and Life	921 Balleencee	14:20	Will Call
Newcastle	Weston County Health Services	1124 Washington Blvd	13:30	
Pinedale	Pinedale Medical Clinic	619 E. Hennick St.	14:00	Will Call
Powell	Powell Hospital	777 Avenue H	14:30	
Rawlins	Memorial Hospital of Carbon County	2221 W. Elm St.	15:10	
Riverton	Columbia Riverton Memorial Hospital	2100 W. Sunset Dr.	15:30	
Rock Springs	Memorial Hospital of Sweetwater County	1200 College Dr.	15:55	
Sheridan	Sheridan County Memorial Hospital	1401 W. 5th St.	14:45	
Sheridan	Sheridan Veterans Affairs Medical Center	1898 Fort Road	15:00	
Sundance	Crook County Memorial Hospital	713 Oak St.	12:30	Will Call
Thermopolis	Hot Springs Memorial Hospital	150 E. Arapahoe	15:30	
Torrington	Community Hospital	2000 Campbell Dr.	15:25	
Wheatland	Platte County Memorial Hospital	201 14th St.	15:45	
Worland	Washakie Memorial Hospital	400 S. 15th St.	16:40	

Note: Will-call facilities will need to call the courier, Action Cargo Express, 2-3 hours prior to the listed time at 1-888-484-6555 to ensure the courier stops for samples. If the call is placed too late, the sample will likely not be picked up until the following day.

APPENDIX 3: MICROBIOLOGY SUPPLY ORDER FORM

<p align="center">WPHL Supply Order Form</p> <ol style="list-style-type: none"> 1. Keep a copy for your records 2. Name, address, and phone number required 3. Quantity specified 4. Serology limited to 50/order 5. FAX, mail, or email form (One protocol will be packed with each order) 	<p>FROM: Wyoming Public Health Laboratory Combined Laboratories Facility 208 S. College Drive Cheyenne, WY 82007 Phone: 307.777.7431 FAX: 307.777.6422</p> <p>TO: _____ _____ _____</p>
COURIER SERVICE ONLY:	
<input type="checkbox"/> WMC/Casper <input type="checkbox"/> CNCHD/Casper <input type="checkbox"/> ERH/Evanston <input type="checkbox"/> WSH/Evanston <input type="checkbox"/> Other City _____	
SOME SUPPLIES MAY BE AVAILABLE FOR DESIGNATED SITES ONLY	
<p>QTY Lab Requisition Forms (Only)</p> <p>_____ WPHL Requisition Form _____ Other (Please specify)</p> <p>QTY Miscellaneous Components (Only)</p> <p>_____ Needle Holders _____ Needles _____ Urine Collection Cups _____ Vacutainers (Red Top) _____ Throat Swabs _____ WPHL Stickers (Courier only) _____ West Nile Virus Shipper (WNV) Cold -Pak and Protocol _____ Infectious Canister (Courier Only) _____ UN6.2 Shipper (For Infectious Substances-limit 2 per request) _____ Other (Please specify)</p>	<p>QTY Collection Kits (See protocol handout for kit components)</p> <p>_____ Chlamydia/GC Unisex Swab _____ Chlamydia/GC Urine _____ Chlamydia/GC Vaginal _____ Chlamydia/GC Mailer only</p> <p>QTY Collection Kits with Mailers</p> <p>_____ Fecal Bacteria/Norovirus Kit (FB) _____ Fecal Parasite Kit (FP) _____ HIV Oral Fluid Kit _____ HIV Venipuncture Kit _____ Pertussis Kit (BP) _____ Serology Kit _____ Tuberculosis Kit _____ Varicella Zoster Kit (VZV)</p> <p>QTY Outbreak Supplies</p> <p>_____ GI Outbreak Kit</p>
<p>WPHL use only</p> <p>Date Filled ____/____/____ Initials _____</p>	<p>Contact Information for Receiving Facility</p> <p>Name _____ Phone # _____</p>

APPENDIX 4: LABORATORY REQUISITION FORM



Wyoming Public Health Laboratory

Combined Laboratories Facility
208 S. College Drive
Cheyenne, WY 82002
307.777.7431 FAX 307.777.6422



LAB USE ONLY

Submitter Information:

Name _____

Address _____

City/State/Zip _____

Telephone _____

Doctor _____

Patient Information or Patient ID Label (HIV sticker)

