



Washington State Department of Health Public Health Laboratories



Directory of Services

August 2018



Directory of Services

August 2018

A handwritten signature in black ink, reading "Romesh Gautam".

Dr. Romesh Gautam
Public Health Laboratories Director

A handwritten signature in black ink, reading "William A. Glover".

Dr. William Glover
Director of Science and Technology
(CLIA Director)

Washington State Department of Health - Public Health Laboratories Directory of Services

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Department of Health Key Personnel Contact List

WASHINGTON STATE PUBLIC HEALTH LABORATORIES

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Main FAX (206) 367-1790

Laboratory Office Directors

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Newborn Screening

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Business Offices

Central Receiving (206) 418-5413

Mail Room (206) 418-5579

Procurement (206) 418-5412

Public Health Laboratories Safety, Quality Assurance and Training Programs

Quality Assurance Officer

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Safety Officer

Mark Turner (206) 418-5524

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Training Program Manager

Joseph Aharchi (206) 418-5401

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WA PHL Laboratory Units

Environmental Laboratory Sciences

Drinking Water Bacteriology (206) 418-5489

Chemistry (206) 418-5492

Radiation Chemistry (206) 418-5494

Chemical Incident Response Lab..... (206) 418-5520

Shellfish

Biotoxins..... (206) 418-5443

Marine Water Bacteriology..... (206) 418-5443

Food Microbiology..... (206) 418-5442

Newborn Screening (206) 418-5537

Public Health Microbiology..... (206) 418-5447

ARLN..... (206) 418-5478

Emergency Response Team..... (206) 418-5562

Enteric Pathogens..... (206) 418-5456

Mycobacteriology (TB)..... (206) 418-5473

Parasitology..... (206) 418-5469

Special Bacteriological Pathogens (Reference)..... (206) 418-5452

Virology..... (206) 418-5458

NON-LABORATORY PROGRAMS AND FUNCTIONS

Located at the Washington Public Health Laboratories

Office of Epidemiology-Communicable Disease

(CD Epidemiology)

State Communicable Disease Epidemiologist

Scott Lindquist (206) 418-5500

Scott.Lindquist@doh.wa.gov

Communicable Disease Epidemiology, Director of

Wayne Turnberg (206) 418-5559

Wayne.Turnberg@doh.wa.gov

Emergency Response and Preparedness Supervisor

Mike Boysun (206) 418-5518

Mike.Boysun@doh.wa.gov

Administrative Assistant (24-hour line) (206) 418-5500

Toll free **(877) 539-4344**

Fax (206) 364-1060

Epi Center (SL3, Leslie Byerly)..... (206) 418-5602

Washington Electronic Disease Surveillance System

Steve Lin (206) 418-5526

Steve.Lin@doh.wa.gov

OTHER FREQUENTLY CALLED NUMBERS

State HIV AIDS Hot Line..... 1-800-272-AIDS

Drinking Water Hot Line 1-800-521-0323

FDA Seafood Hot Line 1-800-FDA-4010

PSP/Domoic Acid 24-hour Information Line 1-800-562-5632

Washington State Consumer Assistance Line (206) 753-2870

TOLL FREE **1-800-525-0127**

Washington State Basic Health Plan – Insurance 1-800-773-9872

Important Department of Health Websites

DOH Website

<http://www.doh.wa.gov/Home.aspx>

DOH Public Health Laboratories Website

<http://www.doh.wa.gov/PublicHealthandHealthcareProviders/PublicHealthLaboratories.aspx>

DOH Community Food Safety Website

<http://www.doh.wa.gov/CommunityandEnvironment/Food.aspx>

DOH Drinking Water Program Website

<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater.aspx>

DOH Recreational Shellfish Website

<http://www.doh.wa.gov/CommunityandEnvironment/Shellfish/RecreationalShellfish.aspx>

DOH NOTIFIABLE CONDITIONS

<http://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/NotifiableConditions>

WASHINGTON STATE PUBLIC HEALTH LABORATORIES



GENERAL INFORMATION

Mission Statements

Department of Health Mission: *The Department of Health works to protect and improve the Health of People in Washington State.*

Public Health Laboratories Mission: *To provide a wide range of diagnostic and analytical functions for the assessment and surveillance of infectious/communicable, heritable/genetic and chronic diseases as well as environmental contamination. Improve the quality assurance and analytical performance of clinical and environmental laboratories through training and consultation as well as providing scientific and managerial leadership in developing public health policy.*

Public Health Laboratories Overview

History

The Washington State Public Health Laboratories (PHL) was established by the legislature in the early 1900's. The laboratories were first located in downtown Seattle in the Alaska Building. The Public Health Laboratories were moved to the Smith Tower Building and remained there until 1985. In 1982, work was begun on a new facility located just north of Seattle in the City of Shoreline. The PHL was relocated to its current building in 1985. The laboratories are named in honor of W.R. Giedt, who was the director of the PHL during this period of its greatest changes and growth from 1943 to 1971. Under his leadership, the PHL met significant challenges in clinical and environmental public health, and adopted new technologies as soon as they were proven reliable.

Since 2001 Dr. Romesh Gautam has been the Director of the State Public Health Laboratories. Under leadership of Dr. Gautam, the PHL has focused on the development and implementation of new

genetic/DNA based technologies to provide scientific support and public health services focused on improving public health at local, state and national levels. Dr. Gautom has been instrumental in developing a PFGE procedure that produces results within 24 hours for a variety of pathogens (e.g. *E. coli* O157:H7, *Salmonella*, *Shigella*, etc.) and became the backbone for the national PulseNet system, operated by the CDC to track national food borne disease outbreaks.

Our Clients

Primary users of the laboratories include preventive medicine programs at the state, county and federal level; hospitals; public health and medical laboratories seeking reference or consultation services; laboratories desiring certification; other agencies desiring public health laboratory services; and physicians seeking assistance in diagnosing rare or unusual diseases (botulism, rabies, diphtheria, etc.). In addition, programs and agencies concerned with environmental problems make extensive use of the laboratories.

Laboratory Services

The laboratories are engaged in activities designed to aid in the diagnosis, treatment, and prevention of communicable, chronic, congenital and genetic diseases; to assess the general health of the population; to help safeguard a healthful environment; and to assure high quality work within the health and environmental laboratory community. The laboratories provide diagnostic and follow-up services in the areas of newborn screening, food poisoning, surveillance studies of etiologic agents in the areas of bacteriology, virology, serology, parasitology, radiation chemistry, pesticide residue analysis, and many other disciplines. Training and consultation activities are also provided by the State Public Health Laboratories.

As the state's reference clinical laboratory, the PHL provides local health departments, hospitals, clinics and commercial laboratories with a wide range of services including identification and confirmation of unknown pathogenic organisms, consultation on laboratory methodology and training in current laboratory issues and techniques. As a provider of services to local, state and federal agencies, the PHL is often the focal point for coordinating investigations of infectious disease outbreaks and mediating the transfer of information between agencies. The staff at the PHL test clinical and environmental specimens/samples associated with known and potential disease outbreaks, and work with epidemiology, nursing and environmental health staff to identify possible sources for outbreaks. The PHL staff performs, on an average, 9,050,275 tests each year for sexually transmitted diseases, food borne diseases, virus isolation and viral serology, mycobacteriology, environmental microbiology, enterics, parasitology, microbial identification, biotoxins, metals, inorganic chemistry, congenital diseases in newborns.

Response to Biological, Chemical and Radiological Terrorism

The PHL is participating in a national network called the Laboratory Response Network (LRN) initiated by the Centers for Disease Control and Prevention, Atlanta. The LRN is a collaborative approach between public and private laboratories and is focused heavily on improving laboratory-based bioterrorism and chemical terrorism response capabilities in the United States. Hospital and private laboratories are most likely to be the first to receive patient specimens containing etiological agents used in a covert act of bioterrorism and laboratory professionals must be trained to identify microbial pathogens likely to be used for bioterrorism. Laboratorians must know how to safely collect, transport, and process specimens containing biological agents associated with bio-threat acts and specimens to be analyzed following chemical-threat attacks.

The PHL also participates in the Food Emergency Response Network (FERN), a joint effort of the US Food and Drug Administration Center for food Safety and Applied Nutrition (USFDA CFSAN) and US Department of Agriculture Food Safety and Inspection Service (USDA FSIS). The FERN is focused on improving laboratory-based food testing response capacity and capability in the United States. The FERN has responsibility for developing and distributing rapid food testing methods.

The PulseNet Foodborne Disease Surveillance System

The Centers for Disease Control and Prevention (CDC) in Atlanta, Ga., in a cooperative effort with state/local public health agencies, other federal agencies and specialists in the private sector, have developed a food borne surveillance monitoring system known as PulseNet. PulseNet is an early warning system that allows participating state public health laboratories to share critical food borne disease surveillance information, effectively reducing the time needed to respond to regional and national outbreaks of food borne disease. Using PulseNet, Pulsed-Field Gel Electrophoresis (PFGE) images and essential demographic information are shared between experts in the investigation of food borne disease. Bacterial strains, such as *E. coli* O157:H7 and *Salmonella* that may be causing a local food borne outbreak in one part of the country can be quickly compared with isolates from another locale helping to identify more extensive outbreaks. The PulseNet server is connected to the internet and is accessible to selected states participating in the PFGE Project, allowing test results to be transmitted quickly and easily between laboratory sites.

Outbreak Response

During 1996-1997, the Microbiology section began developing advanced molecular biology testing capabilities for bacterial and viral pathogens. The methodologies have allowed the PHL to improve the testing services offered to its customers and also to initiate new methods development. Since 1997, the PHL has been testing samples (nasopharyngeal swabs) submitted for *Bordetella pertussis* by PCR. The Public Health Microbiology staff has been directly involved in the investigation of sporadic cases and outbreaks related to *Escherichia coli* O157:H7, *Salmonella*, *Shigella*, *Campylobacter*, *Vibrio parahaemolyticus*, enterotoxigenic *E. coli*, methicillin-resistant *Staphylococcus aureus*, Vancomycin-resistant *Enterococcus*, *Norovirus*, rubella, influenza, and pertussis, to name a few.

The team approach in microbiology and epidemiology has led to timely intervention for many outbreak investigations. In 1999, a unique cluster of 35 cases of *E. coli* O157:H7 was recognized through routine PFGE surveillance testing at the PHL. Patients linked to the cluster reported swimming in Battleground Lake in southwest Washington. Microbiologists from our Environmental section identified *E. coli* O157:H7 from cultures of lake sediment. This was the first documented report isolating *E. coli* O157:H7 from lake sediment and was shown to be identical to the human isolates. The PulseNet system showed that the outbreak was not a large multi-state problem, but a localized one. In 2007, the Microbiology laboratory played an instrumental part in determining the source of an outbreak of *Salmonella* in eastern Washington. The collaborative efforts of the PHL Enterics, PFGE and Food Microbiology laboratories with the Communicable Disease Epidemiology Section, the DOH Food Safety Program and local health jurisdiction investigators resulted in a national change to the type of meat slicer used by a popular restaurant chain.

In the past five years the laboratory has seen outbreaks of *Listeria*, *E. coli* O157, and *Salmonella* in a variety of foods—artisan cheeses, raw milk, peanut butter, sprouts and pre-packaged products such as spices. State-of-the-art instrumentation and protocols, well-trained staff and collaborative efforts have assured a timely detection of these organisms in food products.

Biomonitoring

In 2009, the Washington Department of Health entered into a Cooperative Agreement with the Centers for Disease Control and Prevention in Atlanta, GA, to monitor the levels of selected chemicals in the urine of randomly chosen volunteers in the state. The resulting project, called WEBS (the Washington Environmental Biomonitoring Survey), is studying trace metals, total and speciated arsenic, and the metabolites of pyrethroid and organophosphate pesticides. The Public Health Laboratories is the Principal Investigator of the project.