Last Name																			
First Name																			

Age _____ DOB _____ Female Male

Date Collected ___/___/___ Date of Onset ___/___/___

Convalescent Collection Date ___/___/___

Specimen Type

- | | | | |
|--------------------------------------|----------------------------------|-----------------------------------------|---------------------------------------|
| <input type="checkbox"/> Blood | <input type="checkbox"/> Throat | <input type="checkbox"/> Sputum | <input type="checkbox"/> Urine |
| <input type="checkbox"/> Serum | <input type="checkbox"/> Isolate | <input type="checkbox"/> Bronchial Wash | <input type="checkbox"/> Endocervical |
| <input type="checkbox"/> Oral Fluid | <input type="checkbox"/> Stool | <input type="checkbox"/> Tissue | <input type="checkbox"/> Urethral |
| <input type="checkbox"/> CSF | <input type="checkbox"/> Wound | <input type="checkbox"/> Nasopharyngeal | <input type="checkbox"/> Vaginal |
| <input type="checkbox"/> Other _____ | | <input type="checkbox"/> Food | <input type="checkbox"/> Rectal |

Test Request

Immune Status

- Mumps
- Rubella
- Rubeola
- Varicella

Hepatitis

- Hepatitis B Surface Antibody
- Hepatitis B Surface Antigen
- Hepatitis B Core IgM
- Hepatitis C
- Hepatitis A Total
- Hepatitis A IgM

STD

- HIV 1 & 2 Plus O
- VDRL (CSF only)
- RPR
- FTA-ABS

CT/GC and West Nile Virus on Back

Culture/ID

- Rapid Strep Screen
- Bacterial Culture/ID _____
- Enteric Screen (FB)
- Salmonella Serotyping
- E. coli EHEC
- Ova & Parasites
- MRSA
- DRSP
- VRE
- TB Culture with Smear
- TB Identification

PCR

- Pertussis
- Norwalk Virus

Miscellaneous

- Hanta Virus
- Other _____

CT/GC (Patient Information)

Patient's Residence Zip Code <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Race (check all that apply) <input type="checkbox"/> White <input type="checkbox"/> Black or African American <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Native Hawaiian or Other Pacific Islander	Risk History (check all that apply) <input type="checkbox"/> More than 1 partner in past 60 days <input type="checkbox"/> New partner in past 60 days <input type="checkbox"/> Positive for CT in past 12 months <input type="checkbox"/> No risk history
Ethnicity <input type="checkbox"/> Hispanic <input type="checkbox"/> Non-Hispanic <input type="checkbox"/> Unknown	Clinical Signs (check all that apply) <input type="checkbox"/> Cervical Friability <input type="checkbox"/> Mucopus <input type="checkbox"/> PID <input type="checkbox"/> Urethritis <input type="checkbox"/> None	Treatment Did you presumptively treat this patient for Chlamydia? <input type="checkbox"/> Yes <input type="checkbox"/> No
Reason for Visit <input type="checkbox"/> Symptomatic <input type="checkbox"/> Exposed to STD in past 60 days <input type="checkbox"/> IUD Insertion <input type="checkbox"/> Patient Request <input type="checkbox"/> Pregnancy Test Only Visit <input type="checkbox"/> Client Meets Screening Criteria <input type="checkbox"/> Postive CT-3 month rescreen		Specimen collected by: _____

West Nile Virus (Patient Information)

Date of onset of illness ____/____/____ Hospitalized? <input type="checkbox"/> Yes <input type="checkbox"/> No Hospital Name: _____ Date of Admission ____/____/____	Patient Symptoms (check all that apply) <input type="checkbox"/> Fever >38.0°C <input type="checkbox"/> Pregnant <input type="checkbox"/> Headache <input type="checkbox"/> Breast Feeding <input type="checkbox"/> Altered Mental Status <input type="checkbox"/> CSF pleocytosis								
Type of Specimens and Dates Collected <table border="0"> <tr> <td>Sample</td> <td>Date Collected</td> </tr> <tr> <td><input type="checkbox"/> Acute Serum</td> <td>____/____/____</td> </tr> <tr> <td><input type="checkbox"/> Convalescent Serum</td> <td>____/____/____</td> </tr> <tr> <td><input type="checkbox"/> CSF</td> <td>____/____/____</td> </tr> </table>	Sample	Date Collected	<input type="checkbox"/> Acute Serum	____/____/____	<input type="checkbox"/> Convalescent Serum	____/____/____	<input type="checkbox"/> CSF	____/____/____	Select illness most concurrent with symptoms <input type="checkbox"/> WEST NILE FEVER <input type="checkbox"/> WNV MENINGITIS <input type="checkbox"/> WNV ENCEPHALITIS <input type="checkbox"/> WNV POLIOMYELITIS
Sample	Date Collected								
<input type="checkbox"/> Acute Serum	____/____/____								
<input type="checkbox"/> Convalescent Serum	____/____/____								
<input type="checkbox"/> CSF	____/____/____								
Attending Physician Name _____	Telephone Number _____	FAX Number _____							
CSF RESULTS: Total WBC____Differential____%POLYS____%LYMPHS PROTEIN____mg% GLUCOSE____mg%									