PHL Organization

The Washington State Department of Health is comprised of four offices. The W.R. Giedt Public Health Laboratories belong to the Division of Epidemiology, Health Statistics and Public Health Laboratories (EHSPHL). The Public Health Laboratories (PHL) is physically located approximately 10 miles north of downtown Seattle in the City of Shoreline, Washington. The PHL are divided into four major offices, each of which report to the Laboratory Director, who in turn, reports to the Assistant Secretary for the EHSPHL Division. The offices that comprise the PHL are the Office of Environmental Laboratory Sciences, the Office of Newborn Screening, the Office of Public Health Microbiology and the Office of Laboratory Operations.

Office of Environmental Laboratory Sciences

The Office of Environmental Laboratory Sciences has approximately 30 technical staff members and is divided into two main sections: Environmental Microbiology and Environmental Chemistry and Radiation. This office is comprised of six units that include the Radiation Laboratory, Chemistry Laboratory, Water Microbiology Laboratory, Biotoxins Laboratory, Chemical Terrorism Response, and Radiological contamination of Food. These laboratory units provide a wide variety of testing of environmental samples and clinical specimens and are certified by several federal programs that include the EPA, FDA, College of American Pathologists and the Nuclear Regulatory Commission.

Office of Public Health Microbiology

The Office of Public Health Microbiology has approximately 40 technical and support staff. Reference capabilities in this office include diagnostic and surveillance services that focus on food borne diseases, sexually transmitted diseases, virus isolation, viral serology, and mycobacteriology. Individual units within the laboratory are headed by leading experts in the field who work together with the Office of Epidemiology, housed in the same facility, on a daily basis. Virology, serology and HIV laboratories perform a variety of conventional, serological and molecular tests to rapidly identify disease agents and characterize viral and bacterial pathogens. Standard tests performed by these laboratories include influenza, rabies, syphilis, EIA and western blot for HIV, and IgG and IgM EIA tests for rubeola/Rubella/Mumps/Hantavirus and IgM and Microsphere Immunoassay (MIA) for West Nile virus. This office also has a state-of-the-art molecular diagnostics unit that uses DNA based technologies including pulsed field gel electrophoresis (PFGE), polymerase chain reaction (PCR) and DNA sequencing to assist the Office of Epidemiology with outbreak investigations. The microbiology laboratory has participated in a number of studies to validate CDC-developed methods which are now being used across the country. The laboratory routinely hosts post-doctoral fellows under the Emerging Infectious Disease fellowship established by the Association of Public Health Laboratories and the CDC. During their two-year fellowship in the laboratory, these scientists help to develop rapid methods such as those for Salmonella serotyping and the detection of Mycobacterium tuberculosis from patient samples by molecular methods. The Food Microbiology section is instrumental in determining food and environmental sources of contamination during foodborne outbreaks and the Parasitology lab provides diagnostic and confirmatory testing for blood parasites, ova and parasites in stool and the identification of gross specimens such as ticks and worms.

Office of Newborn Screening

The Newborn Screening program tests every infant born in Washington to detect and prevent the developmental impairments and life-threatening illness associated with congenital disorders that are specified by the State Board of Health. The Program provides appropriate follow-up and referral of those infants who screen positive to assure prompt diagnostic and treatment services. In addition, NBS provides long-term tracking of affected children to assure continued access to appropriate comprehensive health care. NBS performs tests on more than 170,000 specimens resulting in more than 11 million laboratory test results every year. The Office of Newborn Screening (NBS) has approximately 30 laboratory, quality assurance, disorder follow-up, and support staff.

Office of Laboratory Operations and Technical Support

The Office of Laboratory Operations and Technical Support provides internal technical and operational support to the State Public Health Laboratories (PHL). Included within the office are the following departments: Training Program/Technology Transfer, Media and Glassware Preparation, Mail Services, and Facilities Maintenance. The Office is managed by the Assistant Director of the PHL.

The Office offers consultation to both local public and private health facilities. Specific areas of expertise include laboratory training, maintenance of laboratory equipment, facilities management, specimen handling, preparation of culture media, and shipping regulations.

Further, the Office provides many of the kits and containers used to deliver specimens to the PHL. The Office is responsible for their contents, quality control and shipping of the kits. During disease outbreaks, laboratory support from this unit is coordinated with the efforts of local health officers, physicians, and state epidemiologists to assist in outbreaks.

PHL Mailroom The PHL mailroom receives all mail, samples and specimens that are sent to the PHL. This unit also is responsible for preparation and supply of kits for many of the tests performed at the PHL.

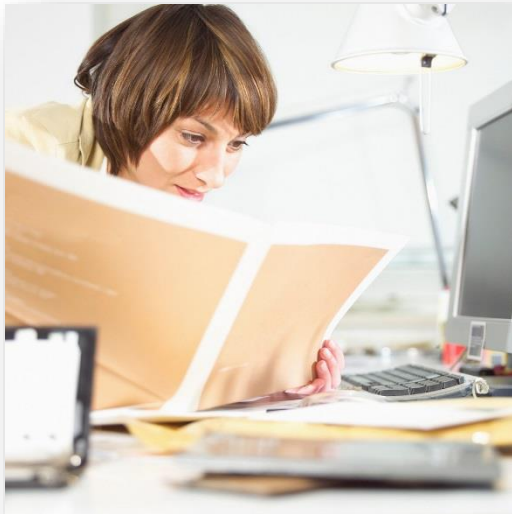
PHL Maintenance The Maintenance Department is responsible for the overall upkeep of the PHL building and grounds. This also includes providing for the maintenance of PHL vehicles, oversight on preventative maintenance of laboratory equipment, meeting room setup, building security and the provision of janitorial services.

Glassware and Media Preparation This department makes the majority of the media used by the PHL's laboratories. They are responsible for laboratory glassware preparation, waste disposal and many other support functions that are necessary for the laboratories to engage in and continue with their testing.

PHL Training Program The PHL training staff develops and presents training courses for internal and external laboratory personnel. As a member of the National Laboratory Training Network (NLTN) operated by the Centers for Disease Control and Prevention (CDC) and the Association of Public Health Laboratories (APHL), the PHL Training program brings national training programs to Washington State and provides laboratory trainers for NLTN classes in other states.

USING THE DIRECTORY OF SERVICES

The Directory of Services has been prepared to aid the user in properly utilizing the laboratories' services. The *Directory of Services* is reviewed biannually by the laboratory director and made available to our clients on the PHL website. Information is presented on



what is available, how to use it and whom to contact. The directory contains the telephone numbers of persons responsible for the various disciplines within the PHL. In the interest of providing timely service, users are encouraged to call the laboratory unit to address specific questions. For meaningful results in all areas, an appropriate sample, properly collected and transported along with adequate identifying information, is necessary. Turn-around times are measured in working days. Fees, if applicable, are noted in the directory (all fees are subject to change).

Important Note! The Washington State Public Health Laboratories are currently transitioning to a web based directory of services. All information regarding Microbiological analysis (with the exception of Water Bacteriology), can be found at the following location:
www.doh.wa.gov/PHLMicroLabTests

HOW TO CONTACT THE PUBLIC HEALTH LABORATORIES



24-Hour Emergency Telephone Service
(206) 418-5500

Dialing this phone number will connect the caller to the emergency contact phone operated by the Communicable Disease Epidemiology staff. The person who answers the phone will contact the appropriate laboratory staff.

PHL hours of operation are 8 a.m. to 5 p.m., Monday through Friday. The laboratories are closed on weekends and state holidays which include New Year's Day, Martin Luther King Jr. Day, Presidents Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving and the day after Thanksgiving, and Christmas Day.

Driving Directions to Laboratory

Address: 1610 N.E. 150th Street
Shoreline, WA 98155

Parking: Free parking

I-5 Northbound

Take NE 145th St. exit (Exit #175). After exiting, move to the far right lane. Turn right at the traffic light onto NE 145th St. (eastbound). Proceed in the left lane on 145th St. to the next traffic light at 15th Ave. NE. Turn left onto 15th Ave. NE, travel four blocks on 15th Ave. NE (northbound) to NE 150th St. Turn right onto NE 150th. You will see the state laboratories on the left at the intersection of 17th Ave. NE and NE 150th St.

I-5 Southbound

Take NE 145th St. exit (Exit #175). After exiting, stay in the left lane of the off ramp. Turn left at the traffic light onto NE 145th St. (eastbound). Proceed in the left lane on 145th St. to the next traffic light at 15th Ave. NE. Turn left onto 15th Ave. NE and travel four blocks until you reach NE 150th St. Turn right onto NE 150th St. You will see the state laboratories on the left at the intersection of 17th Ave. NE and NE 150th St.



Note: All laboratory samples, specimens and supplies must be taken to the PHL Specimen Receiving Entrance near the center of the building on the 17th Ave. NE side. No deliveries will be accepted in the reception area at the main entrance.

Sampling and Specimen Collection Kits Provided by PHL**Specimen Kit Requisition Policy**

In some cases, PHL supplies authorized submitters with specimen collection kits. Kits are specific to the type of specimen collected and the type of test being requested.

To order, write to: Washington State Public Health Laboratories
1610 N.E. 150th Street
Shoreline, WA 98155

With the first order, you will receive an order sheet for subsequent use. Lab Supply Order Forms (LSOF) has been changing frequently as tests are added or removed. Please go to our website for the most current version. New forms will be sent to each submitter following an update to the LSOF. As the shelf life of supplies and kits is limited, plan to order no more than a month's supply. If you have any questions, please contact the Mail Services:

Telephone (206) 418-5579

Fax (206) 364-0339

Email phl.mailroom@doh.wa.gov

International Air Transport Association (IATA) and United States Postal regulations require the use of a triple mailing system for submission of cultures and certain other material. When requesting mailing containers, please specify the type of culture (enteric, TB, etc.) so you will receive the appropriate kit and laboratory form. Most of the specimen kits approved specimen shipper. Always wrap the laboratory form around the inner cardboard mailer to avoid contamination if the specimen leaks.

When submitting a bacterial or viral isolate by any means of transportation, the package must be packed in agreement with IATA and USDOT and US Postal Service regulations for Infectious Substances. The State Public Health Laboratories do not supply the packaging, but materials are commercially available from many sources. See Appendix A for the Federal Regulations which apply to shipping hazardous materials.

PH provides only Category B Specimen shippers. Submitters who ship bacterial or viral isolates or other organisms must provide their own Category A shipper.

Please fill out the laboratory form completely. Telephone numbers have been given for areas of the laboratories. Whenever questions arise regarding specimens or any of the services provided by the State Laboratories, a phone call is welcomed and will often save time and effort. Please print clearly when filling out all paperwork.

Kits are expensive and many have expiration dates. Return all unused and outdated specimen kits and mailing containers to the PHL for recycling. For more information regarding mailing containers, biohazard bags or media, call Mail Services at (206) 418-5579 or fax at (206) 364-0339 or email at phl.mailroom@doh.wa.gov.