LAB USE ONLY

CALL/REJECTION LOG

<input type="checkbox"/> ID discrepancies <input type="checkbox"/> No collection date <input type="checkbox"/> No demographics Date contacted _____	<input type="checkbox"/> No test request <input type="checkbox"/> No requisition form <input type="checkbox"/> Expired collection device Person contacted _____	Initials _____
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APPENDIX 5: INFLUENZA COLLECTION FORM

Public Health Laboratory
 208 S. College Dr.
 Cheyenne, WY 82002
 307-777-7431

REQUISITION FOR INFLUENZA CULTURE

INSTRUCTIONS

- Specimens should be collected within 3 days of symptom onset
- Specimens should be collected & shipped according to attached protocol
- Specimens must arrive at the lab within 48 hours of collection
- Maintain Specimen at 2-4 °C and ship on COLD PAK to the WPHL with the completed form.
- Use Fed Ex account 2987-4494-5 for shipping flu cultures only.

(Please print clearly with black ballpoint pen.)

Patient Name (Last)	(First)	(MI)	DOB / /	Gender
Patient Address			Age	<input type="checkbox"/> <input type="checkbox"/> Male
Phone ()				<input type="checkbox"/> <input type="checkbox"/> Female
Hispanic: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown				
Race: <input type="checkbox"/> White <input type="checkbox"/> Black <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Native American <input type="checkbox"/> Other <input type="checkbox"/> Unknown				
Submitting Laboratory Name and Address (return address)			Phone Number ()	
			Fax Number ()	
Attending Physician Name _____				
COMPLETE ENTIRE SECTION BELOW TO ENSURE CORRECT TESTING INFORMATION				
Date of onset of illness: ____/____/____		SAMPLE TYPE		DATE COLLECTED
Rapid Flu Test Results:		<input type="checkbox"/> Nasopharyngeal swab		____/____/____
<input type="checkbox"/> Negative <input type="checkbox"/> No rapid test performed		<input type="checkbox"/> Nasal swab		____/____/____
<input type="checkbox"/> A positive <input type="checkbox"/> B positive		<input type="checkbox"/> Nasal wash/aspirate		____/____/____
<input type="checkbox"/> A&B positive (Not Differentiated)		<input type="checkbox"/> Other _____		____/____/____
Was patient hospitalized? <input type="checkbox"/> Yes <input type="checkbox"/> No		<u>Patient Symptoms:</u>		
If yes: Hospital _____		<input type="checkbox"/> Fever <input type="checkbox"/> Sore throat		
Date Admitted ____/____/____		<input type="checkbox"/> Headache <input type="checkbox"/> Nasal congestion		
		<input type="checkbox"/> Dry cough <input type="checkbox"/> Shortness of breath		
		<input type="checkbox"/> Body Aches <input type="checkbox"/> Diarrhea		
Flu Vaccination <input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Vomiting <input type="checkbox"/> Other _____		

Patient Name: _____ DOB: _____

<p>If yes, date received: ____/____/____</p> <p>Nasal Vaccination <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Patient's weight _____ kg or lbs</p> <p>Patient's height _____ cm or ft/in</p>	<p><input type="checkbox"/> Travel outside USA Country: _____</p> <p>Date of Travel ____/____/____</p> <p>Does the patient have any of the following?</p> <p><input type="checkbox"/> Asthma</p>																								
<p>Did the patient receive antiviral medication?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown</p> <p>If yes, complete the table below</p> <table border="1" data-bbox="263 743 750 991"> <thead> <tr> <th>Drug</th> <th>Start Date</th> <th>Number of days</th> <th>Dosage</th> </tr> </thead> <tbody> <tr> <td>Tamiflu (Oseltamivir)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Relenza (Zanamivir)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Rimantidine</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Amantadine</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Drug	Start Date	Number of days	Dosage	Tamiflu (Oseltamivir)				Relenza (Zanamivir)				Rimantidine				Amantadine				Other				<p><input type="checkbox"/> Other chronic lung disease</p> <p><input type="checkbox"/> Cancer</p> <p><input type="checkbox"/> Neurological disease</p> <p><input type="checkbox"/> Kidney disease</p> <p><input type="checkbox"/> Chronic heart /Circulatory disease</p> <p><input type="checkbox"/> Metabolic disease (including diabetes mellitus)</p> <p><input type="checkbox"/> Other Chronic Disease _____</p>
Drug	Start Date	Number of days	Dosage																						
Tamiflu (Oseltamivir)																									
Relenza (Zanamivir)																									
Rimantidine																									
Amantadine																									
Other																									
<p>Does the patient work in a health care facility/setting?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown</p> <p>If yes: Name of facility/setting _____</p>	<p>Pregnant?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> Not Applicable</p> <p>If yes, how many weeks _____</p>																								
<p>Does the patient attend school?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown</p> <p>If yes: School _____</p>	<p>Does the patient attend daycare?</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown</p> <p>If yes: Daycare _____</p>																								