Mailing Kits Available

Microbiology

Complete information for the collection kits is available at:
www.doh.wa.gov/PHLMicroLabTests

Enteric Pathogens

KITS	CONTENTS	REMARKS
Stool or Rectal	Cary-Blair transport medium, sterile swab, microbiology form and instructions. Shipper approved specimen shipper.	Use for isolation of enteric pathogens from stools: Salmonella, Shigella, E. coli, Yersinia, Vibrio and Campylobacter. Use sterile applicator swab to collect specimen, insert swab into Cary-Blair transport medium, break off stick at the score line below lid of specimen container, push cap on tightly, seal lid with pressure-sensitive labeling tape and mail immediately.
Enteric Pathogen Cultures for Identification	Enteric Bacteriology for shipper approved specimen shipper.	For pure cultures only, use screw-cap tubes. Do not send in liquid media unless absolutely necessary or specifically indicated. Campylobacter jejuni cultures should be sent in Cary-Blair transport medium.

Special Bacteriological Pathogens (Reference)

Individual items	CONTENTS	REMARKS
Bacteriology Culture	Microbiology form, an approved Category B specimen shipper.	Viable pure culture. Do not mail Petri plate; use a courier service. A valid attempt to identify the organism is required. Send laboratory results obtained.
Diphtheria Clinical Specimens, Contact or Case	Amies transport media	Take throat and nasopharyngeal cultures. Notify the Special Respiratory Pathogens unit.
Pertussis	2 swabs for Nasopharyngeal specimens, screw cap tube for PCR sample, charcoal transport media for culture, 2 microbiology form (one for each specimen), immunization history form, directions, approved specimen shipper.	Diagnosis of pertussis requires both culture and PCR swab to be taken. Reference cultures and PCR requests accepted with Local Health Jurisdiction approval.

Special Bacteriological Pathogens (Reference)

Individual items	CONTENTS	REMARKS
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- Forms are available online for Submitters. The PHL mailroom does not prepare kits and will only provide a shipper, if requested.

Mycobacteriology (TB) – For more information call: (206) 418-5473

Complete information for the collection kits is available @ www.doh.wa.gov/PHLMicroLabTests

Virology

KITS	CONTENTS	REMARKS
Virus Isolation	Viral transport medium, swab, and Virus Examinations form, and approved specimen shipper	Call (206) 418-5458 prior to sending samples. Ship in special mailing containers with ice packs. No wet ice. Kits provided per consultation with Virology Lab.
Rabies	Rabies Laboratory Report and Animal History form, specimen collection instructions, special bio-transport shipping container and bag, absorbent material, ice packs, outer box labeled as "UN3373, Category B, Biological Substance" with name and phone number of contact person.	Submit animal heads. Ship with ice packs. Send through your local health jurisdiction. Notify Virology Unit before shipping. Pre-approval from Communicable Disease Epidemiology is required.
RT PCR	Laboratory form, VTM and swabs, return box. Available for: influenza, mumps, measles. See Micro test menu.	Accepted from sentinel Labs, all local health jurisdictions, and others pre-approved by Department of Health Communicable Disease Epidemiology.

Specimen Collection Requirements**Clinical Specimen Collection**

The collection of clinical specimens must follow established laboratory policies and procedures. These policies and procedures must be documented as required by Chapter 246-338 WAC, Medical Test Site Rules, State of Washington Department of Health, Office of Laboratory Quality Assurance. Refer to the table below for general specimen submission instructions. Turn to the submission guidelines of each laboratory unit, e.g. Serology, to which you will be sending the specimen, for specific detailed information.

Specimens to be tested at the Centers for Disease Control and Prevention (CDC)

1. All specimens being shipped to CDC in Atlanta, Ga., must be routed through the PHL.
2. Turn-around times for results on these specimens will vary. Contact the individual PHL unit for specific information.
3. A CDC DASH form must be enclosed with each specimen forwarded to the CDC. Please contact the PHL to request CDC DASH forms.

Environmental Samples

The collection of environmental samples must follow established laboratory/field policies and procedures. These policies and procedures must be documented. Refer to the material below for general sample submission instructions. Turn to the submission guidelines of each laboratory unit (i.e. Inorganic Chemistry) to which you will be sending the sample for specific detailed information.

Call us at (206) 418-5400 if you have questions about samples, interpretations, procedures, or any other aspect of Public Health Laboratories services. For public health emergencies after hours, call Communicable Disease Epidemiology at (206) 418-5500 or 1-877-539-4344.

Submission Procedures

1. Complete the appropriate laboratory form specific to each PHL laboratory unit. The form must include patient ID, submitter name, mailing address and submitter phone number, and date of collection.
 - a. Use *black, non-smearing ink* and please print clearly.
 - b. All specimen ID information must correspond with the laboratory form.
 - c. Specimens must be labeled with at least two unique patient identifiers. Specimen forms must have two identifiers that match the labeled specimen.
2. Include your name, return address, phone number, and date with all specimens, letters memos and requests for laboratory supplies.
3. All specimens submitted to the PHL must have the return address of the submitter and the name of the person requesting the examination.
4. The PHL receives shipments from Greyhound, UPS, Federal Express, and the United States Postal Service Monday through Saturday. Call the PHL at (206) 418-5579 before sending samples/specimens.
5. If there is a laboratory fee required for testing, make check or money order payable to the Department of Health and send to the Department of Health, Revenue Section, and PO BOX 1099, OLYMPIA, WA 98507-1099. *Please **never** send your payment with the specimen.*
6. Before sending specimens, make sure there is sufficient postage. The Postal Service will not deliver packages that do not have the required postage.

Note: Greyhound Express shipments are routinely picked up by MedEx couriers at about 7:00 am each weekday. To accommodate other bus arrival times (such as emergency and other special arrangements), courier service will be provided for delivery to the PHL by prior arrangement.

During regular business hours, please call the lab units involved to make special arrangements before sending the specimens (See pages 5 – 7).

Hand Delivery

Courier deliveries are received from 7:30 a.m. to 5:00 p.m., Monday through Friday. The Public Health Laboratories are **closed on weekends and holidays**. Special arrangements must be made with laboratory personnel prior to delivery for any high priority items arriving outside the hours of normal operation.

All laboratory samples, specimens, and supplies must be taken to the PHL specimen receiving entrance, near the loading dock at the center of the building. No deliveries are accepted in the reception area at the

main entrance. The loading dock is located past the main entrance in the middle of the building, indicated with signage. The glass door to the right of the loading dock has a doorbell for specimen delivery. Ring bell to summon mailroom staff to accept delivery. All delivery persons must have picture identification and will be required to sign the delivery log as shown below.

Specimen Sign-In Sheet							
Date	Time	Company/Courier	# of Pkgs	Sender	Specimen Type	Pick-up time	Employee Name

For questions, or to arrange delivery outside of normal receiving hours, call the appropriate laboratory within PHL.

Important: When submitting specimens in person or by courier, DO NOT leave the packages or specimens outside the building. Unattended items left on the loading dock or outside the receiving door are discarded.

Shipping

Important:

Appropriate regulations for the shipment of infectious materials must be followed when sending specimens to the PHL. In conjunction with appropriate training, the following resources may be used for shipping and mailing regulations:

- International Air Transport Association (IATA) – Dangerous Goods Regulations 53rd Ed. (1/1/2012 – 12/31/2012); <http://www.iata.org>;
- U.S. Postal Service – Domestic Mail Manual Section C023; - Title 39 Code of Federal Regulations Part III
- U.S. Department of Transportation – Title 49 Code of Federal Regulations Parts 171-185; <http://www.phmsa.dot.gov/hazmat>
- Appendix A of this directory contains more information on shipping requirements including shipping reference tables.

Shipping of infectious substances should be performed or supervised by a person who has received training in the shipping of such materials. *It is the shipper's responsibility to ensure that packages being shipped meet current regulations.* The Code of Federal Regulations can be accessed at <http://www.gpoaccess.gov/cfr/index.html>. A copy of PHL shipping regulations may be obtained by contacting the PHL mailroom at (206) 418-5579.

Ice packs must be used when submitting specimens in cooler boxes. In this directory, *ice packs* refer to any one or a combination of: gel packs, frozen coolant packs, blue-ice packs, combination water and gel packs, or leak-proof plastic containers. It is important to ensure these products will not leak during shipment. DO NOT use wet ice to transport specimens to the PHL. *Leaking packages will be rejected.*

Instruction for Packing and Shipping Specimens

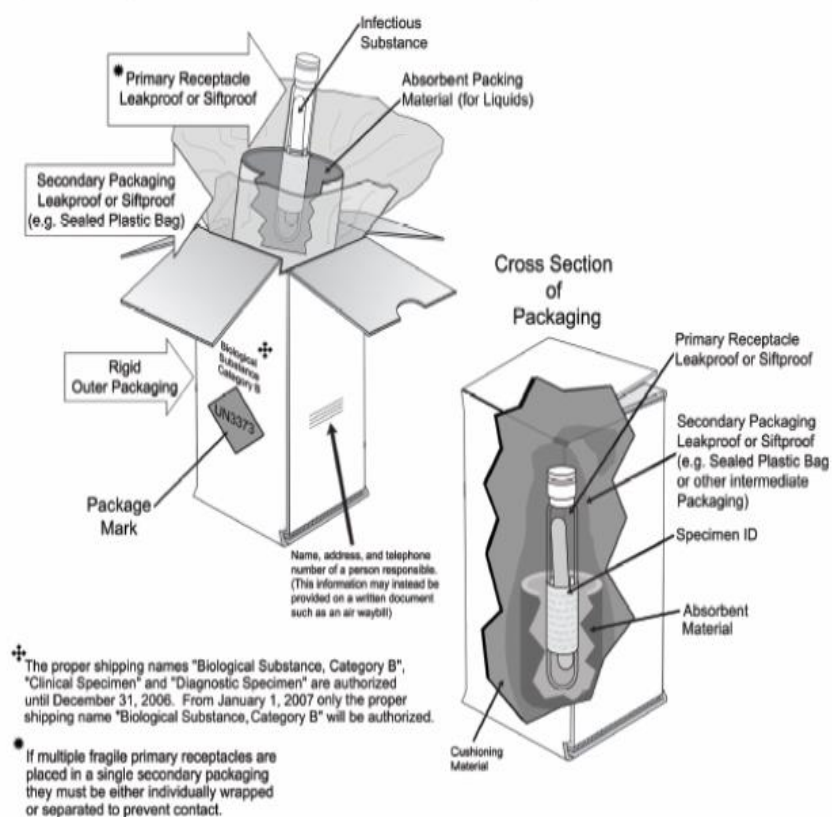
- All primary specimen containers must be labeled with 2 identifiers at the time of collection. Submitted slides may be labeled with a single identifier, but two identifiers are preferred. Examples of acceptable identifiers include but are not limited to: patient name, date of birth, hospital number, social security number, requisition number, accession number, and unique random number. The type

and date of specimen collection must be included also. The 'primary' specimen container is the innermost container received by the laboratory that actually holds the specimen.

- **DO NOT** use ballpoint pens, wax, indelible pencils, or other writing instruments that tend to smear.
- Enclose a completed laboratory request form with each properly labeled (primary) specimen container using a leak-proof plastic sleeve (i.e. Ziploc® bags or equivalent)
- Enclose the specimen in a screw-cap tube or vial with a tight fitting cap. For specimens shipped at ambient or higher temperatures, positive means of ensuring a leak-proof seal must be used, such as a skirted stopper, or metal crimp seal. If screw caps are used seal the cap with waterproof adhesive tape wound in the direction that tightens the cap.
- Package specimens properly for transit (Figure 1, page 23) ensuring that personnel who handle the package will not come into contact with the enclosed specimen.
- Place the tube or vial (primary container) in a leak-proof secondary container. Pack a suitable amount of absorbent material around the tube to absorb shock and possible leakage of entire contents. If several tubes are to be packed within the same can, wrap each tube individually in absorbent material. **DO NOT** place the request form within the secondary container; wrap it around the outside of the secondary container in a Ziploc® bag.
- Place the secondary container into an outer shipping container. Seal the outer shipping container according to directions; affix a properly completed address label, include the name and phone number of the responsible contact person with a return address and postage, if required. Affix appropriate shipping labels according to the classification of the hazardous material.
- If specimens must be sent refrigerated or frozen, they should be packaged in a certified insulated container. The insulated container should be placed within a properly labeled certified container and sealed according to manufacturer's instructions. The specimens should be packaged in a manner that prevents movement within the insulated container.
- Try to time shipments (when possible) to arrive early in the week. Be particularly careful to avoid having the specimen arrive on a weekend or a holiday when possible. Call the PHL 24-hour number if shipments will be received outside of normal business hours. The 24-hour numbers are (206) 418-5500 and (877) 539-4344.
- Clinical specimens or cultures in Petri dishes may be submitted only if they (primary container) are properly sealed and can be maintained in an upright position.
- Improperly packaged specimens and specimens that have leaked may not be accepted.
- A specimen arriving with an incomplete or no request form may be held until the information is received. The proper request form for each specimen submitted must be completed as fully as possible. When possible, include patient name or confidential ID, date of specimen collection, type of specimen, birth date or age, sex, date of onset, diagnosis, symptoms, attending physician, county of residence, suspected agent, reference culture information including type of medium and source of isolate, and other pertinent medical information including contact with insects animals, etc., antibiotic or anti-tuberculosis therapies, recent vaccinations, similar infections in the family or community, and recent travel including destination and dates.
- Copies of the reports are mailed only to the source indicated on the request form. Be sure to include the full 9-digit zip code for each address.

Figure 1: Category B Packaging**Example of Packing and Marking for Category B Infectious Substances**

(See Packing Instruction 650 for additional requirements; e.g. pressure differential and drop test)



Confidentiality Notice

The Public Health Laboratories (PHL) places a very strong emphasis on protection of confidential data. The PHL also places a similar emphasis on providing timely results. In an attempt to ensure that these goals are met, the PHL requests that providers sign and return a Fax Confidentiality Statement stating that the receiving fax machine at the provider's facility is in a secure location and that only authorized personnel have access to faxed information. A sample of the Confidentiality Notice that will accompany each fax is provided as Appendix D.

This office provides consultation and training to other laboratories, hospitals, health care providers and local health/environmental jurisdictions to enhance technical skills, productivity, efficiency, and to assure quality service. It carries out a wide range of microbiology surveillance activities including isolation, definitive microbial identification, molecular diagnostics, drug sensitivity and/or confirmation of etiological agents of public health and epidemiological concerns.

August 2018

Office of Public Health



Microbiology

Important Note! The Washington State Public Health Laboratories are currently transitioning to a web based directory of services. All information regarding Microbiological analysis (with the exception of Water Bacteriology), can be found at the following location:

www.doh.wa.gov/PHLMicroLabTests

The Office of Environmental Laboratory Sciences provides testing services including microbiological, chemical, and radiological analyses to determine any potentially harmful health effects from environmental conditions or contamination. Samples can range from clinical specimens and drinking water to a wide variety of environmental sample types, including marine water, soil, vegetation, food, and shellfish.

The Office performs the majority of the analyses in support of the Department of Health programs. The Department of Ecology, the Department of Agriculture, local health jurisdictions, law enforcement, and private citizens make use of these laboratory services as well. The Water Bacteriology Laboratory serves as the reference laboratory for bacteriological testing of drinking water in the state of Washington.

August 2018

OFFICE OF



ENVIRONMENTAL LABORATORY SCIENCES

Environmental Laboratory Sciences

Inorganic Chemistry

At this time no routine services for inorganic chemical analysis are offered.

Marine Biotoxins



The Marine Biotoxins Laboratory tests shellfish for Paralytic Shellfish Poisoning (PSP or saxitoxins), and Amnesic Shellfish Poisoning (ASP or Domoic acid), in support of the Office of Shellfish and Water Protection Program of the Washington State Department of Health. The main office of this program in Tumwater, WA, (360) 236-3330, arranges collection of samples for PSP or Domoic Acid analysis. Questions regarding sample collection, submission form, and shipment should be directed to this office as well.

Turnaround Times

PSP Within 24 hours of sample collection

Domoic Acid Within 48 hours of sample collection

Shellfish Related Illness

Questions concerning illness associated with eating shellfish should be directed either to the local health jurisdiction or to the Office of Shellfish and Water Protection Programs, (360) 236-3330, or to Communicable Disease Epidemiology, (206) 418-5500.

Radiation

The Radiation Chemistry Laboratory is capable of performing qualitative and quantitative radiochemical analyses for most radionuclides in environmental samples down to low environmental detection limits. The laboratory routinely tests soils, sediments, shellfish, fish, meat, sludge, mill tailings, milk, water, particulate air filters, vegetation, and food products. The laboratory also routinely tests wipe samples for removable contamination on surfaces.

Testing to trace downwind or downstream release levels is a time-consuming task. Typical turnaround times for selected routine analyses are listed below.

Turnaround Times

Wipes..... Per customer request.

1-week standard, with 24 hr. emergency services available

Gross Alpha/Beta in Air..... 3 weeks

Gross Alpha/Beta in Water 4 weeks

Turnaround Times

Gamma in Milk, Water, Food, or Air..... 2 weeks

Gamma in Soil 3 weeks

Strontium in Water 6 weeks

Strontium in Air, Food, Milk, or Soil 8 weeks

Radon 2 weeks

Radium in Water 6 weeks

Uranium in Water..... 6 weeks

Uranium in Soil 8 weeks

Thorium in Air, Water, Soil, Food	8 weeks
Plutonium in Water.....	6 weeks
Plutonium in Soil, Food	8 weeks
Americium in Air, Water, Soil, Food	8 weeks

The state Radiation Laboratory normally operates at full capacity, so turn-around times more rapid than those above require coordination with the programs which the laboratory supports. For one set of samples to have a priority, another set of samples will likely experience an increase in turnaround time.

Collection and Submission Instructions

The Radiation Chemistry Group primarily provides analytical services to regulatory and monitoring units of state agencies, primarily the Office of Radiation Protection of the Environmental Health Division of the Department of Health (ORP). Most requests for services can be arranged in conjunction with those groups. ORP can provide containers, sampling kits or sample collection advice for many types of samples. For laboratory service inquiries please call (206) 418-5486. Sample submitters will need to furnish all the information requested on the laboratory forms that are provided by the ORP office.

Water Bacteriology

The Water Bacteriology Laboratory performs EPA and FDA approved methods to support the Program monitoring environmental marine waters related to shellfish harvesting throughout the Puget Sound and along the Washington coast.

Marine Water Bacteriology

Marine water tests requests related to the monitoring of shellfish growing areas must be coordinated through the Office of Shellfish and Water Protection at (360) 236-3330. Recirculating water system tests related to the exportation of shellfish goods is also available for a fee of \$21 per test. Prior arrangements must be coordinated through the Office of Shellfish and Water Protection at (360) 236-3330.

The following is a list of Marine Water Bacteriology testing available:

- Fecal Coliform (MTF) for Growing Area Survey and Classification
- Total Coliform and Fecal Coliforms (MTF) for Recirculating Water Systems (Wet Storage)
- E-coli Confirmations for marine or recirculating water samples.

Submission of Marine Water or Recirculating Water Samples

1. All samples must be coordinated through the Office of Shellfish and Water Protection prior to submission: (360) 236-3330.
2. Use only those water bottles furnished by the Water Bacteriology Laboratory or the Shellfish and Water Protection Program.
3. Survey form(s) must be filled out completely and submitted with samples.
4. All Marine Water or Recirculating Water samples must be shipped cold, but not frozen.
5. A temperature control bottle labeled "TC" must be included in each box of samples to verify that holding temperatures remain between 0-10°C during shipment. Samples with temperature control bottles greater than 10°C are unsuitable and will not be tested.
6. Samples must be less than 30 hours of collection when received in the laboratory. Samples that are over 30 hours from collection are unsuitable and will not be tested.

Turnaround Times

Results 1 – 7 business days

WATER BACTERIOLOGY Collection and Submission Instructions					
Tests	Samples	Collection	Transport Container	Storage Temperature	Remarks
Marine Water and/or Recirculating Water Systems (RWS) for Total Coliforms, Fecal Coliforms.	120 ml of Marine Water to wet storage tank.	Location of interest.	Submit sample bottles in Styrofoam container with ice or ice packs. Survey forms should be packaged in a watertight bag along with samples.	Sample must be cold but not frozen. Maintain 0-10 °C.	Prevent samples from becoming submerged in melted ice. Submit a Temperature Control blank marked "TC" with each package. E.coli forms provided upon request. Note: Do not store. Ship immediately. Marine Water and Recirculating Water Systems (RWS) must be less than 30 hours old when received.

Chemical Incident Response**Laboratory Response Network – Chemical Incident Response Laboratory**

The unit provides testing services of human blood and urine specimens for heavy metals, cyanide, toxic chemicals, and volatile organic chemicals (VOCs) in support of the Washington State Emergency Preparedness and Response program.

Services are provided ONLY to local, state and federal health jurisdictions and law enforcement. In an emergency, please contact your local health department and emergency responders.

State-of-the-art instrumentation and methods are used to identify and quantify exposure levels. The testing methodology varies according to the origin of the specimen and the type of chemical agent suspected or known to be involved.

Specimen collection information is available by contacting (360) 236-3387 during business hours or (360) 888-0838 in an emergency. The Laboratory requires notification of incoming packages.

CHEMICAL INCIDENT RESPONSE				
CHEMICAL AGENTS SURVEILLANCE				
Collection and Submission Instructions				
Agent	Specimen	Required Notification of Shipment	Transport Temperature	Remarks
Suspected Chemical Agent Exposure	Blood	Call your Local Health Jurisdiction; DOH Chem. Incident Response Coordinator, 360-236-3387; or the Lab: 206-418-5520	Refrigerate at 4°C	Prior approval by CT Response Unit required: (360) 236-3387 or (206) 418-5520. Ship promptly. Notify CT Response Unit at when and how specimens are being shipped.
Suspected Chemical Agent Exposure	Urine	Call your Local Health Jurisdiction; DOH Chem. Incident Response Coordinator, 360-236-3387; or the Lab: 206-418-5520	Flash freeze at 70°C or on dry ice and keep frozen at -20°C or colder	Prior approval by CT Response Unit required (360) 236-3387 or (206) 418-5520. Ship promptly. Notify CT Response Unit at when and how specimens are being shipped.

Turnaround Times

Turnaround times vary by sample/specimen type and analysis performed. For known analytes standard turn-around time is 7 days.

Food Emergency Response

This laboratory tests for chemical contaminants in food, such as melamine or pesticides. This unit is activated at the request of local, state and federal health jurisdictions and law enforcement.

The laboratory uses FDA and USDA procedures on advanced instruments to separate and identify chemical contaminants.

Turnaround time is 5 days, with 48-hour response available in emergencies.

Biomonitoring

In 2009 the Washington Department of Health entered into a Cooperative Agreement with the Centers for Disease Control and Prevention in Atlanta, GA, to monitor the levels of selected chemicals in the urine of randomly chosen volunteers in the state. The resulting project, called WEBS (the Washington Environmental Biomonitoring Survey), is studying trace metals, total and speciated arsenic, and the metabolites of pyrethroid and organophosphate pesticides. The services connected with the WEBS project are offered only to randomly chosen volunteers.

Individual results are returned to each participant. The study results will be published in a public form by CDC and the Department at the conclusion of the 5-year study.