APPENDIX 6: BACTERIAL CULTURE IDENTIFICATION

Includes:

- Anaerobes
- *Neisseria gonorrhoeae*
- *Haemophilus Influenzae* serotyping
- *Neisseria meningitidis* serotyping
- *Shigella* serogrouping
- *Streptococcus* serogrouping
- Foodborne pathogens for PFGE
- *Salmonella* serotyping

Acceptable specimens: Submit a pure isolate of the organism on solid media. Growth should be apparent before submission to the laboratory.

Criteria for rejection: Clinical material for primary isolation will not be accepted.

Additional Comments: Drug-resistant *Streptococcus pneumoniae* isolates from sterile sites such as CSF and other body fluids are required to be sent to the WPHL. Testing MRSA, VRE, and ESBL isolates is strictly an epidemiological tool and prior consultation is required before isolates can be sent to WPHL for testing.

APPENDIX 7: FECAL BACTERIA/NOROVIRUS SPECIMEN COLLECTION PROTOCOL

Acceptable Specimens: Stool specimen in enteric transport medium (ETM)

Criteria for Rejection: Raw specimens (no transport medium), overfilled ETM containers, specimens received > 96 hours old and norovirus not refrigerated.

**PLEASE READ ALL DIRECTIONS FIRST AND FOLLOW THEM CAREFULLY.
WASH HANDS BEFORE BEGINNING THE PROCEDURE**

1. The stool transport vial is labeled ETM and contains a red transport media. **Do not discard or drink this liquid.**
2. **DO NOT** pass the specimen into the toilet.
3. **DO NOT** pass the specimen directly into the collection vial.
4. **DO NOT** urinate on the specimen or into the collection vial.
5. **DO NOT** allow any water to mix with the specimen.
6. Pass the stool specimen into any clean and dry container such as a bedpan, a plastic bag, a plastic plate, or newspaper.
7. Carefully open the ziploc package and remove the ETM vial. Using the spoon attached to the cap, collect small amounts of stool from areas that are slimy, watery, or bloody and place them into each vial. If the stool is hard, collect small amounts from both ends and the middle and place into each vial.

IMPORTANT: Fill each vial with enough specimen until the liquid reaches the fill line located on the label. Do not fill above the fill line.

IMPORTANT: Make certain that all vials are tightly capped to avoid leakage.

8. Wash hands thoroughly with soap and water. Write patient name and date collected on the ETM label.
9. Complete the PHL form and check enteric screen, and ship via courier, USPS or overnight delivery.
10. **IMPORTANT NOTE:** Specimens being collected for enteric bacterial pathogens may be kept at room *temperature* for up to 96 hours. **FOR NOROVIRUS:** If the specimen is being collected to screen for Norovirus, keep the specimen refrigerated and ship overnight on cold packs.

If any liquid from the vials or stool specimen come in direct contact with eyes or skin, rinse the area with plenty of water. If any discomfort of irritation develop, contact a physician.

APPENDIX 8: FECAL PARASITE PROTOCOL

Acceptable Specimens: Stool submitted transport media (PVA and Formalin)

Criteria for Rejection: Raw Specimens (no transport media)

Overfilled specimen containers

PLEASE READ ALL OF THE DIRECTIONS FIRST AND FOLLOW THEM CAREFULLY. WASH HANDS BEFORE BEGINNING THE PROCEDURE.

1. You have been asked to collect a stool sample for laboratory analysis. The collection set contains 2 tubes.

2. DO NOT DISCARD OR DRINK THE LIQUID IN THE TUBES.

DO NOT PASS THE SPECIMEN IN THE TOILET!

DO NOT PASS THE SPECIMEN DIRECTLY INTO THE COLLECTION TUBES.

DO NOT URINATE IN THE SPECIMEN OR INTO THE SPECIMEN TUBES.

DO NOT ALLOW ANY WATER TO MIX WITH THE SPECIMEN.

3. Pass the stool specimen into a clean and dry container such as a bedpan, a plastic bag, a plastic plate, or a newspaper.
4. Carefully open each tube. Using the spoon attached, collect small amounts of the stool from areas that are slimy, watery, or bloody and place them into each tube. If the stool is hard, collect small amounts from both ends of the middle and place into each tube.

IMPORTANT: PLACE STOOL INTO THE TUBE UNTIL THE VOLUME REACHES THE FILL LINE LOCATED ON THE LABEL. DO NOT OVERFILL!!

5. Fill only one tube at a time and replace the spoon/cap onto the same tube that it came from. Don't mix spoon/caps with other tubes. **MAKE SURE THAT THE CAPS ARE TIGHTLY CAPPED TO AVOID LEAKAGE. WASH HANDS AFTER SPECIMEN COLLECTION.**
6. Write the patient name and date collected on the labels of each tube. Place all of the vials back into the Ziploc bag and place all into the biohazard bag with absorbent paper. Return the containers to your physician or laboratory where you received them.
- 7. IN CASE OF EXPOSURE TO EYES OR SKIN, FLUSH WITH WATER AND CONTACT A PHYSICIAN.**
8. Before mailing to the laboratory, make sure that the laboratory requisition form is filled out completely, and **place the completed form inside the cardboard mailer and outside the aluminum mailer.**

APPENDIX 9: THROAT CULTURE PROTOCOL FOR GROUP A STREP

SUPPLIES:

1 Polyester Tipped Applicator 1 Laboratory Requisition Form*

SIGNS AND SYMPTOMS:

Obtaining swabs only from patients/students who have actual signs of streptococcal pharyngitis will eliminate unnecessary sample collection and testing. The most important indicators of strep pharyngitis are:

*Rapid onset of sore throat and fever above 101°F

*Exudate of tonsils or pharynx

*Enlarged tonsils; red pharynx

PROCEDURE:

1. Assemble your equipment; wash hands or wipe with a cleansing wipe. (It is **important** to use the polyester tipped applicator supplied by the WPHL.)
2. Place the individual in a comfortable position, either sitting or lying down and instruct them to tilt their head backward. Have them open their mouth wide; direct maximum lighting toward the back of the throat.
3. Remove swab from swab sheath carefully so swab is not contaminated. Depress the tongue with tongue depressor so that the uvula and the back of the throat are visible.
4. Vigorously swab the **tonsillar area and posterior pharynx** with the swab. Obtaining the secretions from the exudate from this region ensures proper collection. (Excess blood or mucus on the swab specimen may interfere with the test performance and may yield a false positive result. Avoid touching the tongue, cheeks, teeth, and any bleeding areas of the mouth with the swab when collecting specimens.)
5. Replace swab in the swab sheath and print name **legibly** on the swab sheath.

SUBMITTAL OF THROAT SWABS:

*All throat swabs must be accompanied by a completed Laboratory Requisition form.

*Please complete ALL the information requested in the patient information area of the form. **(Date of birth is now required)**

* Make sure that the submitter information area is completed including your phone number.

*In the test request area of the form, check the Rapid Strep Screen box.

*If you are mailing the specimen to the lab, please remember that throat swabs are considered diagnostic specimens and should be packaged according to USPS regulations.

*Please make sure that your swabs are sent immediately after you are done with your patient/student(s). This will ensure that test results are reported in a timely manner.

APPENDIX 10: CHLAMYDIA/GONORRHEA SPECIMEN COLLECTION
PROTOCOL

Acceptable Specimen: Urine, urethral swab, endocervical swab, vaginal swab.

Criteria for Rejection: Urine specimens > 30 days old, all swabs > 60 days old. Improper transport media, (must be collected in proper Gen Probe Aptima transport media).

APTIMA VAGINAL SWAB SPECIMEN

1. Use only the single swab package designated as “Vaginal Swab”.
2. Carefully insert the swab into the opening of the vagina about 2 inches and gently rotate the swab for 10-30 seconds. Make sure the swab touches the walls of the vagina.
3. Withdraw the swab without touching the skin.
4. Immediately place the swab into the transport tube.
5. Carefully break the shaft against the side of the tube.
6. Tightly screw the cap onto the tube and mail to the laboratory.