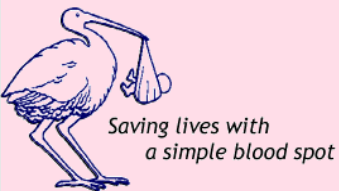
BIOMONITORING	
Study Category	Chemicals
Trace Metals	Antimony, Barium, Beryllium, Cadmium, Cesium, Cobalt, Lead, Molybdenum, Platinum, Thallium, Tungsten, Uranium
Speciated Arsenic	Total Arsenic, Arsenic III, Arsenic V, Methyl arsenic acid, Dimethyl arsenic acid, Arsenobetaine, Arsenocholine
Metabolites of Pyrethroid pesticides	Cis- and Trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid, 3-phenoxybenzoic acid, 4-fluoro-3-phenoxybenzoic acid, Cis/trans-dimethylvinylcyclopropane carboxylic diacid, Cis/trans-dimethylvinylcyclopropane carboxylic diacid
Metabolites of Organophosphate pesticides	Dimethylphosphate, Dimethylthiophosphate, Dimethyldithiophosphate, Diethylphosphate, Diethylthiophosphate, Diethyldithiophosphate, 3,5,6-trichloro-2-pyridinol
Metabolites of Phthalates	Monoethyl phthalate (MEP), Monobutylphthalate (MBP), Monoethylhexyl phthalate (MEHP), Monobenzyl phthalate (MBZP), Monoisononyl phthalate (MINP), Mono (2-ethyl-5-carboxypentyl) phthalate (MECPP)
Bis Phenol A	Bis Phenol A

OFFICE



OF NEWBORN SCREENING

<http://www.doh.wa.gov/nbs>



Newborn Screening

The Washington State Board of Health (<http://sboh.wa.gov/>) determines which disorders will be included in the screening panel. The Office of Newborn Screening performs screening tests for selected disorders that the Board has determined meet the following criteria:

- Prevention potential and medical rationale
- Availability of treatment
- Public health rationale
- Availability of suitable testing technology
- Cost effectiveness

A complete list of disorders on the current screening panel, along with detailed information about the program, can be found on the Newborn Screening website: <http://www.doh.wa.gov/nbs>.

The screening is performed on blood from a heel stick that has been absorbed onto specialized filter paper. The filter paper is then air dried and submitted to the program for testing as soon as it is dry.

State law specifies that newborns have their blood specimens collected within 48 hours of birth. Specimens are to be submitted to the Office of Newborn Screening and received at the laboratory no later than 72 hours after collection. Parents may refuse testing on the basis of religious practices or tenets by signing a statement on the back of the NBS collection form. A fee is charged to parents through the hospital of birth or healthcare provider present at birth. A second newborn screen is highly recommended at 7 to 14 days of age. There is no additional fee for follow-up screening tests.

Newborn Screening website: <http://www.doh.wa.gov/nbs>

Screening Kits

Health care providers may obtain screening kits from:

Office of Newborn Screening
State Public Health Laboratories
1610 NE 150th Street
Shoreline, WA, 98155
Phone: (206) 418-5410 or toll free at 1-866-660-9050
Fax: (206) 363-1610
E-mail: nbs.prog@doh.wa.gov

Online order form: <http://www.doh.wa.gov/Portals/1/Documents/5220/NBS-Supply.pdf>

Send specimens to:

Newborn Screening
Washington State Department of Health
PO Box 55729
Shoreline, Washington 98155-0729

All information regarding disorders detected, specimen submission kits, healthcare provider information, resources for parents may be found on the Newborn Screening website.

Office of Laboratory Operations and Technical Support provides internal technical and operational support to the State Public Health Laboratories. Included within the office are, Technology Transfer, Media and Glassware Preparation, Mail Services, Fiscal Management, Instrument Maintenance and Facilities Maintenance.

Consultation from these areas is offered to local public and private health facilities. Areas of expertise include laboratory training, maintenance of laboratory equipment, facilities management, specimen handling, preparation of culture media, and shipping regulations.

This office provides all the kits and containers used to deliver specimens to the State Laboratories, and they are responsible for the kit contents, the quality control and the shipping. During outbreaks of disease, laboratory support from this unit is coordinated with the efforts of local health officers, physicians, and state epidemiologists.

August 2018

OFFICE OF



LABORATORY OPERATIONS AND TECHNICAL SUPPORT

Operations and Technical Support**Support Services**

Mail room
Media Preparation
Glassware Preparation
Specimen Kit
Preparation
Shipping and Receiving

Technology Transfer

Laboratory Training
Meetings and Conferences

Maintenance

Building and Grounds
Security
Motor Pool

PHL Support Services**PHL Glassware**

The PHL Dish Room and Glassware unit are responsible for ensuring all laboratory waste is properly decontaminated and disposed, and that all reusable plastic ware and glassware are properly cleaned and dried for laboratory use.

PHL Media Preparation

This unit makes almost all of the media used by the PHL testing laboratories, and is responsible for laboratory glassware preparation, laboratory waste disposal and many other support functions that allow the testing units to continue with their work.

PHL Mailroom

The PHL Mailroom provides mail services for the Offices within the PHL. Mail services include receiving and distributing inbound packages and mail to their appropriate destination within the PHL and outbound services for all PHL packages and mail that are to be sent to our customers.

The unit also provides specimen collection kits and specimen shipping supplies to PHL customers who submit specimen for Microbiology analyses at the PHL. Consultation is available to help our customers learn about shipping regulations and proper packaging of specimens to ensure our customers are meeting the shipping regulations when utilizing PHL specimen shipping supplies.

Additional information may be found in the ***Collection and Submission Instructions section*** for more details on how to properly submit specimens to the PHL.

PHL Specimen Receiving

The PHL Specimen Receiving is the PHL's central accessioning unit where all specimens and samples pass through for inspection and number assignment prior to analysis by the various offices within the PHL. All Category A, Category B, and Exempt specimens received from customers are subject to inspect and may be rejected if improperly packaged, damaged, or improperly labeled upon receipt. (All specimens undergo a two-step verification process to ensure data entry efforts are accurate and correct.

PHL Quality Assurance Program

The section coordinates the laboratory's compliance with all accreditation, proficiency and qualification regulations mandated by federal and state agencies, OSHA, EPA, HCFE, FDE, USDA, the DOE and the Washington State Medical Test Site rules. Additional QA functions performed by the QA Officer include:

- Coordinate the various subscribed or inter-laboratory proficiency testing programs.
- Maintain the quality assurance plan and consults with the laboratory's client groups.
- Research and resolves client complaints.
- Prepare for on-site inspections by internal or external groups that certify or accredit the Public Health Laboratory.
- Coordinate external College of American Pathologists, (CAP), and inspection of other laboratories per CAP licensing requirements.
- Facilitate the performance of pipette, thermometer, and weights calibration checks.
- Recommend employee training as required for the facility.

PHL Safety Program

The Safety & Quality Assurance Officer confers with and advises the laboratory director, managers, supervisors and employees on occupational safety and health issues. Plans, organizes and directs the laboratory's Safety and Health program to comply with OSHA, WISHA, IMR, the fire marshal and other applicable federal, state and local codes. Conducts accident investigations, inspections, and recommends proper corrective or preventive actions. Additional safety functions performed by the Safety & QA Officer:

- Collaborate with the DOH risk management group, maintains, and updates the laboratory Chemical Hygiene Plan as required by WAC 296-62-400 and the other laboratory safety manuals and plans.
- Coordinates the development of the PHL Disaster Response Plan, Emergency Response Plan and Evacuation Plan/Procedures in alignment with the departmental plans.
- Investigate employee industrial and vehicular accidents.
- Coordinate claims and reports with the DOH Risk Manager.
- Conduct local facility/laboratory industrial safety inspections.
- Manage the Occupational Medicine Program for the PHL. (Schedule immunizations, blood draws, etc.)
- Conduct interviews with employees, supervisors and managers to identify/correct unsafe practices and conditions.
- Alternative official that is responsible for the Select Agent Program.
- Perform risk assessments to ensure that the appropriate control measures are implemented.
- Manage the Respirator Protection program. Perform respirator fit testing and training.
- Responsible for the management of the chemical inventory.
- Perform safety orientations for new employees with the employee's supervisor.

- Perform ergonomic assessments and work with the DOH Office of Risk Management to ensure that the PHL complies with WISHA regulations.
- Recommend safety related training.
- Review facility designs and make safety related recommendations.
- Review, with the *Safety and Emergency Response Committee*, the animal handling procedure for the facility.

Public Health Laboratories Training Program

The PHL program has been conducting extensive laboratory training since it moved to the current facility in 1985. The facility includes a 1,035 square foot training laboratory complex, a classroom that will seat 24 people and a conference room for 90 people as well as staff members to provide training.

Training and Technical Assistance Provided

Conferences, symposia, workshops, seminars and bench training are scheduled throughout the state.

For information on the Public Health Laboratories training and technical assistance call (206) 418-5401. Audio-visual materials are available upon request.

TRAINING PROGRAM SERVICES				
TRAINING	WHO CAN PARTICIPATE	SERVICES	WHEN	PHONE #
Workshops Seminars Conferences	Announcements will describe target audiences	Given at the PHL or in local facilities. Designed to meet current needs. May be lectures or lectures and wet workshops.	By announcement	(206) 418-5401
Bench Training	Working laboratory scientists with approval from lab director	New technology management training. Practical experience.	Call to arrange	(206) 418-5401
State Laboratories Tours, Public Relations and Support of Professional Organizations	Laboratory professionals, students, anyone with a special interest, health and laboratory groups	Opportunity to see a public health laboratory and understand how it serves the citizens of Washington.	On request Call to reserve	(206) 418-5401
Student Rotations / Internships / Postdoctoral Rotations	College students who have completed degree required in microbiology, chemistry or health-related coursework.	Opportunity to become familiar with public health careers in their chosen field. Practical experience.	Arrangements must be made through student's advisor.	(206) 418-5401

PHL Directory of Services



APPENDICES

APPENDIX A

Shipping Information for PHL Clients

ICAO Guidance Document

Packaging and Labeling Checklists

- Method of Transport
- Infectious Substance Category A: Transport via Surface (taxi, private car, courier)
- Infectious Substance Category A: Transport via Air
- Biological Substance Category B: Transport via Surface
- Biological Substance Category B: Transport via Air
- Biological Substance Category B: Transport via USPS

APPENDIX A: This is a Draft Document from ICAO and will be replaced when the final version is available. No final document available as of September 1, 2014.

Please see the ICAO website for further information

<http://www.icao.int/publications/pages/publication.aspx?docnum=9284>



GUIDANCE DOCUMENT

Infectious Substances

International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air

Introduction

The purpose of this document is to provide guidance for complying with the provisions applicable to the transport by air of infectious substances contained in the Technical Instructions. Specifically the document provides guidance on:

- Definitions
- Classification
- Exceptions
- Packaging for Exempt Patient Specimens
- Packaging Provisions for Infectious Substances, affecting humans or animals, UN 2814 or UN 2900
- Packaging Provisions for Biological Substances, Category B, UN 3373
- Prohibitions

- Passenger Provisions
- Training and Emergency Response

Definitions

Infectious substances are substances which are known to contain, or are reasonably expected to contain, pathogens. Pathogens are defined as micro-organisms (including bacteria, viruses, rickettsiae, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

Cultures are the result of a process by which pathogens are intentionally propagated. This definition does not include human or animal patient specimens.

Medical or clinical wastes are wastes derived from the medical treatment of animals or humans or from bio-research

Patient specimens are those collected directly from humans or animals, including, but not limited to, excreta, secretions, blood and its components, tissue and tissue fluid swabs, and body parts being transported for purposes such as research, diagnosis, investigational activities, disease treatment and prevention.