APTIMA ENDOCERVICAL SWAB SPECIMEN

1. Remove excess mucus from cervical os and surrounding mucosa using **white swab** provided.
Discard swab.
2. Insert **blue unisex collection swab** from kit into endocervical canal.
3. Rotate swab clockwise for 10-30 seconds to ensure adequate sampling.
4. Withdraw swab carefully, avoiding contact with vaginal mucosa.
5. Insert swab into transport tube and break off at score line.
6. Cap tightly, label tube, and mail to laboratory.

APTIMA URINE SPECIMEN FOR MALE OR FEMALE

1. **Patient should not have urinated for at least 1 hour prior to collection.**
2. **Do not clean** area prior to collection.
3. Direct patient to collect 20-30 mL of **initial urine stream** in urine cup. Larger volumes will dilute specimen and reduce test sensitivity.
4. The disposable kit pipette has a 2 mL mark at the base of the bulb. Squeeze the bulb and **draw up 2 mL urine** from the cup.
5. Dispense into the urine transport tube.
6. The resulting liquid level will be **between the two bold lines** in the middle of view window on the side of the tube. **Do not** over or under fill the tube.
7. Cap tightly, label tube, and mail to the laboratory.
8. **Do not** send urine in specimen cup. Dispose of urine cup and pipette. **Do not** reuse.

APTIMA URETHRAL SWAB SPECIMEN

1. **Patient should not have urinated for at least 1 hour prior to collection.**
2. Insert **blue unisex collection swab** from kit 2-4 cm into urethra.
3. Gently rotate swab clockwise 2-3 seconds to ensure adequate sampling.
4. Withdraw swab and insert into transport tube. Break off at score line.
5. Cap tightly, label tube, and mail to laboratory.

SUBMISSION CRITERIA FOR RECTAL AND PHARYNGEAL SPECIMENS

1. Please complete a thorough health history to determine these risk categories before performing any rectal or pharyngeal testing.
 - a. MSM
 - b. Heterosexuals with a history of anal intercourse or oral sex and a high index of suspicion of infection.

APTIMA RECTAL SWAB SPECIMEN

1. Use the blue unisex swab for collection.
2. Insert the swab approximately 3-5 cm into the rectum and rotate against the rectal wall several times (at least 3).
3. Swabs that are grossly contaminated with feces should be discarded and the collection repeated.
4. Insert the swab into the Aptima transport tube and fill out the lab requisition form.
5. Be sure to write “**rectal**” in the “type of specimen” area.

PHARYNGEAL SWAB SPECIMEN

1. Use the blue unisex swab for collection.
2. Insert the swab approximately 3-5 cm into the rectum and rotate against the back wall of the pharynx.
3. Insert the swab into the APTIMA transport tube and fill out the lab requisition form.
4. Be sure to write PHARYNGEAL in the “type of specimen” area.

IMPORTANT NOTES ABOUT APTIMA TESTING

1. Reliable results are dependent upon ADEQUATE SPECIMEN COLLECTION.
2. **FEMALE URINE TESTING IS NOT INTENDED TO REPLACE CERVICAL EXAMS AND ENDOCERVICAL SAMPLES.**
3. CRITERIA FOR REJECTION
 - a. Use of swab not provided in kit; no swab or two swabs in transport tube.
 - b. Leaked in transit.
 - c. Expired collection kit.
4. After collection, transport and store specimen at 2-30C.
5. DO NOT pour out the transport liquid in the tube.
6. DO NOT use kit swab for culture.
7. Specimens should be transported in compliance with federal regulations covering transport of biological specimens.

APPENDIX 11: SEROLOGY PROTOCOL

Includes: Syphilis, Rubella, Rubeola, Mumps, Varicella, Hepatitis

Acceptable specimen: Blood Serum

Criteria for rejection: bacterial contamination, gross hemolysis, lipemia, Specimens > 5 days post collection.

1. Use WPHL lab requisition when submitting serological specimens. Please assure that this form is complete and legible with all requested patient information. In order to expedite the reporting of laboratory results, include the complete name, address, and telephone number of the submitting agency.
2. Label specimen tubes with the patient's name and/or identifying number.
3. Collect a minimum of 2.0ml of serum or 3.0ml of whole blood. It is preferable to submit just serum, but if you cannot separate the serum, send the specimen within 24 hours.
4. If you cannot send the specimen on the day of collection, please refrigerate the sample after it has clotted.
5. Place the specimen in a biohazard bag with absorbent material, placing paperwork on in the outside sleeve and ship via the State Courier Service, or ship according to federal regulations via USPS, or overnight delivery
6. If you have questions, please contact the serology laboratory at 307-777-7431.