Classification

For transport purposes the classification of infectious substances by risk groups was removed from ICAO and US Department of Transportation 2006 edition.

Infectious substances are now classified as Category A or Category B.

There is no direct relationship between Risk Groups and Category A and B when being transported.

Category A Infectious Substances, Surface (Taxi, private car, courier)

Category A Infectious Substances are infectious substances in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals when exposure occurs. They are assigned the following proper shipping name and UN number:

- **Infectious Substance affecting humans**, UN 2814 or
- **Infectious Substance affecting animals only**, UN 2900.

Assignments to UN 2814 or UN 2900 are to be based on the known medical history and symptoms of the source human or animal, endemic local conditions, or professional judgement concerning individual circumstances of the source human or animal. If there is any doubt as to whether or not a pathogen falls within this category it must be transported as a Category A Infectious Substance.

Clinical wastes must be assigned to UN 3291.

To assist in the assignment of an infectious substance into Category A, see the Indicative List provided. This list is not exhaustive. Infectious substances, including new or emerging pathogens which do not appear in the list but which meet the same criteria, must be assigned to Category A.

Category B Infectious Substances are Infectious Substances are not in a form capable of causing permanent disabilities, life-threatening or fatal disease in otherwise healthy humans or animals when exposure occurs.

Biological Substance, Category B: Ground UPS, Air

Clinical wastes containing Category B infectious substances must be assigned to UN 3291.

Further assistance on the classification of infectious substances can be obtained from the national health or veterinary authority. (See Annex 1 for Classification Scenarios and Annex 2 for a Classification Flowchart.)

Exceptions

- Substances, which do not contain infectious substances, or substances, which are unlikely to cause disease in humans or animals, are not subject to the ICAO Technical Instructions unless they meet the criteria for inclusion in another class.
- Substances containing microorganisms which are non-pathogenic to humans or animals are not subject to the ICAO Technical Instructions unless they meet the criteria for inclusion in another class.
- Substances in a form that any present pathogens have been neutralized or inactivated such that they no longer pose a health risk are not subject.
- Environmental samples (including food and water samples) which are not considered to pose a significant risk of infection are not subject to Division G-2 Regulations and need no special markings.
- Dried blood spots, collected by applying a drop of blood onto absorbent material, or fecal occult blood screening tests and blood or blood components which have been collected for the purposes of transfusion or for the preparation of blood products to be used for transfusion or transplantation and any tissues or organs intended for use in transplantation are not subject to regulations.
- Patient specimens for which there is minimal likelihood that pathogens are present are not subject to ICAO or USDOT transportation regulations. Specimens must be marked as Exempt Human or Exempt Animal specimens.

Note.—In determining whether a patient specimen has a minimum likelihood that pathogens are present, an element of professional judgement is required to determine if a substance is exempt under this paragraph. That judgement should be based on the known medical history, symptoms and individual circumstances of the source, human or animal, and endemic local conditions. Examples of specimens which may be transported under this paragraph include blood or urine tests to monitor cholesterol levels, blood glucose levels, hormone levels, or prostate specific antibodies (PSA); tests required to monitor organ function such as heart, liver or kidney function for humans or animals with non-infectious diseases, or therapeutic drug monitoring; tests conducted for insurance or employment purposes and are intended to determine the presence of drugs or alcohol; pregnancy tests; biopsies to detect cancer; and antibody detection in humans or animals in the absence of any concern for infection (e.g. evaluation of vaccine induced immunity, diagnosis of autoimmune disease, etc.).

Packaging for Exempt Patient Specimens

Patient specimens (human or animal) that have a minimal likelihood of containing pathogens must be triple packaged to further minimize the risk of exposure. While these specimens have a minimal likelihood of containing infectious pathogens in a form that would cause infection, appropriate packaging further minimizes the risk of exposure. Exempt human or animal specimens to be packaged and marked according to the following:

- (i) A leak-proof primary receptacle(s);
- (ii) A leak-proof secondary packaging; and
- (iii) An outer packaging of adequate strength for its capacity, mass and intended use, and with at least one surface having minimum dimensions of 100 mm × 100 mm.

For liquids, absorbent material in sufficient quantity to absorb the entire contents must be placed between the primary receptacle(s) and the secondary packaging so that, during transport, any release or leak of a liquid substance will not reach the outer packaging and will not compromise the integrity of the cushioning material;

When multiple fragile primary receptacles are placed in a single secondary packaging, they must be either individually wrapped or separated to prevent contact between them.

If such a packaging is used it must be marked "Exempt human specimen" or "Exempt animal specimen", as appropriate.

(See Annex 3 for a graphic depiction of an Exempt Patient Specimen Packaging)

If other dangerous goods are present with patient specimens the relevant provisions of the ICAO and USDOT regulations apply to those goods.

When dangerous goods intended for air transport are carried by surface transport to or from an airport, any other applicable national or modal transport requirements should be met in addition to those that are applicable for the goods when carried by air.

Packaging Provisions for Infectious Substances, humans or animals, UN 2814 or UN 2900

Packing Instruction 620 of the USDOT or Dangerous Goods regulations (DGR) specifies the type of packaging required for all Category A Infectious Substances. (See Annex 4 for a graphic depiction of a Category A package).

Packaging Provisions for Biological Substances, Category B, UN 3373

Packing Instruction 650 of the USDOT or DGR provides all the information necessary to prepare and transport Category B Infectious Substances. (See Annex 5 for a graphic depiction of a Category B package).

Prohibitions

A live animal that has been intentionally infected and is known or suspected to contain an infectious substance must not be transported by air unless the infectious substance contained cannot be consigned by any other means. Infected live animals may only be transported under terms and conditions of an approval granted by the appropriate national authority.

Passenger Provisions

Category A or B Infectious Substances are not permitted for transport in carry-on or checked baggage and must not be carried on a person. Packages containing exempt human or animal specimens may be carried in carry-on or checked baggage provided they meet the applicable packaging requirements.

Training and Emergency Response

Effective employee training and appropriate emergency response procedures are required to significantly minimize the risk of exposure and subsequent transmission of infection or disease.

Mitigation procedure

DO NOT CLEAN-UP OR DISPOSE OF INFECTIOUS SUBSTANCES, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

- Isolate spill or leak area immediately.
- Keep unauthorized personnel away.
- Obtain identity of substance involved if possible and report the spill to the appropriate authorities.
- Do not touch or walk through spilled material.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Be particularly careful to avoid contact with broken glass or sharp objects that may cause cuts or abrasions that could significantly increase the risk of exposure.
- Damaged packages containing solid CO₂ (dry ice) used as a refrigerant may produce water or frost from condensation of air. Do not touch this liquid as it could be contaminated by the contents of the parcel.
- Liquid nitrogen may be present and can cause severe burns.
- Absorb spilled materials with earth, sand or other non-combustible material while avoiding direct contact.
- Cover damaged package or spilled material with damp towel or rag and keep wet with liquid bleach or other disinfectant. Liquid bleach will generally effectively inactivate the released substance.

First Aid:

- Move exposed person(s) to a safe isolated area.

CAUTION: Exposed person(s) may be a source of contamination. Persons administering first aid should take precautions to avoid personal exposure or secondary contamination of others.

- Call emergency medical services.
- If clothing and/or shoes are significantly contaminated, remove and isolate them. However, do not allow this to delay other first aid interventions.

- In case of contact of the substance to skin, eyes, nose or mouth, immediately flush the exposed area with copious amounts of running water. Continue this until emergency medical services arrives. Follow their advice for further decontamination.
- Most effects of exposure (inhalation, ingestion or skin contact) to substance are likely to be delayed.
- Ensure that medical personnel are aware of the substances involved so they can take precautions to protect themselves.

For further assistance, contact the appropriate public health authority

ANNEX 1 - Classification Scenarios

1. A blood sample known or reasonably suspected to contain Hantaan virus.

Appropriate classification: Infectious Substances, affecting humans UN 2814.

2. A culture of FOOT AND MOUTH DISEASE.

Appropriate classification: Infectious Substances, affecting animals, UN 2900.

3. A blood sample taken from a patient known or suspected to have a Category B pathogen, such as HEPATITIS B or HIV.

Appropriate classification: Biological Substances, Category B*, UN 3373.

4. Culture of BOVINE TUBERCULOSIS.

Appropriate classification: Biological Substances, Category B*, UN 3373.

5. Laboratory stock culture of a pathogen in Category B, e.g. INFLUENZA VIRUS.

Appropriate classification: Biological Substances, Category B*, UN 3373.

6. Specimen containing a Category A or B infectious substance, treated so as to inactivate or neutralise the pathogens such that they no longer pose a health risk.

Appropriate classification: Not subject to the transport requirements for dangerous goods, unless meeting the criteria for another class or division.

7. Patient specimens other than those known or reasonably suspected to contain a Category A infectious substance e.g. those sent for testing for Cholesterol (blood), diabetes (urine), bowel cancer (faecal).

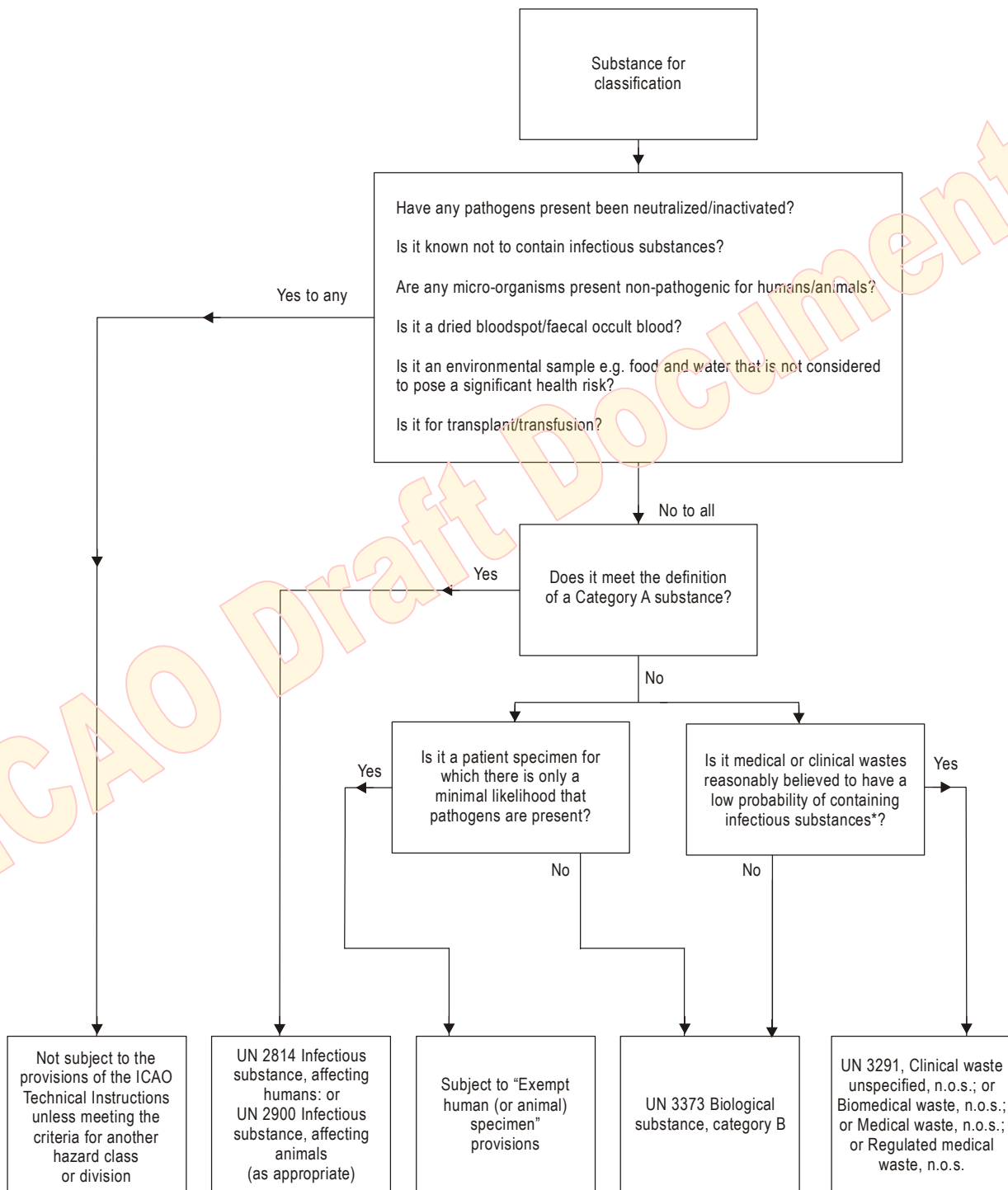
Appropriate classification: this will depend on professional judgement ie:

(i) If a professional judgement is made that there is only a minimal likelihood that pathogens are present, the specimen is not subject to the provisions of the ICAO Technical Instructions, providing they are packed in accordance with the provisions detailed under "Packaging for Exempt Patient Specimens" in this Guidance Document;

(ii) If no professional judgement is made, the specimen must be classified as UN3373.

ANNEX 2 – Classification Flowchart

Replace with the following



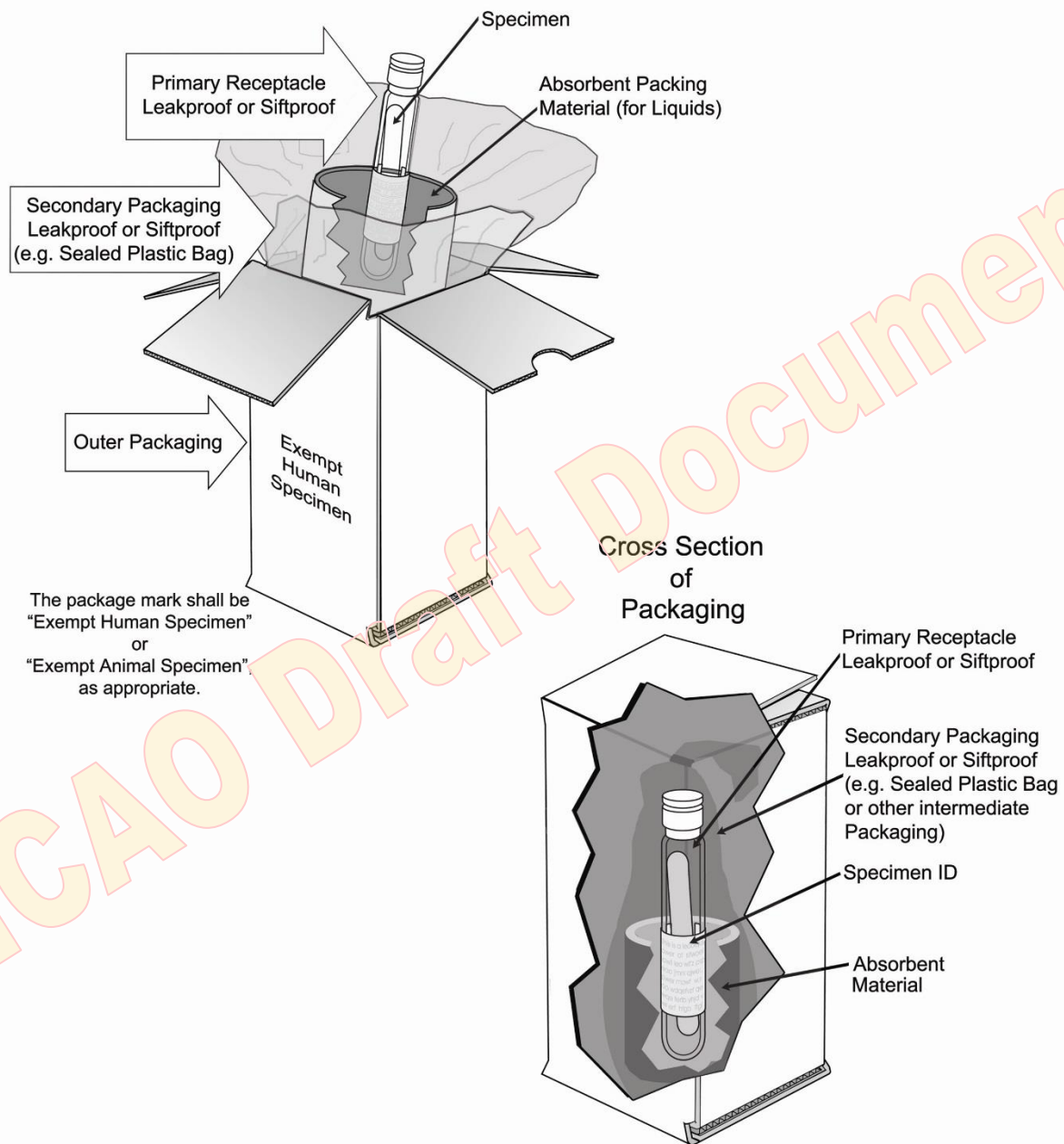
*Decontaminated medical or clinical wastes that previously contained infectious substances are not subject to the Instructions unless they meet the criteria for inclusion in another class.

Replace 602 with 620

ICAO Draft Document

ANNEX 3

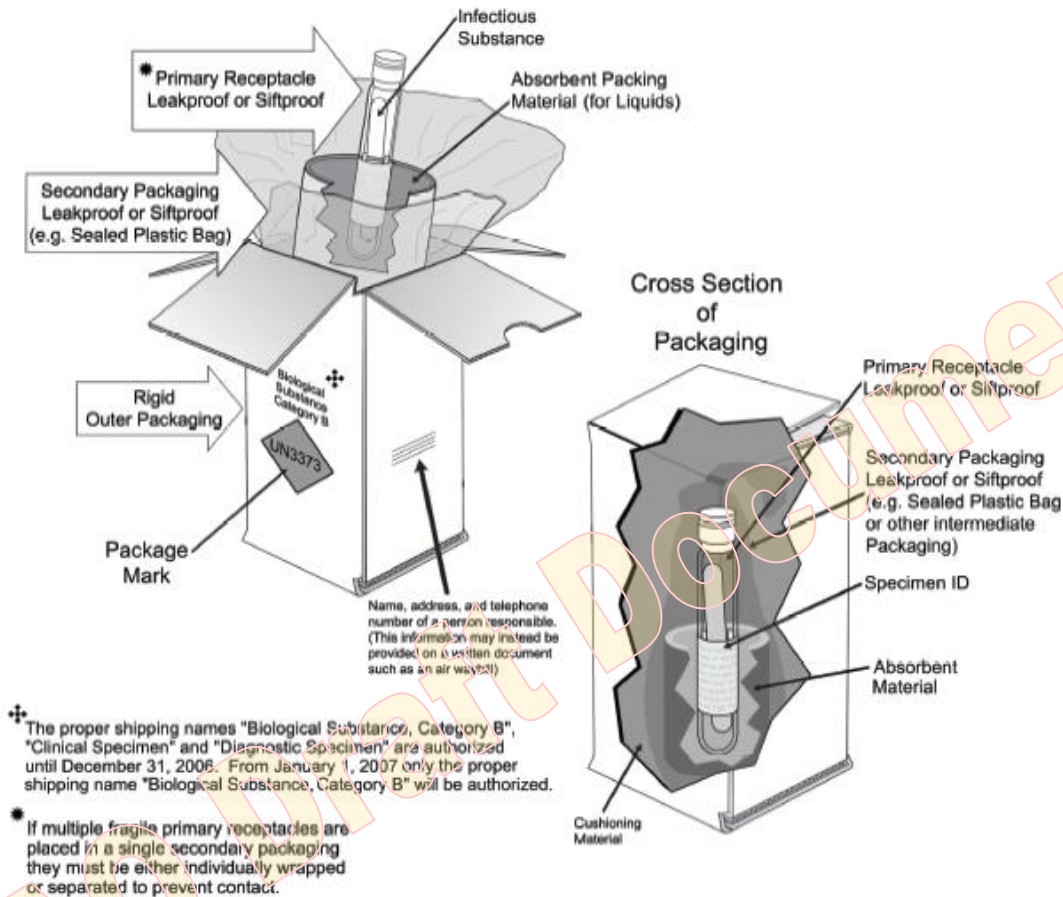
Example of Packing and Marking for Exempt Human Specimens or Exempt Animal Specimens



ANNEX 5

Example of Packing and Marking for Category B Infectious Substances

(See Packing Instruction 650 for additional requirements; e.g. pressure differential and drop test)



Note: 1-At least one surface of the outer packaging must have a minimum dimension of 100 mm X 100 mm

Note: 2-The primary receptacle or the secondary packaging must be capable of withstanding without leakage an internal pressure producing a pressure differential of not less than 95 KPa

— END —

Indicative List of Infectious Substances In Any Form Unless Otherwise Indicated (List may not be complete).

UN Number and Proper Shipping Name

Category A, Infectious substances affecting humans

Microorganism	
<i>Bacillus anthracis</i> (cultures only)	Japanese Encephalitis virus (cultures only)
<i>Brucella abortus</i> (cultures only)	Junin virus
<i>Brucella melitensis</i> (cultures only)	Kyasanur Forest disease virus
<i>Brucella suis</i> (cultures only)	Lassa virus
<i>Burkholderia mallei</i> - <i>Pseudomonas mallei</i> – Glanders (cultures only)	Machupo virus
<i>Burkholderia pseudomallei</i> – <i>Pseudomonas pseudomallei</i> (cultures only)	Marburg virus
<i>Chlamydia psittaci</i> - avian strains (cultures only)	Monkeypox virus
<i>Clostridium botulinum</i> (cultures only)	<i>Mycobacterium tuberculosis</i> (cultures only)
<i>Coccidioides immitis</i> (cultures only)	Nipah virus
<i>Coxiella burnetii</i> (cultures only)	Omsk hemorrhagic fever virus
Crimean-Congo hemorrhagic fever virus	Poliovirus (cultures only)
Dengue virus (cultures only)	Rabies virus
Eastern equine encephalitis virus (cultures only)	<i>Rickettsia prowazekii</i> (cultures only)
<i>Escherichia coli</i> , verotoxigenic (cultures only)	<i>Rickettsia rickettsii</i> (cultures only)
Ebola virus	Rift Valley fever virus
Flexal virus	Russian spring-summer encephalitis virus (cultures only)
<i>Francisella tularensis</i> (cultures only)	Sabia virus
Guanarito virus	<i>Shigella dysenteriae</i> type 1 (cultures only)
Hantaan virus	Tick-borne encephalitis virus (cultures only) Variola virus
Hantaviruses causing hantavirus pulmonary syndrome	Venezuelan equine encephalitis virus
Hendra virus	Vesicular stomatitis virus (cultures only)
Hepatitis B virus (cultures only)	West Nile virus (cultures only)
Herpes B virus (cultures only)	Yellow fever virus (cultures only)
Human immunodeficiency virus (cultures only)	<i>Yersinia pestis</i> (cultures only)
Highly pathogenic avian influenza virus (cultures only)	