APPENDIX 12: HIV SPECIMEN COLLECTION PROTOCOL

Acceptable specimen: Blood Serum

Criteria for rejection:

1. Submit a minimum of 2 mL of serum, or 5 ml of whole blood in the blood collection tube.
2. Peel the patient number from the HIV request form and apply it directly to the blood collection tube.
3. Insert the blood collection tube in the biohazard bag with absorbent paper.
4. Place the biohazard bag containing the specimen into the aluminum container and cap.
5. Fold the laboratory requisition form and wrap around the outside of the aluminum container and insert this into the cardboard mailing container.
6. Mail the top copy of PEMS form, **after** the client has returned for results and post-test counseling (or after one month if the client has not returned for results) to the HIV program. Refer to specific instructions in the PEMS manual that you received training on.
7. If unsure how to complete or submit paperwork to the HIV program, call 777-5800.

TIPS

- Use HIV mailing containers for HIV specimens only.
- Use the proper amount of postage on the mailers. All postage due mailers will be returned to you unopened.
- Allow two weeks for the return of HIV results and the scheduling of post-test counseling.

Comments: Oral fluid testing has been discontinued as of January 1, 2011.

APPENDIX 13: INFLUENZA VIRUS COLLECTION PROTOCOL

Influenza Virus Collection Protocol

Specimen Collection:

Specimen should be collected within 3 days of onset of symptoms.

Use only Dacron swabs provided. (Do not use wood or calcium alginate swabs.)

Preferable Specimen: Nasopharyngeal Swab

Acceptable Specimen: Nasal swab, pharyngeal swab, nasal aspirate/wash

Collect swab (or aspirate) and place in viral transport medium.

Break shafts of swabs to permit closure of tube with screw cap.

Screw cap on tube securely to avoid leakage.

Label each specimen with patient's name and collection date.

Refrigerate specimen(s) until ready to ship.

Shipping:

Mail specimens only Monday-Thursday using overnight delivery or state courier.

Package each specimen individually in a biohazard bag with absorbent paper.

Complete the request form entirely and place in the biohazard bag pocket.

Multiple specimens collected the same day may be shipped in the same shipping container.

Place frozen ice packs in with the specimens to maintain at 4°C.

Close container and seal with tape.

If sending by courier, write WPHL on the side of the box.

Ensure that courier knows the specimens require refrigerated transportation.

NOTE: Store all transport media according to package instructions.

Store collected specimens at 4°C until shipment!

SPECIMENS MUST ARRIVE AT THE LABORATORY WITHIN 24-48 HOURS OF COLLECTION.

If you have any questions concerning collection or shipment, please call the Influenza Lab.

Wyoming Public Health Laboratory
Microbiology Section ~ 208 S. College Drive
Cheyenne, WY 82002 307-777-7431
Fax: 307-777-6422

APPENDIX 14: COLLECTION AND SUBMISSION OF SPECIMENS FOR
BORDETELLA PERTUSSIS

Acceptable Specimen:

Criteria for Rejection:

1. Label swab sheath with the patient name.
2. Obtain nasopharyngeal specimen by passing swab through the nose until it touches the posterior nasopharynx. This technique should initiate a cough. Allow the swab to remain for a few seconds after the cough.
3. Replace swab in sheath, fold the sheath and swab in half, place into biohazard bag, and insert specimen into the aluminum mailing container and cap.
4. Fill out the laboratory requisition slip, place inside cardboard mailer, cap and transport immediately to the Public Health Laboratory.
5. If you wish to submit a nasal aspirate, the specimen should be sent on cold packs within 24 hours of collection. Please contact the laboratory prior to submission of aspirates.
NOTE: Only supplies provided in this kit should be used for testing. Other types of swabs may inhibit PCR analysis. Positive PCR results will be phoned to submitter when completed.

Clinical Case definition: A cough illness lasting at least 2 weeks with one of the following: paroxysms of coughing, aspiratory "whoop," or post-tussive vomiting, without other apparent cause (as reported by a health professional)

Confirmed Case: A case that is culture positive and in which an acute cough illness of any duration is present; or a case that meets the clinical case definition and is confirmed by positive PCR; or a case that meets the clinical case definition and is epidemiologically linked directly to a case confirmed by either culture or PCR. (Reference: CDC Case Definitions for Reportable Diseases).