2900	
Infectious substances affecting animals	
African horse sickness virus	<i>Mycoplasma mycoides</i> - Contagious bovine pleuropneumonia
African swine fever virus	Peste des petits ruminants virus
Avian paramyxovirus Type 1 - Newcastle disease virus	Rinderpest virus
Bluetongue virus	Sheep pox virus
Classical swine fever virus	Goat pox virus
Foot and mouth disease virus	Swine vesicular disease virus
Lumpy skin disease virus	Vesicular stomatitis virus

Infectious Substance

Category A, Ground and Air Transport (includes taxi and private cars) 2016

Packaging Checklist {Documented Training is required prior to packaging and shipping infectious Agents: 49 CFR 172.700 (h), IATA Section 1.5} No Category A Specimens by USPS & UPS	
49 CFR 173.196	Triple packaging; primary and secondary are leak-proof for liquids and sift-proof for solids (<i>utilize commercially available shipping systems</i>).
49 CFR 173.196 IATA 620	In ambient or higher temperature, primary receptacles have been heat-sealed, have a skirted stopper or a metal crimp seal. Screw caps must be reinforced with adhesive tape (Prudent step at ALL temperatures).
Table 49 CFR 172.101 49 CFR 172.102(c)(1)	Quantities: (<i>unless meet Special provisions A81</i>) a) Max. 50 mL or 50 gm for passenger aircraft b) Max. 500 mL or 500 gm primary and 4 L or 4 kg for total package for Cargo aircraft
	Paperwork is separated from the specimen by a plastic sleeve or bag.
49 CFR 173.196	Absorbent material, capable of containing entire contents of primary containers is placed between primary and secondary receptacles.
49 CFR 173.196	Multiple primaries placed in secondary packaging must be wrapped individually to prevent contact with each other.
49 CFR 173.196 IATA 620	The primary receptacle or secondary packaging used for infectious substances must be capable of withstanding an internal pressure producing a pressure differential of not less than 95 kPa and temperatures from -40°C to +55°C, without leakage (<i>utilize commercially available shipping systems</i>).
49 CFR 178.503	Certified outer shipping package meets UN class 6.2 specifications and packaging instructions (PI) 620 and bears the UN Packaging Specification Marking. Packaging systems must be 4G Class 6.2 and include the last two digits of the year of manufacture (<i>utilize commercially available shipping systems</i>).
49 CFR 173.196 IATA 620	Outer packaging at least 100 mm in overall external dimensions and is rigid.
49 CFR 173.196 IATA 620	An itemized list of contents is enclosed between secondary packaging and outer packaging.
49 CFR 173.199	Interior supports in place to secure secondary package after ice has dissipated or melted (<i>utilize commercially available shipping systems</i>).
49 CFR 173.196	Chemical Ice, dry ice, or wet ice (<i>if applicable</i>) has been placed outside the secondary package (Wet ice should only be used for same day delivery)
49 CFR 173.	<u>If using wet or dry ice.</u> For wet ice, the package must be leak-proof (sealed in plastic bag). For dry ice, packaging must permit release of carbon dioxide (<i>utilize commercially available shipping systems</i>).
49 CFR 172.312	Orientation (Up) arrows on opposite sides of shipping container.

IATA 626 Section 7	
49 CFR 172.400, 49 CFR 172.101, IATA 7.1	A UN shipping name label (<i>unless meets Special provision A140</i>): “Infectious substance, affecting humans, UN 2814” and the volume/weight of the sample.
49 CFR 172.432	Diamond shaped Class 6 Infectious Substance label with the following “In case of damage or leakage, immediately notify public health authority.
IATA	For volumes over 50 mL (and special provisions A81 are not applicable) “Cargo only” label (orange danger label) is placed adjacent to Class 6 label.
49 CFR 172.446	Dry Ice: Diamond shaped Class 9 label placed on outer packaging. Enter weight in Kg.
IATA 620	Shipper’s name, address and telephone number on box. Consignee’s name and address on box.
DOT/IATA	Overpacks (<i>not to be confused with outer packaging</i>), if used, must have all the labeling of inner packagings and be marked, “Overpack”.

Shipper’s Declaration of Dangerous Goods (Download and type, do not hand write)	
49 CFR 172.301 (d)	Shipper’s name and address
49 CFR 172.301 (d)	Consignee’s name and address
	Number of pages using (e.g. Page 1 of 1)
	Cross out “Radioactive” under shipment type
	Cross out “Passenger aircraft” or “Cargo Aircraft” depending on quantities
49 CFR 172.202 Table 172.101	Proper Shipping Name (<i>unless meets Special provision A140</i>): “Infectious Substance, Affecting Humans (<i>weight of specimen</i>) “Dry Ice” (<i>if applicable</i>)
49 CFR 172.202 Table 49 CFR 172.101	Class or Division: “6.2” for organisms “9” for Dry ice (<i>if applicable</i>)

Packaging Checklist {Documented Training is required prior to packaging and shipping infectious Agents:49 CFR 172.700 (h), IATA Section 1.5} No Category A Specimens by USPS & UPS	
Marking and Labeling Requirements	
49 CFR 172.301	UN or ID number: "UN2814" for organisms "UN1845" for Dry ice <i>(if applicable)</i>
49 CFR 172.202 (a)(4)	Packing Group
49 CFR 172.202 Table 49 CFR 172.101	Quantity and type of Packing: e.g. "1 x 50 mL" for organisms e.g. "3 kg" for Dry Ice <i>(if applicable)</i> "Packed in one fiberboard box"
IATA 620 IATA 954	Packing Instructions: Infectious Substance.....620 Dry Ice.....954 Authorization: Insert special provisions code if applicable
49 CFR 172.604 (d) IATA 620	Additional Handling information: add the following: "I declare that all of the applicable air transport requirements have been met." "Emergency Contact: (name) {phone numbers must be a 24/7 number assigned to a live person}" {Shipper is required to make advance arrangements with consignee and the carrier to ensure that shipment is transported and delivered without delay}
	Name/Title of Signatory:
	Place and Date:
	Signature: <i>(make sure you are in compliance before signing)</i>

Additional	
CAP Requirement	Prior to shipment notify the Washington State Public Health Lab of its arrival time. Email: PHL.mailroom@doh.wa.gov Phone: (206) 418-5579 FAX No.: (206) 364-0339
42 CFR 72.3 (f)	You must keep a copy of a receipt of delivery.
42 CFR 72.4	You must notify the Director, CDC, if shipment was not received within 5 days.
49 CFR 172.201 (e)	You must retain a copy of the shipping paper for 2 years after acceptance by the carrier. It must include the date of acceptance (keep the air bill).

Special Provisions

A81	The quantity limits shown in Columns J and L do not apply to body parts, organs or whole bodies.
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	<p><i>Note: Blood, urine and other body fluids are not considered “body parts” for the purposes of this special provision.</i></p> <p>☞ Transport in accordance with this Special Provision must be noted on the Shipper’s Declaration for Dangerous Goods.</p>
A140:	When the infectious substances to be transported are unknown, but suspected of meeting the criteria for inclusion in Category A and assigned to UN 2814 or UN 2900, the words “suspected category A infectious substance” must be shown in parentheses following the proper shipping name on the Shipper’s Declaration for Dangerous Goods, but not on the outer packagings.

Biological Substance Category B Ground, USPS, & Air Transport (includes taxi & private car) 2016	
Packaging Checklist {Documented Training is required prior to packaging and shipping infectious Agents: 49 CFR 172.700 (h), IATA Section 1.5}	
49 CFR 173.196	Triple packaging; primary and secondary are leak-proof for liquids and sift-proof for solids (<i>utilize commercially available shipping systems</i>).
49 CFR 173.196 IATA 650	In ambient or higher temperature, primary receptacles have been heat-sealed, have a skirted stopper or a metal crimp seal. Screw caps must be reinforced with adhesive tape (Prudent step at ALL temperatures).
49 CFR 173.6 amendment IATA 650	Quantities: a) For liquids: Max. each inner package 1.0 L and Max. outer packaging 4 L. b) For solids: Max inner package 4 kg and max. outer packaging 4 kg, excluding ice, dry ice or liquid nitrogen. Passenger or Cargo aircraft acceptable.
	Paperwork is separated from the specimen by a plastic sleeve or bag.
49 CFR 173.196 IATA 650	Absorbent material, capable of containing entire contents of primary containers is placed between primary and secondary receptacles.
49 CFR 173.196 IATA 650	Multiple primaries placed in secondary packaging must be wrapped with cushioning material to prevent contact with each other.
49 CFR 173.196 IATA 650	The primary receptacle or secondary packaging used for infectious substances must be capable of withstanding, without leakage, an internal pressure producing a pressure differential of not less than 95 kPa and at temperatures between –40°C to + 55°C (<i>utilize commercially available shipping systems</i>).
49 CFR 173.196 IATA 650	Outer packaging with one side at least 100 mm x 100 mm. Outer package must be of rigid construction. Completed package must meet drop test (<i>utilize commercially available shipping systems</i>).
49 CFR 173.196	An itemized list of contents is enclosed between secondary packaging and outer packaging.

IATA 650	
49 CFR 173.199	Interior supports in place to secure secondary package after ice has dissipated or melted (<i>utilize commercially available shipping systems</i>).
49 CFR 173.196	Chemical Ice, dry ice, or wet ice (<i>if applicable</i>) must be placed outside the secondary package (<i>Wet ice should only be used for same day delivery</i>)
49 CFR 173.196	<u>If using wet or dry ice.</u> For wet ice, the package must be leak-proof (sealed in plastic bag). For dry ice, packaging must permit release of carbon dioxide (<i>utilize commercially available shipping systems</i>).

Marking and Labeling Requirements	
OSHA: 1910.103 O(g)(1)(i)(A)	Biohazard warning label attached to secondary packaging (not outside box).
49 CFR 172.312 IATA 620 Section 7	Orientation (Up) arrows on opposite sides of shipping container are optional.
IATA 650	Outer packaging is marked "Biological Substance, Category B" adjacent to diamond marking (2"x 2") with inner lettering: "UN3373". (<i>As of October 1, 2006, only "Biological Substance, Category B" will be accepted as the proper shipping name</i>)
49 CFR 172.446	Dry Ice: Diamond shaped Class 9 label placed on outer packaging. Enter weight in Kg.
IATA 620	Name and telephone number of person responsible for shipment. Inside or on outside of package. USPS required it on outer package and inside.
DOT IATA 7.1.4	Overpacks (<i>not to be confused with outer packaging</i>), if used, must have all the labeling of inner packagings and be marked, "Overpack".

Documentation	
CAP Requirement	Prior to shipment notify the Washington State Public Health Lab of its arrival time. Email: PHL.mailroom@doh.wa.gov Phone: (206) 418-5579 FAX No.: (206) 364-0339
IATA 650 and 954	Airbill: In the Nature and Quantity of Goods box place "Biological Substance, Category B" and/or "Dry Ice".
49 CFR 172.201 (e)	You must retain a copy of the shipping paper for 2 years after acceptance by the carrier. It must include the date of acceptance (keep the airbill).
42 CFR 72.3 (f)	<i>You must keep a copy of a receipt of delivery.</i>

APPENDIX B

PHL Accreditation and Certification

Accreditation Body	Certification Number
Clinical Laboratory Improvement Act (CLIA)	50D0661453
College of American Pathologists (CAP)	24626-01
Department of Energy - Radiation Measurement Laboratory	WN-L074-1
Environmental Protection Agency (EPA) for drinking water bacteriology and environmental/radiation chemistry	WA 00003
Food and Drug Administration (FDA)	FOOD #475 SHELLFISH #705
Medical Test Site License (MTS)	MTS-1327
WA DOH HSQA Office of Laboratory Quality Assurance (LQA)	