APPENDIX 15: WEST NILE VIRUS

SUBMISSION PROTOCOL FOR TESTING OF HUMAN SERA AND CEREBROSPINAL (CSF) FLUID SPECIMENS

SHIPPING CONTAINER:

Shipping containers will be provided by the WPHL upon request. Limit 4 per order. Please put specimens a biohazard bag with absorbent paper. Specimens must be maintained at 2-4° C and shipped in a cooler using two (2) cold packs, not regular ice. Multiple specimens may be sent per shipment but each specimen should be placed in its individual biohazard bag. There is no need to keep specimens frozen. The requisition form(s) should be placed on the outside of the cooler to keep paperwork dry.

SPECIMEN TYPES AND DELIVERY:

Testing for WNV is done on serum and CSF specimens. Please send at least **2.0 ml of serum** and **1.0 ml of CSF** for proper testing to proceed. For serum samples, whole blood should be collected from the patient by venipuncture into standard red top or serum separator tubes. **Do not use whole blood collection tubes containing anticoagulants.** After allowing 30 minutes for clot formation, these sample tubes should be centrifuged and the serum fraction withdrawn. Store serum in externally threaded plastic tubes.

IDEAL TIMING OF SPECIMEN COLLECTION IS CRITICAL TO INTERPRETATION
CSF should be collected between 2 and 8 days post onset of illness.

Acute serum samples should be collected at least 8 days after onset of illness.

Convalescent serum samples should be taken two (2) to three (3) weeks after the acute sample was collected.

NOTE: If the acute serum sample is taken prior to eight (8) days post-symptom onset, antibodies may not have had time to develop and a false negative result may be obtained. Convalescent samples will be needed on patients whose acute samples are drawn prior to 8 days post-symptom onset, to ascertain the true West Nile Virus status of the patient

TESTS PERFORMED:

Specimens will be tested using the CDC IgM capture ELISA. Borderline and indeterminate results may require convalescent samples. Specimen results that are repeat borderline or indeterminate may need to be confirmed by Plaque Reduction Neutralization Test. For those tests where IgM is negative, borderline, or indeterminate **and** the specimen was collected more than **60 days post onset** of symptoms, the specimen will automatically be referred to IgG testing. IgG tests will be batched-reflexed and turnaround time for test results may be increased.

APPENDIX 16: SPECIMEN COLLECTION AND TRANSPORTATION OF TB SAMPLES

Specimen collection and mailing containers are available free of charge from the Wyoming Public Health Laboratory. Properly collect the sample and label the tube with the patient name or ID number, place it inside the Biohazard bag with absorbent paper, place it in the aluminum container, and secure the lid. COMPLETELY FILL OUT THE REQUISITION FORM PROVIDED, NOTE THE TYPE OF SPECIMEN BEING SUBMITTED, AND WRAP IT AROUND THE OUTSIDE OF THE ALUMINUM CONTAINER. Place entire contents inside the cardboard container, secure the lid and refrigerate until you are ready to mail the specimen. **Those specimens received without proper identification must be verified by the submitter, or they will be rejected.**

1. **Sputum-** Collect an early morning specimen, between 5-10 mL, on three consecutive days. Indicate whether the specimen was induced or expectorated. Post-nasal drainage, saliva, and pooled specimens are not appropriate samples. **Samples < 2 mL will be rejected on sputums only.**
2. **Bronchial Washings and Bronchoalveolar Lavage Fluids-** Collect between 5-10 mL in a sterile container.
3. **Gastric Lavage Fluids-** Collect an early morning sample before the patient has eaten. If the specimen cannot be processed within 4 hours, it should be neutralized. For each 35-50 mL of gastric fluid, add 1.5 mL of 40% anhydrous disodium phosphate (NA₂HPO₄).
4. **Urine-** Collect a minimum of 40 ml by midstream clean catch or catheterization on 3 consecutive days. 24 hour pooled specimens, catheter bag samples, and volumes less than 40 ml are unacceptable. **Urine specimen must be delivered the same day or shipped refrigerated overnight.**
5. **Body Fluids-** (CSF, pleural, peritoneal, pericardial, etc.) Collect 10-15 ml (2 mL for CSF) of fluid in a sterile container. Bloody specimens may be anti-coagulated with a small amount of heparin.
6. **Wounds, Skin Lesions, Aspirate Fluid, Abscess Contents-** Clean the skin with alcohol; aspirate as much fluid as possible into a sterile container.
7. **Tissue-** Aseptically collect 1 g of tissue into a sterile container without fixative or preservative. Add enough sterile saline to prevent drying.

NOTE: BLOOD AND STOOL SPECIMENS ARE NOT ACCEPTED FOR MYCOBACTERIAL PROCESSING. CONSULT WITH THE LABORATORY REGARDING THESE SPECIMENS.